

# ARIZONA FARMING IS BIG BUSINESS

By Hilliard Jackson

*One of the most important policy issues in agriculture today is the implication of the rapid increase in the size of agribusinesses and farm units requiring the use of large amounts of capital, labor and professional management.*

Although some of this change is related to increased size of the family farm, the impressive change has been in two other directions: (1) establishment of large, vertically integrated agricultural businesses (such as large lettuce or poultry operations) which produce, process and market a significant percentage of the national output, with the farmer being a wage employee or on contract, and (2) the growth of large super-farms which operate at one level of the marketing system but integrate horizontally by eliminating several small farms; for example, the large feedlots in Arizona, with capacities of 10,000 to 30,000 head of cattle. (See the ac-

companying drawing for a visual illustration of integration.) Some have passed the stage of producing and marketing a single product and are full-fledged multiproduct firms with national distribution and are integrated both vertically and horizontally.

## Large Farms in Arizona

The shift to commercial agriculture and agribusiness in Arizona is more pronounced than in any other state in the nation. Of the total of 6,477 farms in Arizona in 1964, each of the 1,301 largest had sales of \$60,000 or more. Their sales totaled \$415 million in 1964, or 89 percent of all farm sales in the state.

Average sales per farm of this size group was \$319,000 and several had sales of over a million dollars. These are big farms by any standard, and many have integrated with supply firms (such as feed mills, hatcheries and fertilizer distributors) and marketing firms (such as processors and distributors) which serve further to enhance their size and bargaining ability (Table 1).

The remainder of the farms in the state, numbering 2,260 farms with 10 percent of total farm sales, can be grouped into family-sized commercial farms with sales of from \$5,000 to \$60,000. Then there is the non-commercial group of farms, largely part-time and retirement units, numbering 2,912, which had less than one percent of total sales.

The needs of the three types of farm firms outlined above for education, government assistance and technical knowledge are quite different. For this reason it is important to make the distinction and describe the three types of farming in the state.

## Arizona and Other States

There were 74,000 farms in the United States with sales above \$60,000. Arizona had 1.7 percent of the total. However, in terms of percent of all farms with sales of \$60,000 and up, Arizona showed 20 percent compared with only 2.4 percent in the United States. Arizona had a higher proportion of large commercial farms to all farms than any western state. California with 14.4 percent and Nevada with 10 percent were next highest. All other western states had five percent or less of total farms with sales of \$60,000 or more (Table 2).

Average sales per farm in Arizona in 1964 were \$72.3 thousand, compared to only \$9.6 thousand for the

(Continued on Next Page)

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(Continued from Previous Page)

United States as a whole, and \$20.2 thousand for all western states combined (Table 2). Sales per farm in all western states averaged from \$10.0 to \$16.8 thousand per farm except Colorado, \$20.0 thousand; Nevada, \$23.7 thousand; California, \$43.3 thousand; and Arizona \$72.3 thousand (Table 2).

In terms of percentage of farms with sales above \$60,000, Arizona ranked fourth in the western states behind California with 55.5 percent of such large commercial farms; Washington, 8.6 percent; Colorado, 7.2 percent; and Arizona and Oregon, 6.2 percent (Table 2).

#### What They're Like

Large commercial farms in Arizona require huge amounts of capital, labor and management inputs. A tabulation of characteristics of Arizona farms reveals the nature of these needs. There were 14,333 tractors and 17,174 motor trucks on farms. A further evidence of the large size is that 2,551 farms had two tractors or more. The average farm or ranch contained over 6,000 acres, with land and buildings valued at \$330,000 per farm.

Total cash expenditures amounted to \$254 million, with the larger amounts spent for feed, feeder cattle, gas and oil, fertilizer and labor.

Workers hired included 15,979 regular workers used for 150 days or more, plus seasonal help. The total wage bill was \$58 million. Assuming that these were hired largely by the 1,301 large commercial farms, the number hired per farm would be 12.

#### Most in 4 Counties

All except 239 of the large commercial farms in Arizona are located in the counties of Maricopa, Pinal, Yuma and Pima. Maricopa led all counties with 610, or almost half of the large farms. Average sales per farm in the four counties was \$115 thousand.

From the foregoing, it may be estimated that the typical large commercial farm in Arizona had cash expenditures of nearly \$200 thousand, sales of \$319 thousand, used hired managerial or supervisory services and employed 10 to 12 workers. This is big business and requires professional services of financing, managing, accounting, production and marketing.

