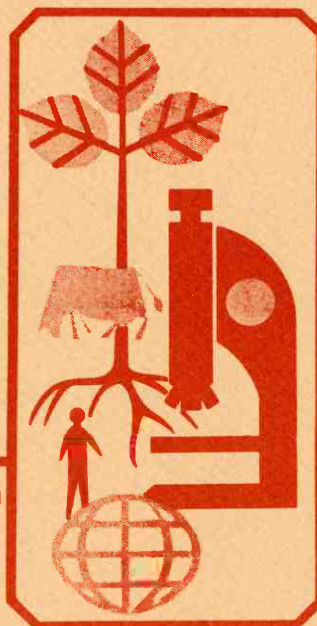


Technical Bulletin 222

# Cost of Producing Crops in the Irrigated Southwest

***PART II—NEW MEXICO***

**N. Gene Wright  
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Agricultural Experiment Station • University of Arizona

Tucson, Arizona

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## **FOREWORD**

The information developed in this project is a necessary input to achieving two basic objectives in the economic enhancement of Southwestern states:

1. To provide information needed for maximizing the agricultural base in the Southwestern States
2. To permit realistic planning of profit-making agri-businesses related to a sound agricultural base in these areas.

Some of these Southwest lands are already under irrigated cultivation and use, and additional acreages could be put under irrigation provided this would have economic advantages over other possible uses for the water and land.

The overall objective is to maximize the use of these irrigated lands as a basis for establishing and/or maintaining profit-making businesses suitable for each particular area. Such enterprises will provide living-wage jobs and assure continued prosperity in these regions.

The information in this project has been developed by the Department of Agricultural Economics of the University of Arizona under a contract with the Agribusiness Program, Agricultural Research Service, United States Department of Agriculture. The procedures for determining the various yields, costs, returns, and other data have been the same for each area and each state in order that the results will afford legitimate comparisons between the various crops and types of livestock in these areas. Each of the Experiment Stations and State Universities of the five states has participated in preparing the data and final reports. Separate reports have been prepared for each participating state; the findings of each report can be compared directly with the others since each has been prepared using the same guidelines.

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## GLOSSARY

*Calendar of operation:* A list of the different operations in sequence of their occurrence throughout the crop year. While the crop year falls within the calendar year for most crops, in some cases production overlaps into the next year. For instance, winter wheat production falls within two calendar years and there are times when final cotton harvesting operations may not be completed until early in the next calendar year.

*Cost of establishing a stand:* Cost of planting a perennial crop one year for harvesting several years thereafter, e.g., alfalfa.

*Fixed costs:* Costs that the farmer will experience whether or not a crop was planted. If the crop is not planted, the farmer will have certain costs depending upon the length of time his machinery, land, and management facilities are not used. If it is a year, then most costs except the actual operating costs of the machinery, labor, fertilizer, and part of the water costs would be incurred. A part of the water costs could be charged, depending upon the situation. If pump irrigation is used, there would be no charges for irrigation water if none was used; only the depreciation on the well and distribution system would be charged. If surface water is used, a minimum "water users" assessment is generally charged, whether water was used or not.

*Machinery complement:* The various machines used in the farming operation. In cases where the operations require more than one machine of a specific kind, the number of machines is stated.

*Nurse crop:* Usually a grain crop, such as wheat, which is used in some regions because it establishes quickly and is generally sown in advance of the alfalfa, so as to shelter the alfalfa seedlings from wind and/or water erosion of soil particles. In this report, costs of planting, growing, and harvesting the nurse crop are excluded from the production costs for alfalfa hay and alfalfa seed so that costs will be comparable among regions and also because the value of the grain and mixed hay (alfalfa and wheat straw) more than compensated for the nurse crop costs. Net returns from the sale of grain were credited to another account in the farm records. Mixed hay was generally fed to livestock on the farm.

*Variable costs:* Costs that are incurred only if the crop is planted, i.e., costs of inputs used directly in growing and harvesting the crop, including seed, fertilizer, water, machinery, and labor. Also included as "miscellaneous variable costs" are charges for certain items of expense that are incurred if the land is generally used for agricultural production instead of lying idle, such as charges for transportation, maintenance, office and bookkeeping expenses, management, and other expenses of running a farm.

## INTRODUCTION

The purpose of this study was to determine the cost of producing crops on irrigated land in New Mexico. These costs were determined in such a manner as to be comparable with similar costs in other states. Since a synthetic budgeting method was used, costs were based on the more efficient uses of agricultural inputs, at 1972 prices.<sup>1</sup>

Because different people desire information on costs in various amounts of detail, this report is divided into three sections: 1) a summary, 2) a detailed description of the areas and the cost of producing each crop by area, and 3) an appendix containing detailed tables of variable costs. The purpose of the latter is to make it possible to use this information as a bench-mark or a base, and to incorporate the latest cost data in order to update the estimates of the costs of producing these crops.

TABLE 1  
Acreage of Irrigated Crops in New Mexico, 1970 and 1971

|               | 1970      |         | 1971      |         |
|---------------|-----------|---------|-----------|---------|
|               | Acres     | Percent | Acres     | Percent |
| Sorghum       | 230,900   | 22      | 257,700   | 24      |
| Alfalfa Hay   | 226,360   | 21      | 231,300   | 22      |
| Other hay     | 161,750   | 16      | 145,220   | 13      |
| Cotton        | 150,830   | 14      | 154,280   | 14      |
| Wheat         | 86,800    | 8       | 95,700    | 9       |
| Other grain   | 114,230   | 11      | 118,120   | 11      |
| Vegetables    | 48,090    | 5       | 39,940    | 4       |
| Orchards      | 19,470    | 2       | 21,460    | 2       |
| Miscellaneous | 7,800     | 1       | 2,700     | 1       |
| Total         | 1,046,230 | 100     | 1,066,420 | 100     |

<sup>1</sup>There are five states involved in this study—Arizona, Colorado, Nevada, New Mexico, and Utah. For comparability of the base year costs, 1972 prices were used for each state.



## SUMMARY OF ESTIMATED COSTS

Estimated costs for producing the major irrigated crops in eight regions of New Mexico in 1972 were as follows:

### Four Corners Region

|             |                 |
|-------------|-----------------|
| Corn Silage | \$ 7.58 per ton |
| Alfalfa     | 28.98 per ton   |

### Mountain Region

|         |               |
|---------|---------------|
| Alfalfa | 25.87 per ton |
|---------|---------------|

### High Plains Region

|               |               |
|---------------|---------------|
| Grain Sorghum | 1.87 per cwt  |
| Wheat         | 2.83 per cwt  |
| Alfalfa       | 31.95 per ton |

### Middle Rio Grande Region

|         |               |
|---------|---------------|
| Alfalfa | 34.99 per ton |
|---------|---------------|

### Lower Rio Grande Region

|         |                          |
|---------|--------------------------|
| Cotton  | 0.2311 per pound of lint |
| Alfalfa | 29.10 per ton            |

### Southwest Region

|               |                          |
|---------------|--------------------------|
| Grain Sorghum | 2.15 per cwt             |
| Cotton        | 0.2324 per pound of lint |

### Lower Pecos Valley Region

|         |                          |
|---------|--------------------------|
| Barley  | 3.02 per cwt             |
| Cotton  | 0.2327 per pound of lint |
| Alfalfa | 26.87 per ton            |

### Southeast Region

|               |                          |
|---------------|--------------------------|
| Cotton        | 0.3062 per pound of lint |
| Grain Sorghum | 2.50 per cwt             |
| Alfalfa       | 27.00 per ton            |

Following is a list of crops giving production costs in order of lowest to highest cost region:

### Alfalfa

|                    |                 |
|--------------------|-----------------|
| Mountain Region    | \$25.87 per ton |
| Lower Pecos Valley | 26.87 per ton   |
| Southeast          | 27.00 per ton   |
| Four Corners       | 28.98 per ton   |
| Lower Rio Grande   | 29.10 per ton   |
| High Plains        | 31.95 per ton   |
| Middle Rio Grande  | 34.99 per ton   |

### Grain Sorghum

|             |                 |
|-------------|-----------------|
| High Plains | \$ 1.87 per cwt |
| Southwest   | 2.15 per cwt    |
| Southeast   | 2.50 per cwt    |

### Cotton

|                    |                             |
|--------------------|-----------------------------|
| Lower Rio Grande   | \$ 0.2311 per pound of lint |
| Southwest          | 0.2324 per pound of lint    |
| Lower Pecos Valley | 0.2327 per pound of lint    |
| Southeast          | 0.3062 per pound of lint    |

### Corn Silage

|              |                 |
|--------------|-----------------|
| Four Corners | \$ 7.58 per ton |
|--------------|-----------------|

It should be pointed out that the land ownership pattern in the Four Corners Region, the Mountain Region, the Upper Rio Grande Valley Region and the Lower Rio Grande Valley Region makes it very difficult for an operator to have enough land to make the most efficient use of machinery. Therefore, the above costs may appear low as compared to the cost actually experienced in these regions in 1972.

Slightly over 1,000,000 acres of land were irrigated for the production of crops in New Mexico in 1970 and 1971 (Table 1). Grain sorghum ranked first and alfalfa hay, second, among the irrigated crops, and together they accounted for almost one-half of the irrigated acreage. Hay other than alfalfa, including timothy and prairie hay, and also some pasture land, ranked third.

## REGIONS

There are eight major irrigated crop producing regions in New Mexico. In figure 1, these regions are numbered from left to right and north to south. The Four Corners region (No. 1) consists entirely of San Juan County. The principal irrigated area in this region is along the San Juan River. The Mountain region (No. 2) includes all or part of fifteen counties that have high valleys with a limited amount of water available for irrigation. The High Plains region of the State (No. 3) borders Colorado, Oklahoma and Texas. This is one of the major grain sorghum producing regions in the state.

The fourth region is the Middle Rio Grande Valley region. The fifth region is the Lower Rio Grande Valley region which divides the Southwest region (No. 6) which is both to the east and west of it and includes the southwest corner of the State and Otero County. The seventh region is the Lower Pecos Valley region which includes part of Chaves County and all of Eddy County. The lower end of the Pecos River runs through these two counties. The eighth region is the Southeast region, which consists of Lea County, in the southeast corner of the State.

## WATER RESOURCES

During the years 1960-1964, New Mexico exported 3.4 million acre-feet of water to Arizona and Texas. Arizona received 2,263,000 acre-feet and Texas received 1,155,000 acre-feet of water.

The Arkansas River Basin, which includes Ute Creek, the Canadian and Cimarron Rivers and their tributaries, contributed 340,000 acre-feet of water to Texas. Approximately 234,000 acre-feet flowed south in the Pecos River to Texas. The Rio Grande contributed 582,000 acre-feet annually to Texas during this period. The largest source by far was the San Juan River system, which contributed 2,029,000 acre-feet. The water from the San Juan River flows through Shiprock into Utah and eventually ends up in the Colorado River system behind Glen Canyon Dam. Another 237,000 acre-feet went to Arizona through the lower Colorado River system, which includes the Zuni, San Francisco and Gila Rivers.

New Mexico's water law is based on the doctrine of prior appropriation for beneficial use. All ground and surface waters belong to the public and are subject to appropriation in accordance with law under supervision of the State engineer.

The surface water code was enacted in essentially its present form in 1907, giving the State engineer general supervision of its measurement and apportionment of the surface water of the State. The groundwater code was enacted in substantially its present form in 1931 and essentially parallels the surface water code.

### *Four Corners Region*

The Four Corners Region includes San Juan County. This region has the greatest amount of surface water to be developed in New Mexico at this time. This surface water is available out of the San Juan River, behind the Navajo Dam. At the present time the 110,000-acre Navajo Irrigation Project is being developed to use surface water out of the San Juan River. Water is expected to be available by 1976 to irrigate the first 10,000-acre block of farm land. Surface water from the Animas, La Plata and San Juan Rivers provides water for the irrigated land in the Valleys of San Juan County at the present time. The potential exists for a limited amount of underground water development in certain areas of the region.

### *Mountain Region*

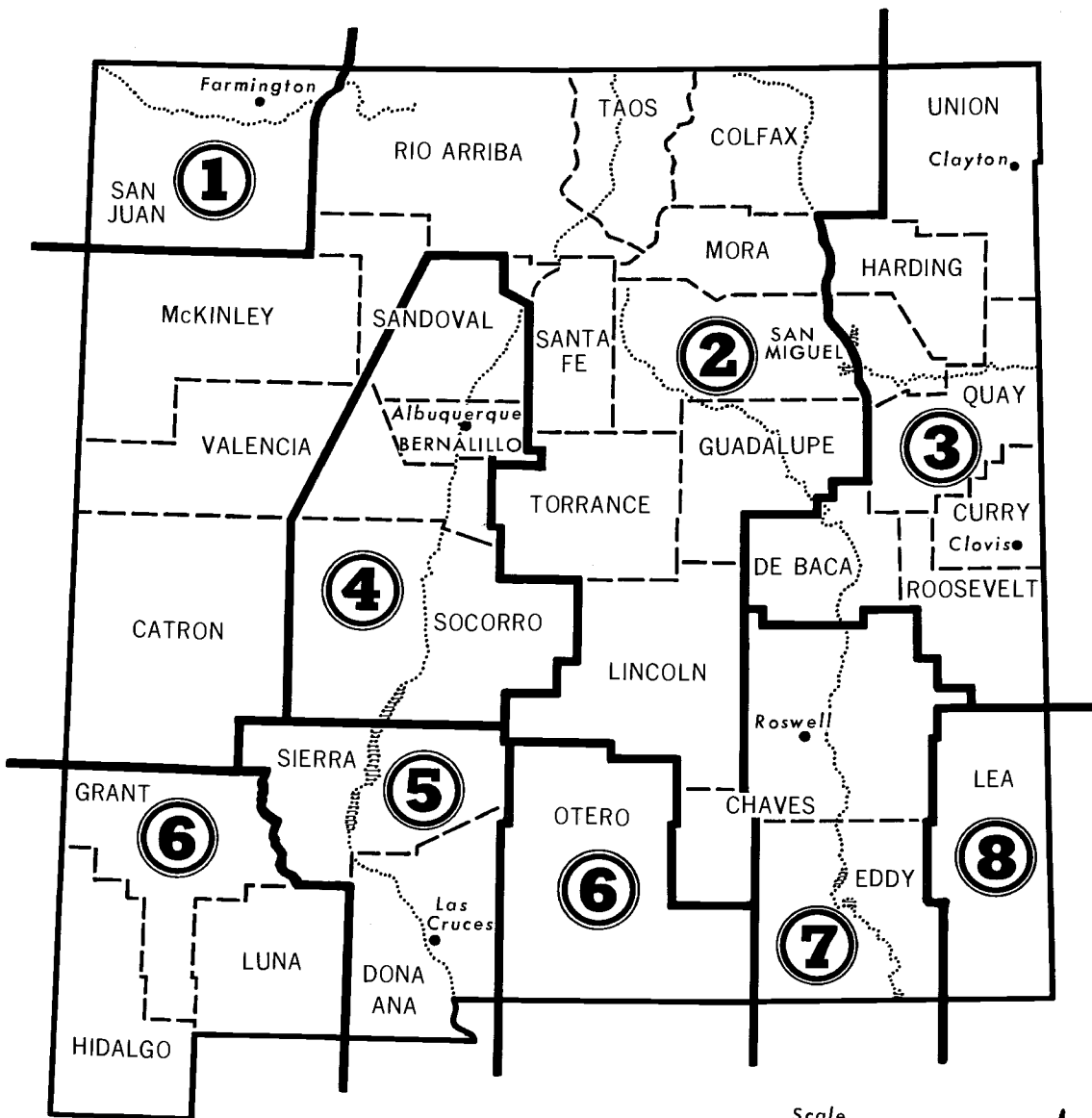
The Mountain region covers all or part of 15 counties in the north, west and central parts of New Mexico. Included in this region is the western one-quarter of Chaves County, all of Lincoln, Torrance, Guadalupe, Santa Fe, Mora, Colfax, Taos, Rio Arriba, McKinley, and Catron Counties. Also included is the western two-thirds of the San Miguel County, the western two-thirds of Valencia County, and the western one-third of Sandoval County. This region includes surface water, groundwater, and a combination of surface and groundwater used for irrigation purposes.

One substantial underground pump water area is located in Santa Fe and Torrance Counties near the town of Stanley in Santa Fe County and Estancia in Torrance County. This is an old pump water irrigation area that has been slowly expanded during the last several years due to the development of new irrigation systems, especially sprinkler systems, which are used extensively in the area.

Most of the farming areas of Guadalupe, San Miguel, Mora, Colfax, Taos and Rio Arriba Counties are located along streams and rivers in these various counties. Water for irrigation purposes in these counties is mostly surface water which is diverted from the streams. This surface water is usually in more than adequate supply during the spring, but during the summer growing season the supply can be irregular.

The possibility exists for a limited development of pumped underground water in certain areas, but at the present time land ownership problems and small farm size is a restricting factor to much development of irrigated crop land in these counties.

McKinley County has a rather limited amount of irrigated farm land at the present time, using surface water from small streams that flow through the area. The largest farming area is located along the Zuni River on the Zuni Indian Reservation. These farms are used to grow corn and roughages and have been in production for hundreds of years. Many fields were irrigated by the Zuni when Coronado passed through in 1540. Blackrock Lake provides a small storage capacity for surface water east of the Zuni Pueblo. During the spring, an adequate supply of water is available, but if



# New Mexico

## IRRIGATED CROP PRODUCING REGIONS

- |                            |                             |
|----------------------------|-----------------------------|
| ① 4- Corners Region        | ⑤ Lower Rio Grande Region   |
| ② Mountain Region          | ⑥ Southwest Region          |
| ③ High Plains Region       | ⑦ Lower Pecos Valley Region |
| ④ Middle Rio Grande Region | ⑧ Southeast Region          |

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FIGURE 1  
Irrigated Crop Producing Regions in New Mexico

prolonged dry spells are encountered during the summer months, the water supply can be irregular.

For this study, Valencia County west of the Laguna Pueblo is included in the Mountain region. Most of the irrigated farmland in western Valencia County is located along the Rio San Jose from Milan to the Laguna Pueblo and is irrigated by both surface water and pump groundwater. Many of these farms have been irrigated for centuries by the Laguna and Acoma Indians. At the present time, Valencia County is maintaining a rather stable amount of farm land under irrigation. The only potential for additional development would be with pumped underground water because of limits on river water.

Catron County has a small amount of irrigated farm land located along the various streams within the county. Most of this irrigation water is diverted from the streams. Stream flow is irregular late in the growing season, but is more than adequate during the spring run-off from the nearby mountains. The potential for additional land to irrigate in Catron County is limited because of Arizona's claim on water that originated in New Mexico. The claims have been adjudicated.

Western Sandoval County has a small amount of irrigated land located near the town of Cuba. Most of this area uses surface water diverted from the river, Rio Salado, which runs through this County. Much of the farming in the Cuba area began before 1900 and at the present time most farm efficiency could be improved by using modern technology.

Lincoln County and that portion of western Chaves County located in the mountain region has a small amount of irrigated land used mainly as apple orchards located along the Hondo, Penasco and Ruidoso Rivers. Most of the water used on these orchards is diverted from the three rivers which flow through the narrow irrigable valleys of these countries. A surplus of water is available during the spring-run-off from nearby mountains but during the summer growing season, water supplies can be variable in quantity.

#### *High Plains Region*

The High Plains region of New Mexico includes all of the counties of Roosevelt, Curry, De Baca, Quay, Harding, Union, and also San Miguel County east of the Canadian River. The major crop producing areas of Roosevelt and Curry Counties are located adjacent to the town of Portales, Melrose and Clovis. All water used for irrigation purposes in these two counties is pumped groundwater. This pumped groundwater is being mined at the present time from the Ogalalla formation, and from available studies, it is predicted that a severe reduction in the amount of irrigated acres will be seen by the year 2000 unless other sources of water are made available.

New farming areas are being developed in the Portales area on sandy soils using center-pivot type sprinkler systems. All this area is in the southern Great Plains and water is being pumped out of the Ogalalla formation.

At the present time a few farms have shifted back to dry land farming in these two counties because of the shortage of water. These farms are in the western parts of Roosevelt and Curry Counties. The farming area in De Baca County is located on the Pecos River near Fort Sumner. Both surface and groundwater are used

in the Fort Sumner area for irrigation. Approximately two-thirds of the water used for irrigation purposes is surface water diverted from the Pecos River. The remainder of the irrigation water is pumped from shallow wells located adjacent to the river in the Fort Sumner Area.

Quay County is irrigated by both surface and groundwater. That portion of Quay County located on the cap rock or Ogalalla formation is irrigated by pumped groundwater and like other areas in this formation, the water table is lowering because more water is being used than is being returned through recharge. Consequently, the water costs are rising as the water table drops on the cap rock portion of Quay County.

The farming region in Quay County located near Tucumcari and Logan is irrigated with water from Conchas Reservoir on the Canadian River. This farming area is limited to the present size because additional surface water is not available. At the present time very little additional land is being developed for irrigation purposes in Quay County. Any additional land will have to be irrigated with underground water.

Eastern San Miguel County and all of Harding County are also included in the High Plains Region. Irrigated farming in these counties is limited to an occasional field along the various streams in the area. Most of these fields are irrigated by shallow pumps located along these streams.

Union County has one of the few potentials in New Mexico for a substantial development of irrigated crop lands from existing groundwater supplies. This water is located in the Ogalalla formation and is being developed through the use of sprinkler systems. Many of these farms are using center-pivot sprinkler systems.

#### *Middle Rio Grande Region*

The Middle Rio Grande Region includes all of Socorro and Bernalillo Counties. Also included are the eastern two-thirds of Sandoval County and the eastern one-third of Valencia County. Basically, all the irrigated farm land in this region is located along the Rio Grande River which flows through these four counties.

North of Albuquerque the majority of farms use surface water from the Rio Grande River for irrigation purposes. All of the available surface water has been allocated and the amount of irrigated land is slowly decreasing because of urban encroachment from Albuquerque and Santa Fe. Some of these fields have been farmed by the Indians from the various pueblos located along the river for hundreds of years.

South of Albuquerque through the towns of Los Lunas, Belen, San Acacia, Socorro and San Antonio, a combination of surface water from the Rio Grande River and pumped underground water provide water for the irrigated farms located in these areas.

The number of irrigated acres for farming purposes in this region is going through a period of gradual decline. Urban encroachment from the neighboring towns is gradually taking up farm land and water rights. Also, some of the areas along the river are gradually encountering high water tables and a concentration of soluble salts which are causing problems with crop yields.

There is only a slight possibility for any additional development of irrigated farm lands. Any additional development will have to use underground water. At the present time all the surface water rights out of the Rio Grande have been adjudicated.

### *Lower Rio Grande Region*

The Lower Rio Grande Region includes all of Dona Ana and Sierra Counties. Caballo and Elephant Butte Reservoirs furnish surface water for irrigation purposes from the town of Truth or Consequences to the Texas State line.

On most farms which use surface water for irrigation purposes in this region, pumped groundwater must be used to supplement the water supply. The Lower Rio Grande River has not furnished enough surface water for complete irrigation requirements since 1941. In the last decade a small amount of additional land has been developed using pumped groundwater for irrigation purposes on the mesa land adjacent to the Rio Grande River. The potential for further development is limited in this region and would have to be taken from the groundwater supplies.

### *Southwest Region*

The Southwest region includes the counties of Otero, Luna, Grant and Hidalgo. The region is divided into two portions, east and west of the Lower Rio Grande Region, because they were considered similar in production practices and costs.

This region depends to a great extent on pumped groundwater for irrigation purposes. A few small areas located along the various rivers in this region divert a small amount of surface water from adjacent streams. Much of this surface water is available only during the period of spring runoff or runoff during and after summer rainstorms. During the major part of the growing season, in most instances, the water supply is variable.

A few small farms at the headwaters of the Gila and Mimbres Rivers in Grant County are irrigated by surface water only when it is available. Several areas on The Mimbres River from San Lorenzo to Deming use both surface and groundwater for irrigated purposes. In these locations the supply of surface water out of the Mimbres River is very irregular.

The major farming areas located near Deming, Columbus, Hatchita, Lordsburg, Animas, Cotton City and the Playas Valley depend almost exclusively on pumped groundwater for irrigation. The potential for expansion is limited because most of the area is classified as a critical water area by the State Engineer and consequently a permit must be obtained from the State Engineer in order to drill additional water wells.

Otero County uses a combination of both surface and groundwater to irrigate farms. Much of the surface water supply is adequate during the spring run-off in Rio Penasco, but during the rest of the year the water supply is irregular.

Water for irrigation purposes in the Tularosa and Alamogordo area is furnished mostly by pumped groundwater, although a limited amount of surface water is available during spring run-off from the nearby mountains or during summer rainstorms. The potential for additional development in this area is rather limited at this time because the surface water has been adjudicated and areas that contain groundwater have mostly been developed. Much of this privately owned land is surrounded by the National Forest or the White Sands missile range. Consequently, additional land is not available for farming at this time.

### *Lower Pecos Valley Region*

The Lower Pecos Valley Region includes all of Eddy and most of Chaves Counties. A small portion of Chaves County located on the west side of the county is included in the Mountain Region.

Most of the farming area in Chaves and Eddy Counties is located along the Pecos River from north of Roswell to Loving near the Texas border. The majority of irrigation water in this region is pumped water from underground basins. Some surface water from the Pecos River in conjunction with pumped underground water is used in the Hagerman area of Chaves County and the Carlsbad-Loving area of Eddy County.

Water from pumped underground water systems in the Roswell Basin is limited by the State Engineer to three and one-half acre-feet per year. Meters are fitted on individual wells to measure water flow.

Surface water available in this region is limited to the amount allotted to the farms in the Region. Any new development of irrigation sources in this region would have to be from underground water. At the present time this is impossible, because the area is a critical water area. In fact, in the last few years there has been a slight decrease in the number of acres irrigated because of adjudication and also due to the purchase of water rights by the Pecos Artesian Conservancy District.

### *Southeast Region*

This region consists entirely of Lea County. Major crop producing areas of the County are located adjacent to the towns of Tatum, Lovington and Hobbs. All irrigation in this region is by pumped groundwater. Water in this region is being mined at the present time and pumping lifts and costs are increasing. In the future, this region will probably encounter some abandonment of irrigated land because of high water costs.

### *Summary of Water Resources*

The eastern part of the State (High Plains and Southeast regions) which is using pumped underground water is gradually mining the water out of the Ogalalla formation and it is estimated by the year 2000 the number of acres using irrigated water in this area will be decreased by at least half, if not more.

The only area in the eastern part of New Mexico that has additional capacities for developing water is Union County, which is starting to mine water out of the Ogalalla formation. The Pecos River drainage area would be fortunate to hold its own in the future because the surface water is already adjudicated and in the lower Pecos River Valley of Chaves and Eddy Counties at the present time this area is being mined by pumps and is limited to three acre-feet per well, per year. In the future, it is likely that some of this pump land will gradually go out of production because of increased costs from the lowered water table. In the Rio Grande Valley, from the Colorado border to the Texas State line, a stable situation will probably prevail during the next few years. Any additional land will have to be developed by using pumped water.

The one part of New Mexico which has a surplus of surface water is San Juan County. At the present time work is continuing on the Navajo Irrigation Project which hopes to develop 110,000 acres of irrigated land

using surface water from the San Juan River. The first 10,000 acre block of farm land will have water available in 1976.

The southwest corner of the State is mostly using

pumped underground water. This area is mining the water at the present time and unless new supplies become available, the area will most likely hold its own during the next ten years.

## MARKETING OF NEW MEXICO CROPS

The single, most general problem in marketing crops produced in New Mexico is the upward pressure on costs due to the limited size of operations. In those areas where operations are small, crops cannot be processed and transported at costs that are low enough to be competitive. This is primarily a problem of the size of operations rather than inefficiency in marketing. Marketing information is available for most crops. Additional information may be needed for some of the forage crops, but it is doubtful that added returns would offset the additional costs of obtaining more information.

### *Four Corners Region*

Alfalfa hay is sold through the usual marketing channels, and is used either by local cattlemen, dairymen, or Indians. Purchases of alfalfa hay by Indians are quite often made on a per bale basis which makes it very expensive on a unit basis. Corn silage produced in this area is utilized by the local dairy and livestock industry. It is a product that has a very limited market area due to the fact that approximately two-thirds of the weight of the chopped corn plant is water.

### *Mountain Region*

The Mountain Region is a vast area with a limited number of irrigated valleys located on it. Thus, most of the alfalfa hay produced in the region is used by the local livestock and dairy industries. Surplus hay is sold to dairies and to owners of pleasure horses in nearby regions.

### *High Plains Region*

Output of alfalfa hay in this region is limited because of the shorter growing season. There is usually a strong market for the hay. Much of it is sold to local livestock producers, especially cattle feeders. The High Plains Region is adjacent to a large cattle feeding industry in the Texas Panhandle. Any alfalfa hay that is not used by the local cattle industry is sold to the cattle feeding industry in adjacent areas or to dairies. Grain sorghum produced here goes primarily to the cattle feeding industry. That which is not used locally is used either in the High Plains Area of Texas or other livestock producing areas that have a deficit of grain. Some of it is transported as far west as Arizona. The wheat produced in this region is primarily for human consumption. In recent years, much of the wheat has gone into the export trade. Some wheat is sold to local cattle feeders when the prices of feed grains are comparable to the price of wheat that is used in flour. The procedures for marketing wheat have been well-established and are generally efficient. Except for seasonal shortages of railroad cars and limited local storage, there is very little to be done to improve the marketing of this product.

### *Middle Rio Grande Valley Region*

The principal crop in this region is alfalfa hay. Most of it is used in the Albuquerque milkshed, sold in western New Mexico to ranchers, or sold on the Navajo Indian Reservation. The relatively small size of operations limits the efficiency of the marketing of this product.

### *Lower Rio Grande Valley Region*

Alfalfa hay grown in this region is used to a great extent by local dairies, particularly in the El Paso and Las Cruces areas. Part of the hay is used for the production of livestock, especially for the feeding of pleasure horses in the El Paso and Las Cruces areas.

Most of the cotton grown in this region, and also in the Southwest and Lower Pecos Valley regions, is of the Acala 1517 variety, which is especially strong and is in demand for use in polyester blends. The principal market outlet for cotton grown in this region is through a cooperative in El Paso, Southwest Irrigated Growers, and through local buyers, for use in the domestic United States market. In addition, some cotton is sold in the export trade. A considerable effort is made to market the cotton as efficiently as possible, and new methods are under study constantly.

### *Southwest Region*

Cotton grown in this region is ginned locally and sold through Southwestern Irrigated Growers or an independent merchant. Most of the cotton produced in this region is of the Acala 1517 variety. Grain sorghum produced in this area is mostly used by local feeders and hog producers. The surplus is shipped to the cattle feeding industries in Arizona and Southern California.

### *Lower Pecos Valley Region*

The Lower Pecos Valley Region has three major crops—cotton, barley, and alfalfa hay. There are no particular problems involving marketing facilities. Cotton is of the Acala 1517 variety. It is ginned locally and sold through the Southwestern Irrigated Growers Cooperative in El Paso, and to local cotton merchants.

Most of the barley is used by local livestock industries. It is a favorite feed for cattle as well as sheep and there is no problem finding a market for it. Barley in excess of local needs finds a ready market in the feedlots on the High Plains of Texas and other adjacent areas.

Alfalfa hay goes to the local livestock industry and to west and central Texas for beef and cattle feeding. In areas to the east, which are of higher elevation, it is difficult to produce sufficient forage to support cattle feeding there. Thus, any hay not used locally is usually sold in these areas.

## Southeast Region

Most of the alfalfa hay produced is used by the expanding cattle feeding industry located in the region. Any that is not needed by this industry has a ready market in west and central Texas. Grain sorghum is used primarily by local feedlots. Surplus grain may be

sold to the west, in the Pecos Valley, or to the east in the feedlots in the High Plains area. A major reason for the rapid increase in grain production in this area is the growth in cattle feeding operations in the general area.

## ESTIMATES OF PRODUCTION COSTS

### *Method of determining Costs*

A synthetic budgeting method was used to determine cost estimates. These budgets are based on extensive use of machinery throughout most of the year, as would have been expected in a commercial farming operation in 1971 and 1972. Information on operating times and on the practical efficiency of the various machines was obtained from farm operators who used them extensively on large farms in Arizona. On the basis of this information and knowledge of prevailing practices in the production of the specified crops in New Mexico, estimates of annual machine usage were developed as shown in Table 2.

The factor that limited the size of operation in this study was usually the harvesting machine. The size of operation was based on the area over which a specific harvesting machine or a combination of harvesting machines could be used most efficiently. For example, in the production of alfalfa hay, the machine that has the greatest limiting effect is the swather (harvester). It can cover only a limited number of acres in a given time. Efficient equipment is important because hay must be harvested within a given time to be of good quality. If a farmer's operation is not large enough to use his harvesting machinery efficiently, he probably would not be able to produce at unit costs as low as the estimates in this report. An alternative for overcoming this problem is to use custom harvesters.

A typical machinery complement for each specific operation was established with the objective of performing that operation at the lowest cost (Appendix B). Certain problems and variations had to be considered in estimating machinery use. Farmers located in areas with shorter growing seasons tend to make more repairs to their machinery, so as to extend its life over a longer number of hours of use than if the machine were used where the growing season is longer, i.e., 300 to 325 days per year. In the latter case, as the machine becomes worn, it is impractical to replace many of the parts. In the former case, if the farmer or rancher has time when his opportunity cost is near zero, he may find it more profitable to repair the machine and extend its life rather than to replace it.