Of the large commercial farms in Arizona, 425 were estimated to be cotton farms; 220 cattle ranches; 40 feedlots; 100 cash grain farms; 100 vegetable farms; 120 fruit; 100 poultry; 140

**Table 1. Number of Farms, Average Sales per Farm, and Total Sales by Size Group, Arizona, 1964.**

<i>Value of Products Sold</i>	<i>Number of Farms</i>	<i>Estimated Average Sales per Farm<sup>1</sup></i>	<i>Total Sales</i>	<i>Percent of Total Sales</i>
(Dollars)		(Dollars)	(Million Dollars)	
Under 2,500	2,374	530	1,258	0.27
2,500 - 4,999	538	3,500	1,883	0.40
5,000 - 9,999	589	7,000	4,123	0.88
10,000 - 19,999	635	14,000	8,890	1.90
20,000 - 39,999	656	28,000	18,368	3.92
40,000 - 59,999	384	48,000	18,432	3.93
60,000 - and over	1,301	319,354	415,480	88.70
<b>All Farms</b>	<b>6,477</b>	<b>72,323</b>	<b>468,436</b>	<b>100.00</b>

<sup>1</sup>Estimated by adding 2/5 of the range in sales to the lower limit of sales, except for farms selling products valued at less than \$2,500.

Source: *United States Census of Agriculture, 1964.*

**Table 2. Average Sales per Farm and Number and Percent of Farms With Sales of \$60,000 and Over, 11 Western States and United States, 1964.**

<i>State and Subregion</i>	<i>Average Sales per Farm</i>	<i>Total Farms</i>	<i>Farms Having Sales of \$60,000 or Over</i>	<i>Percent with Sales of \$60,000 or Over</i>
	(Thousand)	(Thousand Farms)		
Washington	13.9	45.6	1.8	3.9
Oregon	10.7	39.8	1.3	3.3
California	43.3	80.8	11.6	14.4
Arizona	72.3	6.5	1.3	20.0
Idaho	16.1	29.6	1.1	3.7
Nevada	23.7	2.2	0.2	10.0
Utah	10.0	15.8	0.3	1.9
Montana	14.4	27.0	0.7	1.6
Wyoming	16.8	9.0	0.4	4.4
Colorado	20.0	29.7	1.5	5.0
New Mexico	16.0	14.2	0.7	4.2
<b>All Western States</b>	<b>20.2</b>	<b>300.2</b>	<b>20.9</b>	<b>7.0</b>
<b>United States</b>	<b>9.6</b>	<b>3,158.0</b>	<b>74.0</b>	<b>2.4</b>

Source: *United States Census of Agriculture, 1964.*

dairy and the remainder miscellaneous.

#### Implications and Conclusions

The advantages of large integrated farm businesses in terms of efficiency of procurement, production and distribution make it readily apparent that these firms will be even larger in the future. The progressive transformation of traditional agriculture to fit the mold of the industrial world is upon us.

However valuable the change has

been and will be to the total economy in terms of lower cost and lower prices to consumers — and it will be significant — the impact of the change on the traditional farm family and its related values of freedom and dignity of the individual should not be neglected. Complete change to commercial integrated agriculture would require that farmers become hired employees, or contract producers for commercial firms.

(Continued on Next Page)

(Continued from Previous Page)

All segments — the large integrated firm, the smaller family farmer, the farm laborer and contract grower — require recognition at this time. Each has special problems and needs and each can be complementary to the other.

The larger farms and agribusinesses can be served by professional assistance in the field of marketing, accounting, production, financing and management. Teaching, research and extension programs should and are being shaped to serve this group.

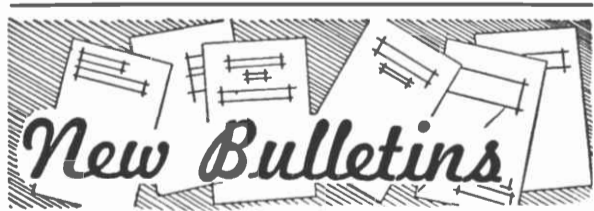
Smaller farmers and family farm operators will face stiffer competition in the future from more efficient large firms, and will be forced to become larger. They must consider cooperative buying and selling associations, or contract with the large integrated firm. They will need assistance in production and marketing decisions, but most of all in the techniques of group bargaining, contract farming, and financing larger and thus more efficient units.

## TO OUR READERS

We draw your attention to two special publications from this college, available upon request:

FOLDERS 100 and 101 — “Irrigated Areas in Arizona.” These are companion maps, one showing the irrigated areas on an outline map of the state, the other a detail map showing actual areas, county by county. Persons interested in either one should get both.

Write “Progressive Agriculture,” c/o College of Agriculture, University of Arizona, Tucson, and the maps will be mailed to you. There is no charge.