TABLE 2  
Annual Use of Selected Farm Machines in  
New Mexico Irrigated Crop Budgets

|                   | Hours per year |
|-------------------|----------------|
| 90—100 HP Tractor | 2000           |
| 65—75 HP Tractor  | 2000           |
| Cotton Picker     | 500            |
| Grain Combine     | 600            |
| Swather           | 600            |
| Hay Baler         | 500            |
| Bale Wagon        | 500            |

Machinery costs were calculated using 1972 costs for new machinery. Fuel and repair costs were based on the Agricultural Engineering Handbook formulas. In some instances, where experience indicated that the Agriculture Engineering Handbook formulas were underestimating costs, the costs were increased in accordance with more current information. Interest, depreciation, insurance and other fixed costs were included.

Labor rates include social security, industrial insurance, Occupational Safety and Health Act insurance, employment compensation, and vacation costs. The amount and type of materials used and the per unit costs of these materials are based on the best information available. These components should be adjusted when local conditions indicate the information included in this report is not appropriate. Understandably, there is a limit to the extent of refinement of cost estimates developed in a study of this type, if it is to serve as a more or less generalized reference. Thus, for example, allowances were not made for different rates of application of fertilizer, water, etc., by soil types and other physical aspects for each small locality.

Included under variable costs are interest charges on the variable costs in the budget. A charge has been added for management, office overhead, bookkeeping, maintenance, transportation, and other expenses of running a farm.

Since taxes vary among the different locations in the region, it is difficult to determine a representative cost figure. Furthermore, taxes vary from year to year. Thus, it was considered preferable to calculate taxes as a regional average rather than to develop estimates for each county within a region. For example, in the Mountain region, there would be 14 different tax rates due to the difference in county taxes and there could be further variation within the counties due to different school tax rates. To develop estimated costs of production for specific localities within a region, it would be necessary to recalculate the costs using the local tax rate.

Interest cost in the amount of a 6 percent charge on capital investment in land was included in the fixed costs. Although interest rates for loans on agricultural land rose sharply in 1970 and then receded in subsequent years, the rate of new loans in 1972 was still higher than 6 percent. Nevertheless, the average interest rate on outstanding loans was more likely around 6 percent than the 1972 prevailing rates of 7 percent and higher. Thus, the more conservative rate of 6 percent was selected as the interest charge on the investment in land.

### Updating Cost Estimates

Because prices and charges for the various factors of production are constantly changing, it is well recognized that findings in any cost study will soon be out of date. Thus, one of the major objectives of this project was to develop a system for categorizing and present-

ing the findings so as to facilitate updating of the estimates by changing applicable items of cost.

The procedure for updating cost estimates appears in the Appendix, along with tables showing detailed cost information for the variable costs of producing the various crops.

## Regional Cost Estimates for Producing Irrigated Crops

### Four Corners

Table 3 gives the estimated cost for producing corn silage in this region. Variable costs were estimated to be more than double the fixed costs—\$95.43 compared to \$41.10. It was estimated that a typical yield for this type of operation using these inputs would be 18 tons per acre, delivered to the pit. Thus, the estimated cost per ton was \$7.58. It should be pointed out that transportation cost from the field to the pit was included, but it was assumed that the pit was on the same farm where the silage was produced.

Costs for establishing an acre of alfalfa in the Four Corners Region are shown in Table 4, and Table 5 gives the estimated costs for producing an acre of alfalfa after the stand has been established. Variable costs for establishing the stand were estimated to be \$37.19 and fixed costs were \$15.07, or a total of \$52.26 per acre. The estimated cost of producing alfalfa hay once the stand was established was estimated to be \$115.90 per acre, including \$63.10 for the variable costs and \$52.80 for the fixed costs. Costs of establishing the stand were prorated over a five-year productive life, and the resulting annual cost of \$10.45 was included in fixed costs. With an expected yield of four tons of alfalfa hay per acre, the average cost per ton was almost \$29.00.

TABLE 3

#### Estimated Costs for Producing One Acre of Corn Silage in the Four Corners Region of New Mexico

| Variable Costs                                     |          |
|----------------------------------------------------|----------|
| 1. Land Preparation                                | \$ 9.41  |
| 2. Planting                                        | 5.35     |
| 3. Growing                                         |          |
| a. Fertilization                                   | \$19.17  |
| b. Irrigation                                      | 11.60    |
| c. Insect Control                                  | 5.00     |
| d. Chemical Weed Control                           | 4.93     |
|                                                    | 40.70    |
| 4. Harvesting                                      | 20.55    |
| 5. Misc. Variable Costs                            | 15.75    |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 3.67     |
| Total Variable Costs                               | \$ 95.43 |
| Fixed Costs                                        |          |
| 1. Machinery                                       | 18.04    |
| 2. Water                                           | 5.62     |
| 3. Taxes                                           | 2.44     |
| 4. Interest on Land Investment<br>(250 @ 6%)       | 15.00    |
| Total Fixed Costs                                  | 41.10    |
| Total Producing Costs/Acre                         | \$136.53 |

Yield: 18 tons of silage per acre, delivered to the pit.

Cost per ton of silage =  $\frac{\$136.53}{18}$  = \$7.58 per ton.

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### Mountain

Alfalfa hay is the only major crop produced in the Mountain Region. Table 6 shows the estimated costs for establishing a stand of alfalfa in this region, and Table 7 gives costs of producing one acre of alfalfa after the stand has been established. The variable costs for establishing the stand were estimated to be \$38.28 and the fixed costs were \$19.06, for a total of \$57.34 per acre.

TABLE 4

#### Estimated Costs for Establishing One Acre of Alfalfa in the Four Corners Region of New Mexico

| Variable Costs                                     |                   |
|----------------------------------------------------|-------------------|
| 1. Land Preparation                                | \$ 6.41           |
| 2. Planting                                        | 10.15             |
| 3. Growing                                         |                   |
| a. Fertilization                                   | \$ 5.93           |
| b. Irrigation                                      | 5.40              |
| c. Insect Control                                  | <sup>1</sup>      |
| d. Chemical Weed Control                           | <sup>1</sup>      |
|                                                    | 11.33             |
| 4. Harvesting                                      | <sup>1</sup>      |
| 5. Misc. Variable Costs                            | 7.87 <sup>2</sup> |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 1.43              |
| Total Variable Costs                               | \$37.19           |
| Fixed Costs                                        |                   |
| 1. Machinery                                       | 3.85              |
| 2. Water                                           | 2.50              |
| 3. Taxes                                           | 1.22 <sup>2</sup> |
| 4. Interest on Land Investment<br>(250 @ 6%)       | 7.50 <sup>2</sup> |
| Total Fixed Costs                                  | 15.07             |
| Total Establishing Costs/Acre                      | \$52.26           |

<sup>1</sup> No cost generally incurred.

<sup>2</sup> One-half year, fall planted.

The variable costs for producing an acre of alfalfa hay after the stand was established were estimated to be \$40.36 while the fixed costs were \$37.24, or a total of \$77.60 per acre. It was estimated that three tons of alfalfa hay would be produced per acre in this region, given the production practices that were included in the budget, and that the life of the stand would be five years. Thus, a fifth of the cost of establishing the stand was prorated to each year's production costs, being included with the fixed costs. With an estimated yield of three tons per acre, the average cost per ton of alfalfa hay was estimated to be \$25.87.



TABLE 5

**Estimated Costs for Producing One Acre of Alfalfa  
in the Four Corners Region of New Mexico**

|                                                                 |                                        |
|-----------------------------------------------------------------|----------------------------------------|
| <i>Variable Costs</i>                                           |                                        |
| 1. Land Preparation                                             | \$ 2.00                                |
| 2. Planting                                                     | 1                                      |
| 3. Growing                                                      |                                        |
| a. Fertilization                                                | \$ 5.63                                |
| b. Irrigation                                                   | 13.35                                  |
| c. Insect Control                                               | 4.50                                   |
| d. Chemical Weed Control                                        | 2                                      |
|                                                                 | <hr/>                                  |
|                                                                 | 23.48                                  |
| 4. Harvesting                                                   | 19.44                                  |
| 5. Misc. Variable Costs                                         | 15.75                                  |
| 6. Interest on Variable Costs<br>(8% for 6 Months)              | 2.43                                   |
| Total Variable Costs                                            | <hr/>                                  |
|                                                                 | \$ 63.10                               |
| <i>Fixed Costs</i>                                              |                                        |
| 1. Machinery                                                    | 14.91                                  |
| 2. Water                                                        | 10.00                                  |
| 3. Taxes                                                        | 2.44                                   |
| 4. Interest on Land Investment<br>(\$250 @ 6%)                  | 15.00                                  |
| 5. Establishing the Stand<br>(prorated over 5 years)            | 10.45 <sup>3</sup>                     |
| Total Fixed Costs                                               | <hr/>                                  |
|                                                                 | 52.80                                  |
| Total Producing Costs/Acre                                      | <hr/>                                  |
|                                                                 | \$115.90                               |
| Cost per ton of alfalfa hay (Estimated yield: 4 tons per acre): |                                        |
|                                                                 | $\frac{\$115.90}{4} = \$28.98$ per ton |

<sup>1</sup> Included in Table 4 under costs of establishing a stand.

<sup>2</sup> No cost generally incurred.

<sup>3</sup> Annual cost for establishing the alfalfa stand (Table 4) distributed over a 5 year productive life =  $\frac{\$52.26}{5} = \$10.45$

TABLE 7

**Estimated Costs for Producing One Acre of Alfalfa  
in the Mountain Region of New Mexico**

|                                                                 |                                       |
|-----------------------------------------------------------------|---------------------------------------|
| <i>Variable Costs</i>                                           |                                       |
| 1. Land Preparation                                             | \$ 2.25                               |
| 2. Planting                                                     | 1                                     |
| 3. Growing                                                      |                                       |
| a. Fertilization                                                | \$ 3.77                               |
| b. Irrigation                                                   | 8.50                                  |
| c. Insect Control                                               | 2                                     |
| d. Chemical Weed Control                                        | 2                                     |
|                                                                 | <hr/>                                 |
|                                                                 | 12.27                                 |
| 4. Harvesting                                                   | 16.42                                 |
| 5. Misc. Variable Costs                                         | 7.87                                  |
| 6. Interest on Variable Costs<br>(8% for 6 Months)              | 1.55                                  |
| Total Variable Costs                                            | <hr/>                                 |
|                                                                 | \$40.36                               |
| <i>Fixed Costs</i>                                              |                                       |
| 1. Machinery                                                    | 8.39                                  |
| 2. Water                                                        | 4.00                                  |
| 3. Taxes                                                        | 1.38                                  |
| 4. Interest on Land Investment<br>(\$250 @ 6%)                  | 12.00                                 |
| 5. Establishing the Stand<br>(prorated over 5 years)            | 11.47 <sup>3</sup>                    |
| Total Fixed Costs                                               | <hr/>                                 |
|                                                                 | 37.24                                 |
| Total Producing Costs/Acre                                      | <hr/>                                 |
|                                                                 | \$77.60                               |
| Cost per ton of alfalfa hay (Estimated yield: 3 tons per acre): |                                       |
|                                                                 | $\frac{\$77.60}{3} = \$25.87$ per ton |

<sup>1</sup> Included in Table 6 under costs of establishing a stand.

<sup>2</sup> No cost generally incurred.

<sup>3</sup> Annual cost for establishing the alfalfa stand (Table 6) distributed over a 5 year productive life =  $\frac{\$57.34}{5} = \$11.47$

TABLE 6

**Estimated Costs for Establishing One Acre of Alfalfa  
in the Mountain Region of New Mexico**

|                                                    |         |
|----------------------------------------------------|---------|
| <i>Variable Costs</i>                              |         |
| 1. Land Preparation                                | \$ 8.13 |
| 2. Planting                                        | 10.15   |
| 3. Growing                                         |         |
| a. Fertilization                                   | \$ 5.93 |
| b. Irrigation                                      | 4.73    |
| c. Insect Control                                  | 1       |
| d. Chemical Weed Control                           | 1       |
|                                                    | <hr/>   |
|                                                    | 10.66   |
| 4. Harvesting                                      | 1       |
| 5. Misc. Variable Costs                            | 7.87    |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 1.47    |
| Total Variable Costs                               | <hr/>   |
|                                                    | \$38.28 |
| <i>Fixed Costs</i>                                 |         |
| 1. Machinery                                       | 4.18    |
| 2. Water                                           | 1.50    |
| 3. Taxes                                           | 1.38    |
| 4. Interest on Land Investment<br>(\$200 @ 6%)     | 12.00   |
| Total Fixed Costs                                  | <hr/>   |
|                                                    | 19.06   |
| Total Establishing Costs/Acre                      | <hr/>   |
|                                                    | \$57.34 |

<sup>1</sup>No cost generally incurred.

### High Plains

One of the major crops in the High Plains region is grain sorghum. Table 8 gives the estimated cost for producing this crop. Variable cost were \$80.05, and the fixed costs were \$41.38, with a total estimated cost of \$121.43. The expected yield from this level of inputs was 6,500 pounds of grain per acre, indicating an average cost of \$1.87 per hundred pounds of grain sorghum.

For the production of wheat, another major grain crop in the High Plains Region, the total variable costs were estimated to be a little over \$66.00 per acre (Table 9). Fixed costs were almost \$36.00 per acre, bringing the estimated total costs to about \$102.00 per acre. With a yield estimated to be 3,600 pounds of grain per acre, the cost per hundredweight of wheat was \$2.83.

The estimated costs for establishing an acre of alfalfa in the High Plains region of New Mexico are shown in Table 10. The variable costs were estimated at \$38.84 an acre while the fixed costs amounted to \$16.79, giving a total of \$55.63 per acre. Table 11 summarizes the estimated costs for producing an acre of alfalfa in the High Plains region after the alfalfa stand has been established. Variable costs were estimated to be \$72.90 and the fixed costs were \$54.90 an acre, including an annual charge of \$13.91 for establishing the stand. Thus, the total cost of producing one acre of alfalfa was \$127.80. With an estimated yield of four tons per acre, the average cost of a ton of alfalfa hay was estimated to be \$31.95.

TABLE 8

**Estimated Costs for Producing One Acre of Grain Sorghum  
in the High Plains Region of New Mexico**

|                                                    |              |
|----------------------------------------------------|--------------|
| <i>Variable Costs</i>                              |              |
| 1. Land Preparation                                | \$11.56      |
| 2. Planting                                        | 4.63         |
| 3. Growing                                         |              |
| a. Fertilization                                   | \$13.70      |
| b. Irrigation                                      | 17.72        |
| c. Insect Control                                  | <sup>1</sup> |
| d. Chemical Weed Control                           | 5.50         |
| e. Cultivation                                     | 1.45         |
|                                                    | 38.37        |
| 4. Harvesting                                      | 6.66         |
| 5. Misc. Variable Costs                            | 15.75        |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 3.08         |
| Total Variable Costs                               | \$ 80.05     |
| <i>Fixed Costs</i>                                 |              |
| 1. Machinery                                       | 14.50        |
| 2. Water                                           | 9.00         |
| 3. Taxes                                           | 1.38         |
| 4. Interest on Land Investment<br>(\$275 @ 6%)     | 16.50        |
| Total Fixed Costs                                  | 41.38        |
| Total Producing Costs/Acre                         | \$121.43     |

Yield: 6500 pounds of grain per acre. Cost per hundred-weight of grain =  $\frac{\$121.43}{65} = \$1.87$  cwt.

<sup>1</sup> No cost generally incurred.

TABLE 9

**Estimated Costs for Producing One Acre of Wheat  
in the High Plains Region of New Mexico**

|                                                    |              |
|----------------------------------------------------|--------------|
| <i>Variable Costs</i>                              |              |
| 1. Land Preparation                                | \$ 8.29      |
| 2. Planting                                        | 6.40         |
| 3. Growing                                         |              |
| a. Fertilization                                   | \$11.60      |
| b. Irrigation                                      | 14.80        |
| c. Insect Control                                  | <sup>1</sup> |
| d. Chemical Weed Control                           | <sup>1</sup> |
|                                                    | 26.40        |
| 4. Harvesting                                      | 6.66         |
| 5. Misc. Variable Costs                            | 15.75        |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 2.54         |
| Total Variable Costs                               | \$ 66.04     |
| <i>Fixed Costs</i>                                 |              |
| 1. Machinery                                       | 10.07        |
| 2. Water                                           | 8.00         |
| 3. Taxes                                           | 1.38         |
| 4. Interest on Land Investment<br>(\$275 @ 6%)     | 16.50        |
| Total Fixed Costs                                  | 35.95        |
| Total Producing Costs/Acre                         | \$101.99     |

Yield: 3600 pounds of grain per acre. Cost per hundred-weight of grain =  $\frac{\$101.99}{36} = \$2.83$  per cwt.

<sup>1</sup> No cost generally incurred.

TABLE 10

**Estimated Costs for Establishing One Acre of Alfalfa  
in the High Plains Region of New Mexico**

|                                                    |                   |
|----------------------------------------------------|-------------------|
| <i>Variable Costs</i>                              |                   |
| 1. Land Preparation                                | \$ 7.50           |
| 2. Planting                                        | 9.89              |
| 3. Growing                                         |                   |
| a. Fertilization                                   | \$ 4.69           |
| b. Irrigation                                      | 7.40              |
| c. Insect Control                                  | <sup>1</sup>      |
| d. Chemical Weed Control                           | <sup>1</sup>      |
|                                                    | 12.09             |
| 4. Harvesting                                      | <sup>1</sup>      |
| 5. Misc. Variable Costs                            | 7.87 <sup>2</sup> |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 1.49              |
| Total Variable Costs                               | \$38.84           |
| <i>Fixed Costs</i>                                 |                   |
| 1. Machinery                                       | 3.85              |
| 2. Water                                           | 4.00              |
| 3. Taxes                                           | .69 <sup>2</sup>  |
| 4. Interest on Land Investment<br>(\$275 @ 6%)     | 8.25 <sup>2</sup> |
| Total Fixed Costs                                  | 16.79             |
| Total Establishing Costs/Acre                      | \$55.63           |

<sup>1</sup> No cost generally incurred.

<sup>2</sup> One-half year, fall planting.

TABLE 11

**Estimated Costs for Producing One Acre of Alfalfa  
in the High Plains Region of New Mexico**

|                                                      |                    |
|------------------------------------------------------|--------------------|
| <i>Variable Costs</i>                                |                    |
| 1. Land Preparation                                  | \$ 2.32            |
| 2. Planting                                          | <sup>1</sup>       |
| 3. Growing                                           |                    |
| a. Fertilization                                     | \$ 7.96            |
| b. Irrigation                                        | 21.25              |
| c. Insect Control                                    | <sup>2</sup>       |
| d. Chemical Weed Control                             | <sup>2</sup>       |
|                                                      | 29.21              |
| 4. Harvesting                                        | 22.82              |
| 5. Misc. Variable Costs                              | 15.75              |
| 6. Interest on Variable Costs<br>(8% for 6 Months)   | 2.80               |
| Total Variable Costs                                 | \$ 72.90           |
| <i>Fixed Costs</i>                                   |                    |
| 1. Machinery                                         | 11.11              |
| 2. Water                                             | 12.00              |
| 3. Taxes                                             | 1.38               |
| 4. Interest on Land Investment<br>(\$275 @ 6%)       | 16.50              |
| 5. Establishing the Stand<br>(prorated over 4 years) | 13.91 <sup>3</sup> |
| Total Fixed Costs                                    | 54.90              |
| Total Producing Costs/Acre                           | \$127.80           |

Cost per ton of alfalfa hay (Estimated yield: 4 tons per acre):  
 $\frac{\$127.80}{4} = \$31.95$  per ton.

<sup>1</sup> Included in Table 10 under costs of establishing the stand.

<sup>2</sup> No cost generally incurred.

<sup>3</sup> Annual cost for establishing the alfalfa stand, distributed over a 4 year productive life =  $\frac{\$55.63}{4} = \$13.91$

*Middle Rio Grande*

The only major crop produced in this area, as in the Mountain Region, is alfalfa hay. Tables 12 and 13 give the estimated cost of producing alfalfa hay in this region. Establishing an acre of alfalfa included variable costs of \$41.74 and fixed costs of \$21.07 per acre. The total costs for establishing an acre of alfalfa were \$62.81.

The costs of producing an acre of alfalfa after the stand was established are shown in Table 13. The variable costs were estimated to be \$88.63 and the fixed costs, \$68.83 per acre, including a prorated cost of \$12.56 per year for establishing the stand. Total estimated production costs were \$157.46 per acre of alfalfa. With an estimated yearly production of four and one-half tons per acre, the average cost was almost \$35.00 per ton of alfalfa hay.

*Lower Rio Grande*

There are two major crops in this region—cotton and alfalfa. Table 14 gives the estimated costs for producing one acre of cotton. Variable costs were estimated to be \$138.02 and the fixed costs, \$78.86 an acre, bringing the estimated total costs to \$216.88 per acre. A yield of 800 pounds of cotton lint and 1,280 pounds of cottonseed per acre was considered a reasonable expectation with the level of inputs included in the budget. Allowing credit for the cottonseed at \$50.00 a ton reduced the total cost by \$32.00 to a total of \$184.88 (the value of the cottonseed in this instance was equivalent to the ginning cost). With an estimated yield of 800 pounds of lint per acre, the average cost per pound of lint was a little over 23 cents a pound. Without the credit for the cottonseed, the cost was a little over 27 cents a pound (see bottom of Table 14).

TABLE 13

**Estimated Costs for Producing One Acre of Alfalfa in the Middle Rio Grande Region of New Mexico**

| <i>Variable Costs</i>                                            |                                           |
|------------------------------------------------------------------|-------------------------------------------|
| 1. Land Preparation                                              | \$ 2.00                                   |
| 2. Planting                                                      | 1                                         |
| 3. Growing                                                       |                                           |
| a. Fertilization                                                 | \$10.28                                   |
| b. Irrigation                                                    | 31.60                                     |
| c. Insect Control                                                | 2                                         |
| d. Chemical Weed Control                                         | 2                                         |
|                                                                  | 41.88                                     |
| 4. Harvesting                                                    | 25.59                                     |
| 5. Misc. Variable Costs                                          | 15.75                                     |
| 6. Interest on Variable Costs<br>(8% for 6 Months)               | 3.41                                      |
| <b>Total Variable Costs</b>                                      | <b>\$ 88.63</b>                           |
| <i>Fixed Costs</i>                                               |                                           |
| 1. Machinery                                                     | 12.67                                     |
| 2. Water                                                         | 20.00                                     |
| 3. Taxes                                                         | 2.60                                      |
| 4. Interest on Land Investment<br>(\$350 @ 6%)                   | 21.00                                     |
| 5. Establishing the Stand<br>(prorated over 5 years)             | 12.56 <sup>3</sup>                        |
| <b>Total Fixed Costs</b>                                         | <b>68.83</b>                              |
| <b>Total Producing Costs/Acre</b>                                | <b>\$157.46</b>                           |
| Cost per ton of alfalfa hay (Estimated yield: 4.5 tons per acre) |                                           |
|                                                                  | $\frac{\$157.46}{4.5} = \$34.99$ per ton. |

<sup>1</sup> Included in Table 12 under costs of establishing the stand.

<sup>2</sup> No cost generally incurred.

<sup>3</sup> Annual cost for establishing the alfalfa stand, distributed over a 5 year productive life =  $\frac{\$62.81}{5} = \$12.56$

TABLE 12

**Estimated Costs for Establishing One Acre of Alfalfa in the Middle Rio Grande Region of New Mexico**

| <i>Variable Costs</i>                              |                    |
|----------------------------------------------------|--------------------|
| 1. Land Preparation                                | \$ 7.34            |
| 2. Planting                                        | 10.15              |
| 3. Growing                                         |                    |
| a. Fertilization                                   | \$ 5.93            |
| b. Irrigation                                      | 8.85               |
| c. Insect Control                                  | 1                  |
| d. Chemical Weed Control                           | 1                  |
|                                                    | 14.78              |
| 4. Harvesting                                      | 1                  |
| 5. Misc. Variable Costs                            | 7.87 <sup>2</sup>  |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 1.60               |
| <b>Total Variable Costs</b>                        | <b>\$41.74</b>     |
| <i>Fixed Costs</i>                                 |                    |
| 1. Machinery                                       | 4.27               |
| 2. Water                                           | 5.00               |
| 3. Taxes                                           | 1.30 <sup>2</sup>  |
| 4. Interest on Land Investment<br>(\$350 @ 6%)     | 10.50 <sup>2</sup> |
| <b>Total Fixed Costs</b>                           | <b>21.07</b>       |
| <b>Total Establishing Costs/Acre</b>               | <b>\$62.81</b>     |

<sup>1</sup> No cost generally incurred.

<sup>2</sup> One-half year, fall planted.

The other major crop produced in the Lower Rio Grande Valley is alfalfa hay, which is needed in the rotation with the production of cotton. It restores the soil structure and fertility. Tables 15 and 16 show the estimated costs for producing alfalfa in this region. The estimated cost of establishing the stand amounted to \$67.24 an acre, including nearly \$39.00 for the variable costs and \$28.27 for the fixed costs. It was estimated that the productive life of the stand would extend over a three year period. Thus, a charge of \$22.41 per acre should be added to production costs as the annual prorated cost for establishing the stand. Total estimated costs for producing an acre of hay were \$189.18. At an estimated yield of six and one-half tons per acre, the average cost per ton of hay was \$29.10.

TABLE 14

**Estimated Costs for Producing One Acre of Cotton  
in the Lower Rio Grande Region of New Mexico**

|                                                           |                 |
|-----------------------------------------------------------|-----------------|
| <i>Variable Costs</i>                                     |                 |
| 1. Land Preparation                                       | \$12.72         |
| 2. Planting                                               | 3.98            |
| 3. Growing                                                |                 |
| a. Fertilization                                          | \$10.98         |
| b. Irrigation                                             | 20.52           |
| c. Insect Control                                         | 4.50            |
| d. Chemical Weed Control                                  | 7.75            |
| e. Cultivation                                            | <u>3.56</u>     |
|                                                           | 47.31           |
| 4. Harvesting                                             | 22.18           |
| 5. Misc. Variable Costs                                   | 15.75           |
| 6. Interest on Variable Costs<br>(8% for 6 Months)        | 4.08            |
| 7. Ginning<br>(1600# seed cotton x \$1.25<br>x 1.6 bales) | <u>32.00</u>    |
| Total Variable Costs                                      | \$138.02        |
| <i>Fixed Costs</i>                                        |                 |
| 1. Machinery                                              | 26.12           |
| 2. Water                                                  | 13.00           |
| 3. Taxes                                                  | 3.74            |
| 4. Interest on Land Investment<br>(\$600 @ 6%)            | <u>36.00</u>    |
| Total Fixed Costs                                         | <u>78.86</u>    |
| Total Producing Costs/Acre                                | <u>\$216.88</u> |

Yield: 800 pounds of cotton lint per acre  
1280 pounds of cottonseed

Cost per pound of lint:  $\frac{\$216.88}{800} = \$0.2711$  per pound

With value of cottonseed deducted:  
(1280# @ \$50/ton = \$32.00)

Cost per pound of lint =  $\frac{\$216.88 - \$32.00}{800} = \frac{\$184.88}{800}$   
= \$0.2311 per lb.

TABLE 15

**Estimated Costs for Establishing One Acre of Alfalfa  
in the Lower Rio Grande Region of New Mexico**

|                                                    |                          |
|----------------------------------------------------|--------------------------|
| <i>Variable Costs</i>                              |                          |
| 1. Land Preparation                                | \$ 7.88                  |
| 2. Planting                                        | 9.89                     |
| 3. Growing                                         |                          |
| a. Fertilization                                   | \$ 5.93                  |
| b. Irrigation                                      | 5.90                     |
| c. Insect Control                                  | <sup>1</sup>             |
| d. Chemical Weed Control                           | <u><sup>1</sup></u>      |
|                                                    | 11.83                    |
| 4. Harvesting                                      | <sup>1</sup>             |
| 5. Misc. Variable Costs                            | 7.87 <sup>2</sup>        |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | <u>1.50</u>              |
| Total Variable Costs                               | \$38.97                  |
| <i>Fixed Costs</i>                                 |                          |
| 1. Machinery                                       | 4.40                     |
| 2. Water                                           | 4.00                     |
| 3. Taxes                                           | 1.87 <sup>2</sup>        |
| 4. Interest on Land Investment<br>(\$600 @ 6%)     | <u>18.00<sup>2</sup></u> |
| Total Fixed Costs                                  | <u>28.27</u>             |
| Total Establishing Costs/Acre                      | <u>\$67.24</u>           |

<sup>1</sup> No cost generally incurred.

<sup>2</sup> One-half year, fall planted.

TABLE 16

**Estimated Costs for Producing One Acre of Alfalfa  
in the Lower Rio Grande Region of New Mexico**

|                                                                   |                                           |
|-------------------------------------------------------------------|-------------------------------------------|
| <i>Variable Costs</i>                                             |                                           |
| 1. Land Preparation                                               | \$ 2.00                                   |
| 2. Planting                                                       | <sup>1</sup>                              |
| 3. Growing                                                        |                                           |
| a. Fertilization                                                  | \$12.60                                   |
| b. Irrigation                                                     | 25.60                                     |
| c. Insect Control                                                 | <sup>2</sup>                              |
| d. Chemical Weed Control                                          | <u><sup>2</sup></u>                       |
|                                                                   | 38.20                                     |
| 4. Harvesting                                                     | 33.36                                     |
| 5. Misc. Variable Costs                                           | 15.75                                     |
| 6. Interest on Variable Costs<br>(8% for 6 Months)                | <u>3.57</u>                               |
| Total Variable Costs                                              | \$ 92.88                                  |
| <i>Fixed Costs</i>                                                |                                           |
| 1. Machinery                                                      | 16.15                                     |
| 2. Water                                                          | 18.00                                     |
| 3. Taxes                                                          | 3.74                                      |
| 4. Interest on Land Investment<br>(\$600 @ 6%)                    | 36.00                                     |
| 5. Establishing the Stand<br>(prorated over 3 years)              | <u>22.41<sup>3</sup></u>                  |
| Total Fixed Costs                                                 | <u>96.30</u>                              |
| Total Producing Costs/Acre                                        | <u>\$189.18</u>                           |
| Cost per ton of alfalfa hay (Estimated yield: 6.5 tons per acre): | $\frac{\$189.18}{6.5} = \$29.10$ per ton. |

<sup>1</sup> Included in Table 15 under costs of establishing the stand.

<sup>2</sup> No cost generally incurred.

<sup>3</sup> Annual cost for establishing the alfalfa stand, distributed over a 3 year productive life =  $\frac{\$67.24}{3} = \$22.41$

### Southwestern

This region lies on both sides of the Lower Rio Grande Region. It includes Grant, Luna and Hidalgo Counties in the southwest corner of the State and Otero along the south central border of New Mexico. The costs of production are sufficiently homogeneous in these two areas to consider them as one region.

Table 17 presents the estimated costs for producing an acre of cotton in this region. Variable costs amounted to \$151.37 and the fixed costs were \$66.56, or a total estimated cost of \$217.93 per acre. When credit was given for 1,280 pounds of cottonseed, the total costs were reduced to \$185.93. With an estimated yield of 800 pounds of lint per acre, the cost per pound of lint, after credit was given for the value of the cottonseed, was little over 23 cents a pound, compared to 27 cents a pound without the credit for the cottonseed (bottom of Table 17).

**TABLE 17**  
**Estimated Costs for Producing One Acre of Cotton**  
**in the Southwest Region of New Mexico**

|                                |          |
|--------------------------------|----------|
| <i>Variable Costs</i>          |          |
| 1. Land Preparation            | \$12.37  |
| 2. Planting                    | 4.62     |
| 3. Growing                     |          |
| a. Fertilization               | \$14.98  |
| b. Irrigation                  | 24.25    |
| c. Insect Control              | 10.00    |
| d. Chemical Weed Control       | 6.00     |
| e. Cultivation                 | 2.11     |
|                                | <hr/>    |
|                                | 57.34    |
| 4. Harvesting                  | 24.70    |
| 5. Misc. Variable Costs        | 15.75    |
| 6. Interest on Variable Costs  | 4.59     |
| (8% for 6 Months)              |          |
| 7. Ginning                     |          |
| (1600 # seed cotton x \$1.25   |          |
| x 1.6 bales)                   |          |
|                                | <hr/>    |
|                                | 32.00    |
| Total Variable Costs           | \$151.37 |
| <i>Fixed Costs</i>             |          |
| 1. Machinery                   | 25.74    |
| 2. Water                       | 15.00    |
| 3. Taxes                       | 1.82     |
| 4. Interest on Land Investment | 24.00    |
| (\$400 @ 6%)                   |          |
|                                | <hr/>    |
| Total Fixed Costs              | 66.56    |
| Total Producing Costs/Acre     | \$217.93 |

Yield: 800 pounds of lint per acre.  
1280 pounds of cottonseed  
Cost per pound of lint:  $\frac{\$217.93}{800} = \$0.2724$  per pound

With value of cottonseed deducted:  
(1280# @ \$50/ton = \$32.00)  
Cost per pound of lint =  $\frac{\$217.93 - \$32.00}{800}$   
= \$0.2324 per lb.

**TABLE 18**  
**Estimated Costs for Producing One Acre of Grain Sorghum**  
**in the Southwest Region of New Mexico**

|                                |              |
|--------------------------------|--------------|
| <i>Variable Costs</i>          |              |
| 1. Land Preparation            | \$12.26      |
| 2. Planting                    | 4.89         |
| 3. Growing                     |              |
| a. Fertilization               | \$17.58      |
| b. Irrigation                  | 24.25        |
| c. Insect Control              | <sup>1</sup> |
| d. Chemical Weed Control       | 6.75         |
| e. Cultivation                 | 1.89         |
|                                | <hr/>        |
|                                | 50.47        |
| 4. Harvesting                  | 10.00        |
| 5. Misc. Variable Costs        | 15.75        |
| 6. Interest on Variable Costs  | 3.73         |
| (8% for 6 Months)              |              |
| Total Variable Costs           | \$ 97.10     |
| <i>Fixed Costs</i>             |              |
| 1. Machinery                   | 12.40        |
| 2. Water                       | 15.00        |
| 3. Taxes                       | 1.82         |
| 4. Interest on Land Investment | 24.00        |
| (\$400 @ 6%)                   |              |
|                                | <hr/>        |
| Total Fixed Costs              | 53.22        |
| Total Producing Costs/Acre     | \$150.32     |

Yield: 7000 pounds of grain per acre. Cost per hundred-weight of grain =  $\frac{\$150.32}{70} = \$2.15$  cwt.