A-1 (Revised) Chemical Weed Control Recommendations.

A-26 (Revised) Protect the Cotton Plant from Insect Injury.

A-51 Budding and Grafting Fruit and Nut Trees.

Folders:

116 Citrus Nematode Control.

120 Cotton: Rootknot Nematode.

## Recent Journal Articles Listed

**EDITOR'S NOTE:** In addition to the various “popular” publications of this College of Agriculture — Extension folders, Extension bulletins, 4-H materials, the popular bulletin series, technical bulletins and others — staff members submit a prodigious output of material to the scientific journals in a score or more of fields of scientific inquiry. A listing of recent journal papers is given in each issue of **PROGRESSIVE AGRICULTURE IN ARIZONA**. Readers who wish copies of certain papers should write directly to the authors. The listing below includes Journal Number, title of the paper, authors, and journal to which the article was submitted.

- 1162 “Physiological Responses of Resistant and Susceptible Root Tissues Infected by *Phymatotrichum omnivorum*”  
by H. E. Bloss and George A. Gries  
Phytopathology
- 1163 “Alien Workers in United States Agriculture: Impacts on Production”  
by William E. Martin  
Journal of Farm Economics
- 1164 “Macro-Nutrient Imbalance in Grapefruit Trees on a Calcareous Soil Fertilized with Ammonium Phosphate and Ammonium Nitrate”  
by G. C. Sharples and R. H. Hilgeman  
Proceedings of the American Society for Horticultural Sciences
- 1165 “F<sub>1</sub> Hybrid Muskmelons, I. Superior Performance of Selected Hybrids”  
by R. E. Foster  
Proceedings, American Society for Horticultural Science
- 1166 “Nitrogen Availability in California Soils in Relation to Precipitation and Parent Material”  
by J. O. Klemmedson and Hans Jenny  
Soil Science
- 1167 “Pima Cotton Varieties for Low and High Elevations”  
by Carl V. Feaster, E. L. Turcotte, and E. F. Young, Jr.  
ARS Series
- 1168 “Induction of Sporulation of *Phymatotrichum omnivorum* on a Defined Medium”  
by Rae Woods, H. E. Bloss, and George A. Gries  
Phytopathology
- 1169 “Viability of Grass Seed Stored for Long Periods of Time Without Temperature or Humidity Control”  
by Arthur R. Tiedemann and Floyd W. Pond  
Journal of Range Management
- 1170 “A Jig to Measure Wear of Concrete Flume Surfaces”  
by Arthur R. Tiedemann, and Bill W. Brown  
Agricultural Engineering
- 1171 “The Hybridization of Tobacco RNA to Tobacco DNA Embedded on Membrane Filters”  
by Kaoru Matsuda and Albert Siegel  
Biochemical and Biophysical Research Communications
- 1172 “Effect of Black Granular Mulch on Soil Temperature, Water Content, and Crusting”  
by Hasan K. Qashu and D. D. Evans  
Soil Science Society of America Proceedings
- 1173 “Fruit Growth, Apparent Transpiration, Internal Water Stress and Fruit Characteristics of Grapefruit in Florida and Arizona”  
by R. H. Hilgeman  
Florida State Horticulture Society
- 1174 “Biological Observations on *Ptilothrix sumichrasti* (Cresson) in Southern Arizona (Hymenoptera: Anthophoridae)”  
by George D. Butler, Jr.  
Pan Pacific Entomologist
- 1175 “A Multiple Use Falling-Weight Penetrometer”  
by B. K. Worcester and T. H. McIntosh  
Soil Science Society of America Proceedings
- 1176 “Factors Affecting the Distribution of Shrub Live Oak (*Quercus Turbinella* Greene)”  
by Richard E. Saunier and Robert F. Wagle  
Ecology
- 1177 “EEC Common Agricultural Policy and the World Grain Economy”  
by Roger W. Fox  
Journal of Farm Economics
- 1178 “Cuçurbit Viruses on the West Coast of Mexico”  
by M. R. Nelson, J. A. Laborde, and H. H. McDonald  
Plant Disease Reporter
- 1179 “The Use of Operating Characteristic Curves to Estimate Population Proportion”  
by R. O. Kuehl and R. E. Foster  
Proceedings American Society for Horticultural Science
- 1180 “Crop Protection — Bird-Tolerant Sorghum-Crop Pests”  
by R. L. Voight  
Crops and Soils
- 1181 “Comparison of Milo and Barley for Lactating Cows. II. Effects of Roughage Intake and Season”  
by W. H. Brown, A. O. Jareed and J. W. Stull  
Journal of Dairy Science