<sup>1</sup> No cost generally incurred.

The other major crop grown in this region is grain sorghum. Estimated costs for producing this crop are given in Table 18. The variable costs were estimated to be \$97.10 and the fixed costs were estimated at \$53.22 per acre. With production costs per acre totaling \$150.32, and an estimated yield of 7,000 pounds of sorghum per acre, the average cost per hundredweight of grain was \$2.15.

*Lower Pecos Valley*

Barley, cotton, and alfalfa are the three major crops in this region. For producing barley, the estimated variable costs amounted to \$52.36 while the fixed costs were \$53.28, or a total of \$105.64 per acre (Table 19). It was assumed that 3,500 pounds of grain would be produced with this level of inputs. The estimated cost per hundred pounds was \$3.02.

Table 20 summarizes the estimated costs of producing cotton. Variable costs of \$125.17 plus fixed costs of \$79.33 resulted in total estimated costs of \$204.50 per acre of cotton. It was estimated that 750 pounds of cotton lint and 1,200 pounds of cottonseed would be produced per acre. The yield of cottonseed at \$50.00 a ton was equivalent to \$30.00 per acre. When the total costs were reduced by this amount so as to account for the value of the cottonseed, the cost per acre was reduced to \$174.50. The estimated cost of producing a pound of lint was slightly over 23 cents per pound. Thus, it was evident that the three cotton producing areas in New Mexico had similar costs.

Alfalfa is a major crop in the Lower Pecos Valley region as it is in all other regions except the Southwest region. Costs for establishing a stand of alfalfa are given in Table 21 and the estimated costs for producing an acre of alfalfa after the stand has been established are shown in Table 22. Establishing costs totaled \$66.56 per acre, including variable costs of \$38.98 and fixed costs of \$27.58.

**TABLE 19**  
**Estimated Costs for Producing One Acre of Barley**  
**in the Lower Pecos Valley Region of New Mexico**

|                                |              |
|--------------------------------|--------------|
| <i>Variable Costs</i>          |              |
| 1. Land Preparation            | \$ 7.66      |
| 2. Planting                    | 6.48         |
| 3. Growing                     |              |
| a. Fertilization               | \$ 3.00      |
| b. Irrigation                  | 10.80        |
| c. Insect Control              | <sup>1</sup> |
| d. Chemical Weed Control       | <sup>1</sup> |
|                                | <hr/>        |
|                                | 13.80        |
| 4. Harvesting                  | 6.66         |
| 5. Misc. Variable Costs        | 15.75        |
| 6. Interest on Variable Costs  | 2.01         |
| (8% for 6 Months)              |              |
| Total Variable Costs           | \$ 52.36     |
| <i>Fixed Costs</i>             |              |
| 1. Machinery                   | 8.87         |
| 2. Water                       | 6.38         |
| 3. Taxes                       | 2.03         |
| 4. Interest on Land Investment | 36.00        |
| (\$600 @ 6%)                   |              |
|                                | <hr/>        |
| Total Fixed Costs              | 53.28        |
| Total Producing Costs/Acre     | \$105.64     |

Yield: 3500 pounds of grain per acre. Cost per hundred-weight of grain =  $\frac{\$105.64}{35} = \$3.02$  cwt.

<sup>1</sup> No cost generally incurred.

TABLE 20

**Estimated Costs for Producing One Acre of Cotton  
in the Lower Pecos Valley Region of New Mexico**

|                                                                                                                                                                                   |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <i>Variable Costs</i>                                                                                                                                                             |                 |
| 1. Land Preparation                                                                                                                                                               | \$12.05         |
| 2. Planting                                                                                                                                                                       | 4.48            |
| 3. Growing                                                                                                                                                                        |                 |
| a. Fertilization                                                                                                                                                                  | \$11.77         |
| b. Irrigation                                                                                                                                                                     | 17.95           |
| c. Insect Control                                                                                                                                                                 | 4.50            |
| d. Chemical Weed Control                                                                                                                                                          | <sup>1</sup>    |
| e. Cultivation                                                                                                                                                                    | <u>2.44</u>     |
|                                                                                                                                                                                   | 36.66           |
| 4. Harvesting                                                                                                                                                                     | 22.57           |
| 5. Misc. Variable Costs                                                                                                                                                           | 15.75           |
| 6. Interest on Variable Costs<br>(8% for 6 Months)                                                                                                                                | 3.66            |
| 7. Ginning<br>(1600# seed cotton x \$1.25<br>x 1.5 bales)                                                                                                                         | <u>30.00</u>    |
| Total Variable Costs                                                                                                                                                              | \$125.17        |
| <i>Fixed Costs</i>                                                                                                                                                                |                 |
| 1. Machinery                                                                                                                                                                      | 28.55           |
| 2. Water                                                                                                                                                                          | 12.75           |
| 3. Taxes                                                                                                                                                                          | 2.03            |
| 4. Interest on Land Investment<br>(\$600 @ 6%)                                                                                                                                    | <u>36.00</u>    |
| Total Fixed Costs                                                                                                                                                                 | <u>79.33</u>    |
| Total Producing Costs/Acre                                                                                                                                                        | <u>\$204.50</u> |
| Yield: 750 pounds of cotton lint per acre; 1200 pounds of<br>cottonseed. Cost per pound of lint = $\frac{\$204.50}{750} = \$0.2727/\text{lb.}$                                    |                 |
| With value of cottonseed deducted:<br>(1200# @ \$50/ton = \$30.00) Cost per pound of lint =<br>$\frac{\$204.50 - \$30.00}{750} = \frac{\$174.50}{750} = \$0.2327 \text{ per lb.}$ |                 |

<sup>1</sup> No cost generally incurred.

TABLE 21

**Estimated Costs for Establishing One Acre of Alfalfa  
in the Lower Pecos Valley Region of New Mexico**

|                                                    |                          |
|----------------------------------------------------|--------------------------|
| <i>Variable Costs</i>                              |                          |
| 1. Land Preparation                                | \$ 8.39                  |
| 2. Planting                                        | 9.89                     |
| 3. Growing                                         |                          |
| a. Fertilization                                   | \$ 5.93                  |
| b. Irrigation                                      | 5.40                     |
| c. Insect Control                                  | <sup>1</sup>             |
| d. Chemical Weed Control                           | <u><sup>1</sup></u>      |
|                                                    | 11.33                    |
| 4. Harvesting                                      | <sup>1</sup>             |
| 5. Misc. Variable Costs                            | 7.87 <sup>2</sup>        |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | <u>1.50</u>              |
| Total Variable Costs                               | \$38.98                  |
| <i>Fixed Costs</i>                                 |                          |
| 1. Machinery                                       | 4.31                     |
| 2. Water                                           | 4.25                     |
| 3. Taxes                                           | 1.02 <sup>2</sup>        |
| 4. Interest on Land Investment<br>(\$600 @ 6%)     | <u>18.00<sup>2</sup></u> |
| Total Fixed Costs                                  | <u>27.58</u>             |
| Total Establishing Costs/Acre                      | <u>\$ 66.56</u>          |

<sup>1</sup> No cost generally incurred.<sup>2</sup> One-half year, fall planted.

The variable cost for producing an acre of alfalfa after it had been established was estimated to be \$83.76, and the fixed costs of \$90.90 brought the total

TABLE 22

**Estimated Costs for Producing One Acre of Alfalfa  
in the Lower Pecos Valley Region of New Mexico**

|                                                                                                                                                     |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <i>Variable Costs</i>                                                                                                                               |                          |
| 1. Land Preparation                                                                                                                                 | \$ 2.00                  |
| 2. Planting                                                                                                                                         | <sup>1</sup>             |
| 3. Growing                                                                                                                                          |                          |
| a. Fertilization                                                                                                                                    | \$10.28                  |
| b. Irrigation                                                                                                                                       | 21.60                    |
| c. Insect Control                                                                                                                                   | <sup>2</sup>             |
| d. Chemical Weed Control                                                                                                                            | <u><sup>2</sup></u>      |
|                                                                                                                                                     | 31.88                    |
| 4. Harvesting                                                                                                                                       | 30.91                    |
| 5. Misc. Variable Costs                                                                                                                             | 15.75                    |
| 6. Interest on Variable Costs<br>(8% for 6 Months)                                                                                                  | <u>3.22</u>              |
| Total Variable Costs                                                                                                                                | \$ 83.76                 |
| <i>Fixed Costs</i>                                                                                                                                  |                          |
| 1. Machinery                                                                                                                                        | 13.69                    |
| 2. Water                                                                                                                                            | 17.00                    |
| 3. Taxes                                                                                                                                            | 2.03                     |
| 4. Interest on Land Investment<br>(\$600 @ 6%)                                                                                                      | 36.00                    |
| 5. Establishing the Stand<br>(prorated over 3 years)                                                                                                | <u>22.18<sup>3</sup></u> |
| Total Fixed Costs                                                                                                                                   | <u>90.90</u>             |
| Total Producing Costs/Acre                                                                                                                          | <u>\$174.66</u>          |
| Cost per ton of alfalfa hay (Estimated yield: 6.5 tons per acre):<br>Cost per ton of alfalfa hay = $\frac{\$174.66}{6.5} = \$26.87 \text{ per ton}$ |                          |

<sup>1</sup> Included in Table 21 under costs of establishing the stand.<sup>2</sup> No cost generally incurred.<sup>3</sup> Annual cost for establishing the alfalfa stand (Table 21), distributed over a 3 year productive life =  $\frac{\$66.56}{3} = \$22.18$ 

cost per acre to \$174.66. The estimated life of the stand was three years. The cost of establishing the stand was assessed to each year's production costs by a charge of \$22.18, included in the fixed costs. With a yield estimated at six and one-half tons per acre, the average cost was \$26.87 per ton of alfalfa hay.

### Southeast

The three major crops in this region are cotton, grain sorghum, and alfalfa hay. Table 23 shows the estimated costs for producing an acre of cotton. Variable costs were estimated to be \$112.15 and the fixed costs were \$60.97, giving total estimated costs of \$173.12 per acre. The yield in this area is considerably less than that in the other three areas that produce cotton in this part of New Mexico—about 500 pounds of lint and 800 pounds of cottonseed per acre. The cost of producing a pound of lint without any credit to cottonseed approached 35 cents (see bottom of Table 23). When a credit of \$50.00 a ton was given for the 800 pounds of cottonseed, the total cost was reduced to less than 31 cents a pound. This region has the highest cost of producing cotton of any of the four areas in the State.

Costs of producing grain sorghums included variable costs of \$69.70 per acre and fixed costs of \$42.72 per acre, or a total estimate of \$112.42 (Table 24). Yields in this region run lower than in the High Plains region or the Southwestern region. At an estimated yield of 4,500 pounds per acre, the average cost per hundred pounds of sorghum was \$2.50.

TABLE 23

**Estimated Costs for Producing One Acre of Cotton  
in the Southeast Region of New Mexico**

|                                                        |              |
|--------------------------------------------------------|--------------|
| <i>Variable Costs</i>                                  |              |
| 1. Land Preparation                                    | \$13.85      |
| 2. Planting                                            | 5.34         |
| 3. Growing                                             |              |
| a. Fertilization                                       | \$13.09      |
| b. Irrigation                                          | 10.75        |
| c. Insect Control                                      | <sup>1</sup> |
| d. Chemical Weed Control                               | <sup>1</sup> |
| e. Cultivation                                         | 4.89         |
|                                                        | 28.73        |
| 4. Harvesting                                          | 24.94        |
| 5. Misc. Variable Costs                                | 15.75        |
| 6. Interest on Variable Costs<br>(8% for 6 Months)     | 3.54         |
| 7. Ginning<br>(1600# seed cotton x \$1.25 x<br>1 bale) | 20.00        |
| Total Variable Costs                                   | \$112.15     |
| <i>Fixed Costs</i>                                     |              |
| 1. Machinery                                           | 31.90        |
| 2. Water                                               | 7.00         |
| 3. Taxes                                               | 1.07         |
| 4. Interest on Land Investment<br>(\$350 @ 6%)         | 21.00        |
| Total Fixed Costs                                      | 60.97        |
| Total Producing Costs/Acre                             | \$173.12     |

Yield: 500 pounds of cotton lint per acre; 800 pounds of cottonseed. Cost per pound of lint =  $\frac{\$173.12}{500} = \$0.3462$  per lb.

With value of cottonseed deducted (800# @ \$50/ton = \$20.00):

Cost per pound of lint =  $\frac{\$173.12 - \$20.00}{500} = \$0.3062$  per lb.

<sup>1</sup> No cost generally incurred.

TABLE 24

**Estimated Costs for Producing One Acre of Grain Sorghum  
in the Southeast Region of New Mexico**

|                                                    |              |
|----------------------------------------------------|--------------|
| <i>Variable Costs</i>                              |              |
| 1. Land Preparation                                | \$10.56      |
| 2. Planting                                        | 4.38         |
| 3. Growing                                         |              |
| a. Fertilization                                   | \$12.68      |
| b. Irrigation                                      | 12.10        |
| c. Insect Control                                  | <sup>1</sup> |
| d. Chemical Weed Control                           | <sup>1</sup> |
| e. Cultivation                                     | 4.89         |
|                                                    | 29.67        |
| 4. Harvesting                                      | 6.66         |
| 5. Misc. Variable Costs                            | 15.75        |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 2.68         |
| Total Variable Costs                               | \$ 69.70     |
| <i>Fixed Costs</i>                                 |              |
| 1. Machinery                                       | 13.65        |
| 2. Water                                           | 7.00         |
| 3. Taxes                                           | 1.07         |
| 4. Interest on Land Investment<br>(\$350 @ 6%)     | 21.00        |
| Total Fixed Costs                                  | 42.72        |
| Total Producing Costs/Acre                         | \$112.42     |

Yield: 4500 pounds of grain per acre. Cost per hundred-weight of grain =  $\frac{\$112.42}{45} = \$2.50$  cwt.

<sup>1</sup> No cost generally incurred.

TABLE 25

**Estimated Costs for Establishing One acre of Alfalfa  
in the Southeast Region of New Mexico**

|                                                    |                   |
|----------------------------------------------------|-------------------|
| <i>Variable Costs</i>                              |                   |
| 1. Land Preparation                                | \$ 8.07           |
| 2. Planting                                        | 9.89              |
| 3. Growing                                         |                   |
| a. Fertilization                                   | \$ 5.93           |
| b. Irrigation                                      | 5.85              |
| c. Insect Control                                  | <sup>1</sup>      |
| d. Chemical Weed Control                           | <sup>1</sup>      |
|                                                    | 11.78             |
| 4. Harvesting                                      | <sup>1</sup>      |
| 5. Misc. Variable Costs                            | 7.87 <sup>2</sup> |
| 6. Interest on Variable Costs<br>(8% for 6 Months) | 1.50              |
| Total Variable Costs                               | \$39.11           |
| <i>Fixed Costs</i>                                 |                   |
| 1. Machinery                                       | 4.45              |
| 2. Water                                           | 3.50              |
| 3. Taxes                                           | .54 <sup>2</sup>  |
| 4. Interest on Land Investment<br>(\$350 @ 6%)     | 10.50             |
| Total Fixed Costs                                  | 18.99             |
| Total Establishing Costs/Acre                      | \$58.10           |

<sup>1</sup> No cost generally incurred.

<sup>2</sup> One-half year, fall planted.

TABLE 26

**Estimated Costs for Producing One Acre of Alfalfa  
in the Southeast Region of New Mexico**

|                                                      |                    |
|------------------------------------------------------|--------------------|
| <i>Variable Costs</i>                                |                    |
| 1. Land Preparation                                  | \$ 2.00            |
| 2. Planting                                          | <sup>1</sup>       |
| 3. Growing                                           |                    |
| a. Fertilization                                     | \$10.28            |
| b. Irrigation                                        | 22.05              |
| c. Insect Control                                    | <sup>2</sup>       |
| d. Chemical Weed Control                             | <sup>2</sup>       |
|                                                      | 32.33              |
| 4. Harvesting                                        | 29.23              |
| 5. Misc. Variable Costs                              | 15.75              |
| 6. Interest on Variable Costs<br>(8% for 6 Months)   | 3.17               |
| Total Variable Costs                                 | \$ 82.48           |
| <i>Fixed Costs</i>                                   |                    |
| 1. Machinery                                         | 13.69              |
| 2. Water                                             | 15.75              |
| 3. Taxes                                             | 1.07               |
| 4. Interest on Land Investment<br>(\$350 @ 6%)       | 21.00              |
| 5. Establishing the Stand<br>(prorated over 4 years) | 14.52 <sup>3</sup> |
| Total Fixed Costs                                    | 66.03              |
| Total Producing Costs/Acre                           | \$148.51           |

Cost per ton of alfalfa hay (Estimated yield: 5.5 tons per acre):  $\frac{\$148.51}{5.5} = \$27.00$  per ton

<sup>1</sup> Included in Table 25 under costs of establishing a stand.

<sup>2</sup> No cost generally incurred.

<sup>3</sup> Annual costs for establishing the alfalfa stand (Table 25), distributed over a 4 year productive life =  $\frac{\$58.10}{4} = \$14.52$

Tables 25 and 26 represent estimated costs for producing alfalfa hay. The variable and fixed costs of establishing a stand were relatively low—\$39.11 for the variable costs and almost \$19.00 for fixed costs, or a sum of \$58.10 per acre. The variable costs of producing an acre of alfalfa once the stand has been established, were \$82.48. Fixed costs were estimated at \$66.03

including an annual prorated charge of \$14.52 for establishing the stand. Thus, total production costs were estimated to be \$148.51 an acre. It is estimated yields would average five and one-half tons per acre, about a ton less than in the Lower Pecos Valley region and the Lower Rio Grande Valley region. With this yield, the average cost was \$27.00 per ton of alfalfa hay.



### Procedure for Updating Cost Estimates

Appendix B presents the machinery complement used in this study and the variable and fixed costs per hour for each operation, such as land preparation, irrigation preparation, growing, etc. Appendixes C through Z show the calendar of operations; variable costs for machines, labor, materials and water; and the number of hours required for each of the operations. These have been transferred to the respective tables in the main body of the report. For example, Table 3 includes costs for land preparation, planting, growing, and harvesting costs for producing corn silage, taken from Appendix C.

#### Variable Costs

Variable costs can be brought up-to-date by determining the present costs listed in Appendix B and transferring the variable costs to the respective appendix table. In addition, it will be necessary to obtain new cost data for labor, materials, and water.

Cost of water pumped for irrigation may be the most difficult to determine. The most popular types of energy used to pump irrigation water from underground are electricity and natural gas. If this information is not readily available, reasonable estimated costs can be derived by using the following formulas:

$$\frac{(1.024) (\text{price per KWH}) (\text{lift in ft.})}{\text{The overall efficiency of the pumping plant (See below)}} + \frac{\text{Total cost of repairs}}{(\text{No. of acre-ft. pumped})}$$

The annual fixed costs for an electrically powered well can be determined with the following equation:

$$\frac{\text{Annual fixed costs per acre-foot} = \text{Cost of well}^1}{\text{No. of yrs. life}} \div \text{Acre-feet pumped per year}$$

These estimates should be determined by using present costs. If the costs are for an area where no new wells are being established it is suggested information be obtained from another area where new wells are being developed. The cost of wells powered with natural gas can be determined by using the following formulas:

$$\frac{(.00318) (\text{price of MCF of Gas}) (\text{lift in ft.})}{\text{overall efficiency (See below)}} + \frac{\text{Total costs of repairs, lubrication and attendance for one year}}{\text{No. of acre-feet pumped}}$$

$$\text{Annual fixed cost per acre-foot pumped} = \frac{\text{Cost of well}^1}{\text{No. of yrs. life}} \div \text{Acre-feet pumped per year}$$

As stated above, these estimates should be attained by using present costs.

Energy consumption is a direct function of input over time. Input may be expressed either as horsepower or in units of energy (electrical or chemical). In terms of horsepower the equation is as follows:

$$\text{Input horsepower} = \frac{\text{Water horsepower}}{\text{Overall efficiency}}$$

in which water horsepower is the energy requirement based upon lift and gallons per minute.

In terms of electrical energy the requirement to pump one acre-foot of water is:

$$\text{KWH} = \frac{1.024 (\text{lift in ft.})}{\text{Ee}}$$

where KWH stands for kilowatt hours and Ee stands for overall efficiency of the electric motor and pump combined, expressed as a decimal.

It is suggested that .517 be used as the overall plant efficiency of electrical powered wells if this efficiency has not been determined for the well in the Region. This was the overall plant efficiency of electrical powered wells for farms in a study conducted by the Agricultural Experiment Station, The University of Arizona.<sup>2</sup>

For natural gas powered wells, the quantity of gas (MCF) required to pump one acre-foot of water is:

$$\text{MCF} = \frac{.00318 (\text{lift in ft.})}{\text{Eg}}$$

where MCF stands for thousand cubic feet of natural gas and Eg stands for the overall efficiency of the natural gas engine and pump combined expressed as a decimal.

As is indicated by each equation, fuel consumption is a direct function of overall efficiency of the pumping plant. In a study conducted by the Agricultural Experiment Station, The University of Arizona, the overall plant efficiency of natural gas powered wells averaged 13.2 percent.<sup>3</sup> These efficiencies may be used if the efficiency of the local wells is not known.

After the new costs have been estimated the total variable costs for each of the Appendix tables can be calculated. These costs then are transferred to the appropriate tables located in the main body of this publication.

The "Miscellaneous Variable Costs" need to be re-estimated for each crop, also. This can be done by increasing the present figure in the respective tables by an appropriate index number, such as the index of wholesale prices, or by making new estimates. The interest to be charged for financing the variable costs should be determined by using current interest rates for loans to finance comparable items.

#### Fixed Costs

Items for machinery, water, taxes, and interest on land investment must be reexamined and revised as necessary for the updating of costs. Before proceeding with these revisions, it would be helpful to review the

<sup>1</sup>Includes cost of drilling well, casing, equipment, and testing.

<sup>2</sup>Nelson, Aaron G. and Charles D. Busch, *Cost of Pumping Irrigation Water in Central Arizona*, Agricultural Experiment Station Technical Bulletin 182, The University of Arizona, Tucson, April 1967, pp. 21-22.

<sup>3</sup>Ibid.

explanation of the derivation of these items in the section on "Method of Determining Costs."

Machinery fixed costs per acre can be reestimated by updating the hourly costs in Appendix B on the basis of the proportions of variable and fixed costs indicated there. These revised hourly costs must then be applied to the operating times shown in the respective Appendixes C through Z.

The current cost of gravity water can be obtained from the irrigation district. Water costs for pump irrigation should be reexamined and updated when the variable water costs are recalculated, as explained earlier in this section.

Land costs can be revised by multiplying present

market value of the land by the current interest rate. The price of land may be greater than its agricultural productive value. Quite often agricultural producers will continue operations even though they are not deriving a return from their land commensurate with the present price times current interest rates. Farmers can continue to operate as long as all costs except a return to land are covered, provided they own the land. Nevertheless, land is one of the necessary costs of entering into agriculture. If new land is brought into production, one should include the interest on the cost of developing the land plus the cost of interest on the raw land instead of the interest on the market value of the land.

APPENDIX B  
Equipment Inventory and Costs for Machinery Used in  
Calculating 1972 Irrigated Crop Budgets for New Mexico

| Operation              | Machinery                | Cost per hour |       | Operation      | Machinery                                       | Cost per hour           |       |
|------------------------|--------------------------|---------------|-------|----------------|-------------------------------------------------|-------------------------|-------|
|                        |                          | Variable      | Fixed |                |                                                 | Variable                | Fixed |
| (dollars)              |                          |               |       | (dollars)      |                                                 |                         |       |
| Land Preparation       | 90-110 HP Diesel Tractor | 1.90          | 1.15  | Growing        | 65-75 HP Diesel Tractor                         | 1.50                    | .90   |
|                        | 5 Bottom 16" Plow        | 1.70          | 1.75  |                |                                                 | Dry Fertilizer Spreader | .65   |
|                        | Total                    | 3.60          | 2.90  |                | Total                                           | 2.15                    | 1.60  |
|                        | 90-110 HP Diesel Tractor | 1.90          | 1.15  |                | 12 Row Sprayer (SP)                             | 3.50                    | 4.00  |
|                        | 13.5' Offset Disc        | 1.30          | 1.55  |                | 90-110 HP Diesel Tractor                        | 1.90                    | 1.15  |
|                        | Total                    | 3.20          | 2.70  |                | 4-Row Cultivator with<br>Fertilizer Attachments | 3.50                    | 3.80  |
|                        | 65-75 HP Diesel Tractor  | 1.50          | .90   |                | Total                                           | 5.40                    | 4.95  |
|                        | Border Disc              | .25           | .30   | Hauling        | 1/2-Ton Pickup                                  | 1.90                    | 1.85  |
|                        | Total                    | 1.75          | 1.20  |                | Diesel Grain Truck<br>(10 Wheels)               | 3.20                    | 4.60  |
|                        | 90-110 HP Diesel Tractor | 1.90          | 1.15  | Grain Harvest  | 16' Combine (SP)                                | 4.85                    | 7.50  |
|                        | 12' x 30' Land Plane     | .60           | 1.35  | Silage Harvest | Forage Harvester (SP)                           | 3.80                    | 5.30  |
|                        | Total                    | 2.50          | 2.50  |                | Wagon                                           | 1.10                    | 1.35  |
|                        | 90-110 HP Diesel Tractor | 1.90          | 1.15  |                | Total                                           | 4.90                    | 6.65  |
|                        | 4-Row Lister             | .55           | .65   |                | 90-110 HP Diesel Tractor                        | 1.90                    | 1.15  |
|                        | Total                    | 2.45          | 1.80  |                | PTO Forage Harvester                            | 1.75                    | 2.30  |
|                        | 65-75 HP Diesel Tractor  | 1.50          | .90   |                | Wagon                                           | 1.10                    | 1.35  |
|                        | Spike-Tooth Harrow       | .25           | .25   |                | Total                                           | 4.75                    | 4.80  |
|                        | Total                    | 1.75          | 1.15  | Hay Harvest    | 14' Diesel Swather (SP)                         | 4.95                    | 4.80  |
|                        | 65-75 HP Diesel Tractor  | 1.50          | .90   |                | 65-75 HP Diesel Tractor                         | 1.50                    | .90   |
|                        | 4-Row Stalk Cutter       | .75           | 1.15  |                | Mower                                           | 2.00                    | 1.50  |
|                        | Total                    | 2.25          | 2.05  |                | Side-Delivery Rake                              | .55                     | .60   |
| Irrigation Preparation | 65-75 HP Diesel Tractor  | 1.50          | .90   |                | Total                                           | 4.10                    | 3.00  |
|                        | Row-Bucker               | .30           | .40   |                | Baler (SP)                                      | 3.90                    | 6.45  |
|                        | Total                    | 1.80          | 1.30  |                | 90-110 HP Diesel Tractor                        | 1.90                    | 1.15  |
| Planting               | 65-75 HP Diesel Tractor  | 1.50          | .90   |                | Baler (Aux Engine)                              | 1.80                    | 3.50  |
|                        | 4-Row Precision Planter  | 1.80          | 2.15  |                | Total                                           | 3.70                    | 4.65  |
|                        | Total                    | 3.30          | 3.05  |                | Automatic Bale Wagon (SP)                       | 4.80                    | 6.55  |
|                        | 65-75 HP Diesel Tractor  | 1.50          | .90   |                | 90-110 HP Diesel Tractor                        | 1.90                    | 1.15  |
|                        | 12' Grain Drill          | 1.50          | 2.10  |                | Bale Wagon (PTO)                                | 1.30                    | 2.35  |
|                        | Total                    | 3.00          | 3.00  |                | Total                                           | 3.20                    | 3.50  |
|                        | 65-75 HP Diesel Tractor  | 1.50          | .90   | Cotton Harvest | Cotton Picker                                   | 8.20                    | 13.60 |
|                        | Broadcast Seeder         | .65           | .70   |                | Pick Ground Cotton                              | 4.45                    | 7.70  |
|                        | Total                    | 2.15          | 1.60  |                |                                                 |                         |       |
| Growing                | 65-75 HP Diesel Tractor  | 1.50          | .90   |                |                                                 |                         |       |
|                        | 4-Row Cultivator         | .75           | .65   |                |                                                 |                         |       |
|                        | Total                    | 2.25          | 1.55  |                |                                                 |                         |       |

APPENDIX C  
Estimated Variable Costs for Producing One Acre of Corn Silage—4-Corners Region, New Mexico

| Operation             | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                       | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Plow                  | .40                       | 3.60                      | 1.44                       | .45                         | 2.20                   | .99                      |                               |                   |                             | 2.43                                                |
| Disc                  | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| Float                 | .25                       | 2.50                      | .62                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.28                                                |
| Fertilize             | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 200# (16-20-0)                | \$78/ton          | 7.80                        | 8.78                                                |
| Disc                  | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| List                  | .15                       | 2.45                      | .37                        | .20                         | 2.20                   | .44                      |                               |                   |                             | .81                                                 |
| Pre-irrigate          |                           |                           |                            | .75                         | 1.90                   | 1.42                     | .50 AF Water                  | \$2.55/AF         | 1.28                        | 2.70                                                |
| Chemical Weed Control | .10                       | 3.50                      | .35                        | .15                         | 2.20                   | .33                      |                               |                   | 4.25                        | 4.93                                                |
| Harrow                | .10                       | 1.75                      | .18                        | .15                         | 2.20                   | .33                      |                               |                   |                             | .51                                                 |
| Plant                 | .20                       | 3.00                      | .60                        | .25                         | 2.20                   | .55                      | 15# seed                      | \$28/cwt          | 4.20                        | 5.35                                                |
| Insect Control        | Custom                    |                           |                            |                             |                        |                          |                               |                   | 5.00                        | 5.00                                                |
| Sidedress             | .30                       | 5.40                      | 1.62                       | .35                         | 2.20                   | .77                      | 200# (45-0-0)                 | \$80/ton          | 8.00                        | 10.39                                               |
| Irrigate              |                           |                           |                            | 2.00                        | 1.90                   | 3.80                     | 2 AF Water                    | \$2.55/AF         | 5.10                        | 8.90                                                |
| Harvest               | 1.25                      | 4.90                      | 6.12                       | 1.40                        | 2.20                   | 3.08                     |                               |                   |                             | 9.20                                                |
| Haul                  | 2.00                      | 3.20                      | 6.40                       | 2.25                        | 2.20                   | 4.95                     |                               |                   |                             | 11.35                                               |
| Field Clean up        | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| Total                 |                           |                           | 19.51                      |                             |                        | 20.87                    |                               |                   | 35.63                       | 76.01                                               |

APPENDIX D  
Estimated Variable Costs for Establishing One Acre of Alfalfa—4-Corners Region, New Mexico

| Operation | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|           | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Plow      | .40                       | 3.60                      | 1.44                       | .45                         | 2.20                   | .99                      |                               |                   |                             | 2.43                                                |
| Disc      | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| Float     | .25                       | 2.50                      | .62                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.28                                                |
| Fertilize | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (11-48-0)                | \$99/ton          | 4.95                        | 5.93                                                |
| Disc      | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| Border    | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   |                             | .32                                                 |
| Plant     | .20                       | 3.00                      | .60                        | .25                         | 2.20                   | .55                      | 30# seed                      | \$45/cwt          | 9.00                        | 10.15                                               |
| Irrigate  |                           |                           |                            | 1.50                        | 1.90                   | 2.85                     | 1 AF Water                    | \$2.55/AF         | 2.55                        | 5.40                                                |
| Total     |                           |                           | 4.47                       |                             |                        | 6.92                     |                               |                   | 16.50                       | 27.89                                               |

APPENDIX E  
Estimated Variable Costs for Producing One Acre of Alfalfa—4-Corners Region, New Mexico

| Operation      | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|----------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Fertilize      | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (0-45-0)                 | \$93/ton          | 4.65                        | 5.63                                                |
| Insect Control | Custom                    |                           |                            |                             |                        |                          |                               |                   | 4.50                        | 4.50                                                |
| Irrigate       |                           |                           |                            |                             |                        |                          |                               |                   | 7.65                        | 13.35                                               |
| Swath (3x)     | .75                       | 4.95                      | 3.71                       | 3.00                        | 1.90                   | 5.70                     | 3 AF Water                    | \$2.55/AF         | 6.72                        | 10.60                                               |
| Bale (3x)      | .60                       | 3.90                      | 2.34                       | .70                         | 2.20                   | 1.54                     | 56# wire                      | \$0.12/lb         | 3.26                        | 3.26                                                |
| Roadside (3x)  | .45                       | 4.80                      | 2.16                       | .50                         | 2.20                   | 1.10                     |                               |                   | 2.00                        | 2.00                                                |
| Field Clean up | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   | 23.52                       | 44.92                                               |
| Total          |                           |                           | 8.74                       |                             |                        | 12.66                    |                               |                   |                             |                                                     |

APPENDIX F  
Estimated Variable Costs for Establishing One Acre of Alfalfa—Mountain Region, New Mexico

| Operation | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|           | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Fertilize | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (11-48-0)                | \$99/ton          | 4.95                        | 5.93                                                |
| Plow      | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   | 3.12                        | 3.12                                                |
| Disc (2x) | .40                       | 3.20                      | 1.28                       | .45                         | 2.20                   | .99                      |                               |                   | 2.27                        | 2.27                                                |
| Float     | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   | 1.52                        | 1.52                                                |
| Harrow    | .20                       | 1.75                      | .35                        | .25                         | 2.20                   | .55                      |                               |                   | .90                         | .90                                                 |
| Border    | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   | .32                         | .32                                                 |
| Plant     | .20                       | 3.00                      | .60                        | .25                         | 2.20                   | .55                      | 20# seed                      | \$45/cwt          | 9.00                        | 10.15                                               |
| Irrigate  |                           |                           |                            | 1.50                        | 1.90                   | 2.85                     | 1.5 AF Water                  | \$1.25/AF         | 1.88                        | 4.73                                                |
| Total     |                           |                           | 5.31                       |                             |                        | 7.80                     |                               |                   | 15.83                       | 28.94                                               |

APPENDIX G  
Estimated Variable Costs for Producing One Acre of Alfalfa—Mountain Region, New Mexico

| Operation                | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|--------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                          | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                | (dollars)                     | (dollars)         | (dollars)                   | (dollars)                                           |
| Fertilize                | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 60# (0-45-0)                  | \$93/ton          | 2.79                        | 3.77                                                |
| Irrigate                 |                           |                           |                            | 2.50                        | 1.90                   | 4.75                     | 3 AF Water                    | \$1.25/AF         | 3.75                        | 8.50                                                |
| Mow and Rake             | 1.00                      | 4.10                      | 4.10                       | 1.10                        | 2.20                   | 2.42                     |                               |                   |                             | 6.52                                                |
| Bale (3x)                | .60                       | 3.70                      | 2.22                       | .70                         | 2.20                   | 1.54                     | 30# wire                      | \$0.12/lb         | 3.60                        | 7.36                                                |
| Pick up Bales            | .45                       | 3.20                      | 1.44                       | .50                         | 2.20                   | 1.10                     |                               |                   |                             | 2.54                                                |
| Field and Ditch Clean up | .20                       | 1.75                      | .35                        | 1.00                        | 1.90                   | 1.90                     |                               |                   | 10.14                       | 2.25                                                |
| Total                    |                           |                           | 8.54                       |                             |                        | 12.26                    |                               |                   |                             | 30.94                                               |

APPENDIX H  
Estimated Variable Costs for Producing One Acre of Grain Sorghum—High Plains Region, New Mexico

| Operation                   | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                             | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                | (dollars)                     | (dollars)         | (dollars)                   | (dollars)                                           |
| Plow                        | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Float                       | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize                   | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (11-48-0)                | \$99/ton          | 4.95                        | 5.93                                                |
| Disc                        | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| List                        | .25                       | 2.45                      | .61                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.27                                                |
| Pre-irrigate                |                           |                           |                            | 1.00                        | 1.90                   | 1.90                     | .75 AF Water                  | \$5.50/AF         | 4.12                        | 6.02                                                |
| Plant                       | .20                       | 3.00                      | .60                        | .25                         | 2.20                   | .55                      | 12 lbs seed                   | \$29/cwt          | 3.48                        | 4.63                                                |
| Cultivate                   | .30                       | 2.25                      | .68                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.45                                                |
| Sidress and Cultivate       | .35                       | 5.40                      | 1.89                       | .40                         | 2.20                   | .88                      | 125# NH <sub>3</sub>          | \$80/ton          | 5.00                        | 7.77                                                |
| Irrigation Preparation (2x) | .12                       | 1.80                      | .22                        | .20                         | 1.90                   | .38                      |                               |                   |                             | .60                                                 |
| Irrigate                    |                           |                           |                            | 1.50                        | 1.90                   | 2.85                     | 1.5 AF Water                  | \$5.50/AF         | 8.25                        | 11.10                                               |
| Chemical Weed Control       | .20                       | 3.50                      | .70                        | .25                         | 2.20                   | .55                      |                               |                   | 4.25                        | 5.50                                                |
| Combine                     | .50                       | 4.85                      | 2.42                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.74                                                |
| Haul                        | .50                       | 3.20                      | 1.60                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 2.92                                                |
| Cut Stalks                  | .20                       | 2.25                      | .45                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.00                                                |
| Field Clean up              | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   | 30.05                       | 2.00                                                |
| Total                       |                           |                           | 13.69                      |                             |                        | 17.48                    |                               |                   |                             | 61.22                                               |

APPENDIX I  
 Estimated Variable Costs for Producing One Acre of Wheat—High Plains Region, New Mexico

| Operation            | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|----------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                      | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (dollars)         | (dollars)                   | (dollars)                                           |
| Disc (2x)            | .40                       | 3.20                      | 1.28                       | .45                         | 2.20                   | .99                      |                               |                   |                             | 2.27                                                |
| Float                | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize            | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 150# (11-48-0)                | \$99/ton          | 7.42                        | 8.40                                                |
| Disc                 | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| List                 | .20                       | 2.45                      | .49                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.04                                                |
| Plant                | .20                       | 3.00                      | .60                        | .25                         | 2.20                   | .55                      | 75# seed                      | \$7.00/cwt        | 5.25                        | 6.40                                                |
| Irrigate             |                           |                           |                            | 2.00                        | 1.90                   | 3.80                     | 2 AF Water                    | \$5.50/AF         | 11.00                       | 14.80                                               |
| Fertilize (in Water) |                           |                           |                            |                             |                        |                          | 80# NH <sub>3</sub>           | \$80/ton          | 3.20                        | 3.20                                                |
| Combine              | .50                       | 4.85                      | 2.42                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.74                                                |
| Haul                 | .50                       | 3.20                      | 1.60                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 2.92                                                |
| Field Clean up       | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| Total                |                           |                           | 8.47                       |                             |                        | 12.41                    |                               |                   | 26.87                       | 47.75                                               |

APPENDIX J  
 Estimated Variable Costs for Establishing One Acre of Alfalfa—High Plains Region, New Mexico

| Operation | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|           | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (dollars)         | (dollars)                   | (dollars)                                           |
| Plow      | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc      | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Float     | .25                       | 2.50                      | .75                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.41                                                |
| Fertilize | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 75# (11-48-0)                 | \$99/ton          | 3.71                        | 4.69                                                |
| Disc      | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| Border    | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   |                             | .32                                                 |
| Plant     | .15                       | 3.00                      | .45                        | .20                         | 2.20                   | .44                      | 20# seed                      | \$45/cwt          | 9.00                        | 9.89                                                |
| Irrigate  |                           |                           |                            | 1.00                        | 1.90                   | 1.90                     | 1 AF Water                    | \$5.50/AF         | 5.50                        | 7.40                                                |
| Total     |                           |                           | 4.97                       |                             |                        | 6.30                     |                               |                   | 18.21                       | 29.48                                               |

APPENDIX K  
Estimated Variable Costs for Producing One Acre of Alfalfa—High Plains Region, New Mexico

| Operation      | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|----------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (dollars)         | (dollars)                   | (dollars)                                           |
| Fertilize      | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 150# (0-45-0)                 | \$93/ton          | 6.98                        | 7.96                                                |
| Border         | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   |                             | .32                                                 |
| Irrigate       |                           |                           |                            | 2.50                        | 1.90                   | 4.75                     | 3 AF Water                    | \$5.50/AF         | 16.50                       | 21.25                                               |
| Swath (4x)     | 1.00                      | 4.95                      | 4.95                       | 1.20                        | 2.20                   | 2.64                     |                               |                   |                             | 7.59                                                |
| Bale (4x)      | .80                       | 3.70                      | 2.96                       | .95                         | 2.20                   | 2.09                     | 56# Wire                      | \$0.12/lb         | 6.72                        | 11.77                                               |
| Roadside (4x)  | .60                       | 3.20                      | 1.92                       | .70                         | 2.20                   | 1.54                     |                               |                   |                             | 3.46                                                |
| Field Clean up | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| Total          |                           |                           | 10.46                      |                             |                        | 13.69                    |                               |                   | 30.20                       | 54.35                                               |

APPENDIX L  
Estimated Variable Costs for Establishing One Acre of Alfalfa—Middle Rio Grande Region, New Mexico

| Operation | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|           | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (dollars)         | (dollars)                   | (dollars)                                           |
| Plow      | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc      | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| Floater   | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (11-48-0)                | \$99/ton          | 4.95                        | 5.93                                                |
| Disc      | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.19                                                |
| Border    | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   |                             | .32                                                 |
| Plant     | .20                       | 3.00                      | .60                        | .25                         | 2.20                   | .55                      | 20# seed                      | \$45/cwt          | 9.00                        | 10.15                                               |
| Irrigate  |                           |                           |                            | 1.50                        | 1.90                   | 2.85                     | 1 AF Water                    | \$6.00/AF         | 6.00                        | 8.85                                                |
| Total     |                           |                           | 4.96                       |                             |                        | 7.36                     |                               |                   | 19.95                       | 32.27                                               |

APPENDIX M  
Estimated Variable Costs for Producing One Acre of Alfalfa—Middle Rio Grande Region, New Mexico

| Operation      | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|----------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Fertilize      | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 200# (0-45-0)                 | \$93/ton          | 9.30                        | 10.28                                               |
| Irrigate       |                           |                           |                            | 4.00                        | 1.90                   | 7.60                     | 4 AF Water                    | \$6.00/AF         | 24.00                       | 31.60                                               |
| Swath (4x)     | 1.00                      | 4.95                      | 4.95                       | 1.10                        | 2.20                   | 2.42                     |                               |                   | 7.56                        | 7.37                                                |
| Bale (4x)      | 1.00                      | 3.70                      | 3.70                       | 1.10                        | 2.20                   | 2.42                     | 63# Wire                      | \$0.12/lb         | 7.56                        | 13.68                                               |
| Roadside (4x)  | .80                       | 3.20                      | 2.56                       | .90                         | 2.20                   | 1.98                     |                               |                   |                             | 4.54                                                |
| Field Clean up | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   | 40.86                       | 2.00                                                |
| Total          |                           |                           | 11.74                      |                             |                        | 16.87                    |                               |                   |                             | 69.47                                               |

APPENDIX N  
Estimated Variable Costs for Producing One Acre of Cotton—Lower Rio Grande Region, New Mexico

| Operation                   | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                             | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Plow                        | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Float                       | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize                   | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 150# (16-20-0)                | \$80/ton          | 6.00                        | 6.98                                                |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| List                        | .20                       | 2.45                      | .49                        | .25                         | 2.20                   | .55                      |                               |                   |                             | 1.04                                                |
| Pre-irrigate                |                           |                           |                            | 1.00                        | 1.90                   | 1.90                     | .75 AF Water                  | \$4.00/AF         | 3.00                        | 4.90                                                |
| Chemical Weed Control       | Custom                    |                           |                            |                             |                        |                          |                               |                   | 7.75                        | 7.75                                                |
| Harrow                      | .20                       | 1.75                      | .35                        | .25                         | 2.20                   | .55                      |                               |                   |                             | .90                                                 |
| Plant                       | .25                       | 3.30                      | .82                        | .30                         | 2.20                   | .66                      | 10# seed                      | \$0.25/lb         | 2.50                        | 3.98                                                |
| Cultivate (3x)              | .75                       | 2.25                      | 1.69                       | .85                         | 2.20                   | 1.87                     |                               |                   |                             | 3.56                                                |
| Irrigation Preparation (3x) | .18                       | 1.80                      | .32                        | .25                         | 2.20                   | .55                      |                               |                   |                             | .87                                                 |
| Irrigate                    |                           |                           |                            | 2.50                        | 1.90                   | 4.75                     | 2.5 AF Water                  | \$4.00/AF         | 10.00                       | 14.75                                               |
| Fertilize (in Water)        |                           |                           |                            |                             |                        |                          | 100# NH <sub>3</sub>          | \$80/ton          | 4.00                        | 4.00                                                |
| Insect Control              | Custom                    |                           |                            |                             |                        |                          |                               |                   | 4.50                        | 4.50                                                |
| Pick                        | 1.00                      | 8.20                      | 8.20                       | 1.15                        | 2.20                   | 2.53                     |                               |                   |                             | 10.73                                               |
| Haul                        | 1.00                      | 2.40                      | 2.40                       | 1.15                        | 2.20                   | 2.53                     |                               |                   |                             | 4.93                                                |
| Scrap                       | .50                       | 4.45                      | 2.22                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.54                                                |
| Haul                        | .60                       | 2.40                      | 1.44                       | .70                         | 2.20                   | 1.54                     |                               |                   |                             | 2.98                                                |
| Cut Stalks                  | .25                       | 2.25                      | .56                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.22                                                |
| Field Clean up              | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   | 37.75                       | 2.00                                                |
| Total                       |                           |                           | 23.17                      |                             |                        | 25.27                    |                               |                   |                             | 86.19                                               |



APPENDIX O  
Estimated Variable Costs for Establishing One Acre of Alfalfa—Lower Rio Grande Region, New Mexico

| Operation | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|           | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (8)               | (dollars)                   | (dollars)                                           |
| Plow      | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc      | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Float     | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (11-48-0)                | \$99/ton          | 4.95                        | 5.93                                                |
| Disc      | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Border    | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   |                             | .32                                                 |
| Plant     | .15                       | 3.00                      | .45                        | .20                         | 2.20                   | .44                      | 20# seed                      | \$45/cwt          | 9.00                        | 9.89                                                |
| Irrigate  |                           |                           |                            | 1.00                        | 1.90                   | 1.90                     | 1 AF Water                    | \$4.00/AF         | 4.00                        | 5.90                                                |
| Total     |                           |                           | 5.13                       |                             |                        | 6.52                     |                               |                   | 17.95                       | 29.60                                               |

APPENDIX P  
Estimated Variable Costs for Producing One Acre of Alfalfa—Lower Rio Grande Region, New Mexico

| Operation      | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|----------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (8)               | (dollars)                   | (dollars)                                           |
| Fertilize      | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 250# (0-45-0)                 | \$93/ton          | 11.62                       | 12.60                                               |
| Irrigate       |                           |                           |                            | 4.00                        | 1.90                   | 7.60                     | 4.5 AF Water                  | \$4.00/AF         | 18.00                       | 25.60                                               |
| Swath (5x)     | 1.25                      | 4.95                      | 6.19                       | 1.40                        | 2.20                   | 3.08                     |                               |                   |                             | 9.27                                                |
| Bale (5x)      | 1.25                      | 3.70                      | 4.62                       | 1.40                        | 2.20                   | 3.08                     | 91# Wire                      | \$0.12/lb         | 10.92                       | 18.62                                               |
| Roadside (5x)  | .75                       | 4.80                      | 3.60                       | .85                         | 2.20                   | 1.87                     |                               |                   |                             | 5.47                                                |
| Field Clean up | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| Total          |                           |                           | 14.94                      |                             |                        | 18.08                    |                               |                   | 40.54                       | 73.56                                               |

APPENDIX Q  
Estimated Variable Costs for Producing One Acre of Cotton—Southwest Region, New Mexico

| Operation                   | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7)      | Cost Per Unit (8)     | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|------------------------------------|-----------------------|-----------------------------|-----------------------------------------------------|
|                             | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                | (dollars)                          | (dollars)             | (dollars)                   | (dollars)                                           |
| Plow                        | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                                    |                       |                             | 3.12                                                |
| Disc                        | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                                    |                       |                             | 1.19                                                |
| Float                       | .25                       | 2.50                      | .62                        | .30                         | 2.20                   | .66                      |                                    |                       |                             | 1.28                                                |
| Fertilize                   | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 200# (16-20-0)                     | \$80/ton              | 8.00                        | 8.98                                                |
| Disc                        | .20                       | 3.20                      | .64                        | .25                         | 2.20                   | .55                      |                                    |                       |                             | 1.19                                                |
| List                        | .25                       | 2.45                      | .61                        | .30                         | 2.20                   | .66                      |                                    |                       |                             | 1.27                                                |
| Pre-irrigate                |                           |                           |                            | 1.00                        | 1.90                   | 1.90                     | 1 AF Water                         | \$6.00/AF             | 6.00                        | 7.90                                                |
| Chemical Weed Control       | Custom                    |                           |                            |                             |                        |                          |                                    |                       | 6.00                        | 6.00                                                |
| Harrow                      | .25                       | 1.75                      | .44                        | .30                         | 2.20                   | .66                      |                                    |                       |                             | 1.10                                                |
| Plant                       | .30                       | 3.30                      | .99                        | .35                         | 2.20                   | .77                      | 15# seed                           | \$25/cwt              | 2.86                        | 4.62                                                |
| Cultivate (2x)              | .45                       | 2.25                      | 1.01                       | .50                         | 2.20                   | 1.10                     |                                    |                       |                             | 2.11                                                |
| Irrigation Preparation (2x) | .12                       | 1.80                      | .22                        | .15                         | 2.20                   | .33                      |                                    |                       |                             | .55                                                 |
| Irrigate (4x)               |                           |                           |                            | 2.00                        | 1.90                   | 3.80                     | 2 AF Water<br>150# NH <sub>3</sub> | \$6.00/AF<br>\$80/ton | 12.00<br>6.00               | 15.80<br>6.00                                       |
| Fertilize (in Water)        | Custom                    |                           |                            |                             |                        |                          |                                    |                       | 10.00                       | 10.00                                               |
| Insect Control (2x)         | 1.00                      | 8.20                      | 8.20                       | 1.15                        | 2.70                   | 3.10                     |                                    |                       |                             | 11.30                                               |
| Pick                        | 1.50                      | 2.40                      | 3.60                       | 1.70                        | 2.20                   | 3.74                     |                                    |                       |                             | 7.34                                                |
| Haul                        | .50                       | 4.45                      | 2.22                       | .60                         | 2.20                   | 1.32                     |                                    |                       |                             | 3.54                                                |
| Scrap                       | .50                       | 2.40                      | 1.20                       | .60                         | 2.20                   | 1.32                     |                                    |                       |                             | 2.52                                                |
| Haul                        | .25                       | 2.25                      | .56                        | .30                         | 2.20                   | .66                      |                                    |                       |                             | 1.22                                                |
| Cut Stalks                  | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                                    |                       |                             | 2.00                                                |
| Field Clean up              |                           |                           | 23.28                      |                             |                        | 24.89                    |                                    |                       | 50.86                       | 99.03                                               |
| Total                       |                           |                           |                            |                             |                        |                          |                                    |                       |                             |                                                     |

APPENDIX R  
**Estimated Variable Costs for Producing One Acre of Grain Sorghum—Southwest Region, New Mexico**

| Operation                   | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                             | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                | (dollars)                     | (dollars)         | (dollars)                   | (dollars)                                           |
| Plow                        | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc (2x)                   | .40                       | 3.20                      | 1.28                       | .45                         | 2.20                   | .99                      |                               |                   |                             | 2.27                                                |
| Float                       | .25                       | 2.50                      | 8.62                       | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.28                                                |
| List                        | .25                       | 2.45                      | .61                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.27                                                |
| Pre-irrigate                |                           |                           |                            | 1.00                        | 1.90                   | 1.90                     | 1 AF Water                    | \$6.00/AF         | 6.00                        | 7.90                                                |
| Fertilize                   | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 200# (45-0-0)                 | \$83/ton          | 8.30                        | 9.28                                                |
| Chemical Weed Control       | Custom                    |                           |                            |                             |                        |                          |                               |                   | 6.75                        | 6.75                                                |
| Harrow                      | .25                       | 1.75                      | .44                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.10                                                |
| Plant                       | .25                       | 3.00                      | .75                        | .30                         | 2.20                   | .66                      | 12# seed                      | \$29/cwt          | 3.48                        | 4.89                                                |
| Cultivate (2x)              | .40                       | 2.25                      | .90                        | .45                         | 2.20                   | .99                      |                               |                   |                             | 1.89                                                |
| Fertilize (in Water)        |                           |                           |                            |                             |                        |                          | 200# NH <sub>3</sub>          | \$83/ton          | 8.30                        | 8.30                                                |
| Irrigation Preparation (2x) | .12                       | 1.80                      | .22                        | .15                         | 2.20                   | .33                      |                               |                   |                             | .55                                                 |
| Irrigate                    |                           |                           |                            | 2.00                        | 1.90                   | 3.80                     | 2 AF Water                    | \$6.00/AF         | 12.00                       | 15.80                                               |
| Combine                     | .75                       | 4.85                      | 3.64                       | .90                         | 2.20                   | 1.98                     |                               |                   |                             | 5.62                                                |
| Haul                        | .75                       | 3.20                      | 2.40                       | .90                         | 2.20                   | 1.98                     |                               |                   |                             | 4.38                                                |
| Cut Stalks                  | .25                       | 2.25                      | .56                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.22                                                |
| Field Clean up              | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| <b>Total</b>                |                           |                           | <b>13.75</b>               |                             |                        | <b>19.04</b>             |                               |                   | <b>44.83</b>                | <b>77.62</b>                                        |

APPENDIX S  
**Estimated Variable Costs for Producing One Acre of Barley—Lower Pecos Valley Region, New Mexico**

| Operation            | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|----------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                      | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                | (dollars)                     | (dollars)         | (dollars)                   | (dollars)                                           |
| Disc (2x)            | .50                       | 3.20                      | 1.60                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 2.92                                                |
| Float                | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Border               | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   |                             | .32                                                 |
| Harrow               | .20                       | 1.75                      | .35                        | .25                         | 2.20                   | .55                      |                               |                   |                             | .90                                                 |
| Plant                | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# seed                     | \$5.50/cwt        | 5.50                        | 6.48                                                |
| Irrigate (3x)        |                           |                           |                            | 2.00                        | 1.90                   | 3.80                     | 2 AF Water                    | \$3.50/AF         | 7.00                        | 10.80                                               |
| Fertilize (in Water) |                           |                           |                            |                             |                        |                          | 75# NH <sub>3</sub>           | \$80/ton          | 3.00                        | 3.00                                                |
| Combine              | .50                       | 4.85                      | 2.42                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.74                                                |
| Haul                 | .50                       | 3.20                      | 1.60                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 2.92                                                |
| Field Clean up       | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| <b>Total</b>         |                           |                           | <b>7.35</b>                |                             |                        | <b>11.75</b>             |                               |                   | <b>15.50</b>                | <b>34.60</b>                                        |

APPENDIX T  
Estimated Variable Costs for Producing One Acre of Cotton—Lower Pecos Valley Region, New Mexico

| Operation                   | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                             | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Plow                        | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Float                       | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize                   | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 150# (16-20-0)                | \$80/ton          | 6.00                        | 6.98                                                |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| List                        | .25                       | 2.45                      | .61                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.27                                                |
| Plant                       | .25                       | 3.30                      | .82                        | .30                         | 2.20                   | .66                      | 12# seed                      | \$0.25/lb         | 3.00                        | 4.48                                                |
| Cultivate (2x)              | .50                       | 2.25                      | 1.12                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 2.44                                                |
| Sidress                     | .30                       | 5.40                      | 1.62                       | .35                         | 2.20                   | .77                      | 60# NH <sub>3</sub>           | \$80/ton          | 2.40                        | 4.79                                                |
| Irrigation Preparation (3x) | .18                       | 1.80                      | .32                        | .25                         | 1.90                   | .48                      |                               |                   |                             | .80                                                 |
| Irrigate                    |                           |                           |                            | 3.50                        | 1.90                   | 6.65                     | 3 AF Water                    | \$3.50/AF         | 10.50                       | 17.15                                               |
| Insect Control              |                           | Custom                    |                            |                             |                        |                          |                               |                   | 4.50                        | 4.50                                                |
| Pick                        | 1.00                      | 8.20                      | 8.20                       | 1.20                        | 2.20                   | 2.64                     |                               |                   |                             | 10.84                                               |
| Haul                        | .90                       | 2.40                      | 2.16                       | 1.00                        | 2.20                   | 2.20                     |                               |                   |                             | 4.36                                                |
| Pick                        | .50                       | 8.20                      | 4.10                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 5.42                                                |
| Haul                        | .40                       | 2.40                      | .96                        | .45                         | 2.20                   | .99                      |                               |                   |                             | 1.95                                                |
| Cut Stalks                  | .25                       | 2.25                      | .56                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.22                                                |
| Field Clean up              | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| Total                       |                           |                           | 25.15                      |                             |                        | 24.21                    |                               |                   | 26.40                       | 75.76                                               |

APPENDIX U  
Estimated Variable Costs for Establishing One Acre of Alfalfa—Lower Pecos Valley Region, New Mexico

| Operation | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|           | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Plow      | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc      | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Float     | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (11-48-0)                | \$99/ton          | 4.95                        | 5.93                                                |
| Disc      | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Border    | .06                       | 1.75                      | .10                        | .10                         | 2.20                   | .22                      |                               |                   |                             | .32                                                 |
| Harrow    | .10                       | 1.75                      | .18                        | .15                         | 2.20                   | .33                      |                               |                   |                             | .51                                                 |
| Plant     | .15                       | 3.00                      | .45                        | .20                         | 2.20                   | .44                      | 20# seed                      | \$45/cwt          | 9.00                        | 9.89                                                |
| Irrigate  |                           |                           |                            | 1.00                        | 1.90                   | 1.90                     | 1 AF Water                    | \$3.50/AF         | 3.50                        | 5.40                                                |
| Total     |                           |                           | 5.31                       |                             |                        | 6.85                     |                               |                   | 17.45                       | 29.61                                               |

APPENDIX V  
Estimated Variable Costs for Producing One Acre of Alfalfa—Lower Pecos Valley Region, New Mexico

| Operation      | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|----------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Fertilize      | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 200# (0-45-0)                 | \$93/ton          | 9.30                        | 10.28                                               |
| Irrigate       |                           |                           |                            | 4.00                        | 1.90                   | 7.60                     | 4 AF Water                    | \$3.50/AF         | 14.00                       | 21.60                                               |
| Swath (5x)     | 1.25                      | 4.95                      | 6.19                       | 1.45                        | 2.20                   | 3.19                     |                               |                   |                             | 9.38                                                |
| Bale (5x)      | 1.00                      | 3.70                      | 3.70                       | 1.20                        | 2.20                   | 2.64                     | 91# wire                      | \$0.12/lb         | 10.92                       | 17.26                                               |
| Roadside (5x)  | .75                       | 3.20                      | 2.40                       | .85                         | 2.20                   | 1.87                     |                               |                   |                             | 4.27                                                |
| Field Clean up | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| <b>Total</b>   |                           |                           | <b>12.82</b>               |                             |                        | <b>17.75</b>             |                               |                   | <b>34.22</b>                | <b>64.79</b>                                        |

APPENDIX W  
Estimated Variable Costs for Producing One Acre of Cotton—Southeast Region, New Mexico

| Operation                   | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                             | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               |                   | (dollars)                   | (dollars)                                           |
| Plow                        | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Level                       | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize                   | .20                       | 2.15                      | .43                        | .30                         | 2.20                   | .66                      | 300# (16-20-0)                | \$80/ton          | 12.00                       | 13.09                                               |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Harrow                      | .20                       | 1.75                      | .35                        | .25                         | 2.20                   | .55                      |                               |                   |                             | .90                                                 |
| List                        | .25                       | 2.45                      | .61                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.27                                                |
| Plant                       | .25                       | 3.30                      | .82                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 5.34                                                |
| Harrow                      | .20                       | 1.75                      | .35                        | .25                         | 2.20                   | .55                      | 15# seed                      | \$0.25/lb         | 3.75                        | .90                                                 |
| Cultivate (4x)              | 1.00                      | 2.25                      | 2.25                       | 1.20                        | 2.20                   | 2.64                     |                               |                   |                             | 4.89                                                |
| Irrigation Preparation (4x) | .24                       | 1.80                      | .43                        | .30                         | 1.90                   | .57                      | 2.5 AF Water                  | \$2.00/AF         | 5.00                        | 1.00                                                |
| Irrigate                    |                           |                           |                            | 2.50                        | 1.90                   | 4.75                     |                               |                   |                             | 9.75                                                |
| Pick                        | 1.10                      | 8.20                      | 9.02                       | 1.30                        | 2.20                   | 2.86                     |                               |                   |                             | 11.88                                               |
| Haul                        | 1.50                      | 2.40                      | 3.60                       | 1.70                        | 2.20                   | 3.74                     |                               |                   |                             | 7.34                                                |
| Scrap                       | .50                       | 4.45                      | 2.22                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.54                                                |
| Haul                        | .45                       | 2.40                      | 1.08                       | .50                         | 2.20                   | 1.10                     |                               |                   |                             | 2.18                                                |
| Cut Stalks                  | .25                       | 2.25                      | .56                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.22                                                |
| Field Clean up              | .06                       | 1.75                      | .10                        | 1.00                        | 1.90                   | 1.90                     |                               |                   |                             | 2.00                                                |
| <b>Total</b>                |                           |                           | <b>25.97</b>               |                             |                        | <b>26.14</b>             |                               |                   | <b>20.75</b>                | <b>72.86</b>                                        |

APPENDIX X  
Estimated Variable Costs for Producing One Acre of Grain Sorghum—Southeast Region, New Mexico

| Operation                   | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|                             | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (dollars)         | (dollars)                   | (dollars)                                           |
| Plow                        | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Level                       | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize                   | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 90# N 40#P                    | \$ .09/lb         | 11.70                       | 12.68                                               |
| Disc                        | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Border                      | .10                       | 1.75                      | .18                        | .15                         | 2.20                   | .33                      |                               |                   |                             | .51                                                 |
| List                        | .25                       | 2.45                      | .61                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.27                                                |
| Plant                       | .25                       | 3.30                      | .82                        | .30                         | 2.20                   | .66                      | 10# seed                      | \$29/cwt          | 2.90                        | 4.38                                                |
| Cultivate (3x)              | 1.00                      | 2.25                      | 2.25                       | 1.20                        | 2.20                   | 2.64                     |                               |                   |                             | 4.89                                                |
| Irrigation Preparation (3x) | .18                       | 1.80                      | .32                        | .25                         | 1.90                   | .48                      |                               |                   |                             | .80                                                 |
| Irrigate                    |                           |                           |                            | 2.00                        | 1.90                   | 3.80                     | 2.5 AF Water                  | \$3.00/AF         | 7.50                        | 11.30                                               |
| Combine                     | .50                       | 4.85                      | 2.42                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.74                                                |
| Haul                        | .50                       | 3.20                      | 1.60                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 2.92                                                |
| Cut Stalks                  | .25                       | 2.25                      | .56                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.22                                                |
| Total                       |                           |                           | 13.34                      |                             |                        | 15.83                    |                               |                   | 22.10                       | 51.27                                               |

APPENDIX Y  
Estimated Variable Costs for Establishing One Acre of Alfalfa—Southeast Region, New Mexico

| Operation | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) | Hours of Labor Required (4) | Wage Rate Per Hour (5) | Total Labor Cost (4 x 5) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) |
|-----------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|-----------------------------------------------------|
|           | (hours)                   | (dollars)                 | (dollars)                  | (hours)                     | (dollars)              | (dollars)                |                               | (dollars)         | (dollars)                   | (dollars)                                           |
| Plow      | .50                       | 3.60                      | 1.80                       | .60                         | 2.20                   | 1.32                     |                               |                   |                             | 3.12                                                |
| Disc      | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Float     | .30                       | 2.50                      | .75                        | .35                         | 2.20                   | .77                      |                               |                   |                             | 1.52                                                |
| Fertilize | .20                       | 2.15                      | .43                        | .25                         | 2.20                   | .55                      | 100# (11-48-0)                | \$99/ton          | 4.95                        | 5.93                                                |
| Disc      | .25                       | 3.20                      | .80                        | .30                         | 2.20                   | .66                      |                               |                   |                             | 1.46                                                |
| Border    | .10                       | 1.75                      | .18                        | .15                         | 2.20                   | .33                      |                               |                   |                             | .51                                                 |
| Plant     | .15                       | 3.00                      | .45                        | .60                         | 2.20                   | .44                      | 20# seed                      | \$45/cwt          | 9.00                        | 9.89                                                |
| Irrigate  |                           |                           |                            | 1.50                        | 1.90                   | 2.85                     | 1 AF Water                    | \$3.00/AF         | 3.00                        | 5.85                                                |
| Total     |                           |                           | 5.21                       |                             |                        | 7.58                     |                               |                   | 16.95                       | 29.74                                               |

APPENDIX Z  
Estimated Variable Costs for Producing One Acre of Alfalfa—Southeast Region, New Mexico

| Operation      | Hours of Machine Time (1) | Machine Cost Per Hour (2) | Total Machine Cost (1 x 2) (dollars) | Hours of Labor Required (4) | Wage Rate Per Hour (5) (dollars) | Total Labor Cost (4 x 5) (dollars) | Amount & Type of Material (7) | Cost Per Unit (8) | Total Material Cost (7 x 8) (dollars) | Sub-Total Variable Cost (1 x 2) + (4 x 5) + (7 x 8) (dollars) |
|----------------|---------------------------|---------------------------|--------------------------------------|-----------------------------|----------------------------------|------------------------------------|-------------------------------|-------------------|---------------------------------------|---------------------------------------------------------------|
| Fertilize      | .20                       | 2.15                      | .43                                  | .25                         | 2.20                             | .55                                | 200# (0-45-0)                 | \$93/ton          | 9.30                                  | 10.28                                                         |
| Irrigate       |                           |                           |                                      | 4.50                        | 1.90                             | 8.55                               | 4.5 AF Water                  | \$3.00/AF         | 13.50                                 | 22.05                                                         |
| Swath (5x)     | 1.25                      | 4.95                      | 6.19                                 | 1.45                        | 2.20                             | 3.19                               |                               |                   | 9.24                                  | 9.38                                                          |
| Bale (5x)      | 1.00                      | 3.70                      | 3.70                                 | 1.20                        | 2.20                             | 2.64                               | 77# wire                      | \$0.12/lb         | 9.24                                  | 15.58                                                         |
| Roadside (5x)  | .75                       | 3.20                      | 2.40                                 | .85                         | 2.20                             | 1.87                               |                               |                   |                                       | 4.27                                                          |
| Field Clean up | .06                       | 1.75                      | .10                                  | 1.00                        | 1.90                             | 1.90                               |                               |                   |                                       | 2.00                                                          |
| Total          |                           |                           | 12.82                                |                             |                                  | 18.70                              |                               |                   | 32.04                                 | 63.56                                                         |