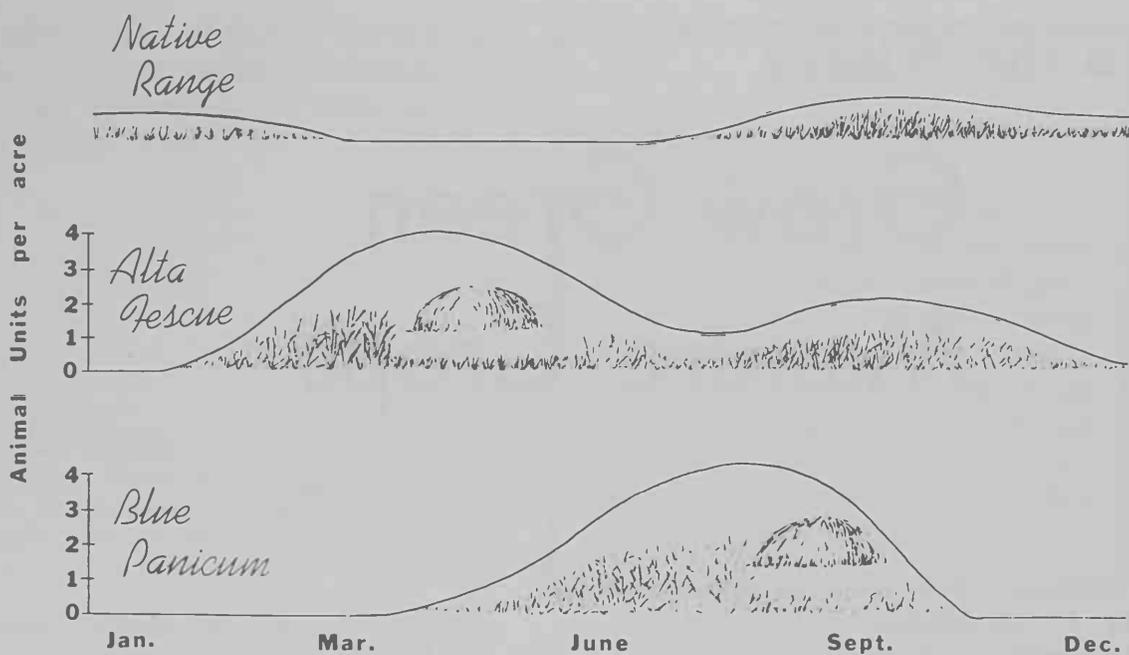


Supplement Range With

IRRIGATED PASTURES

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Grazing seasons of cool weather and summer growing irrigated pastures provide forage when it is most needed to supplement native range.

Most ranchers can use dependable green forage to supplement their range. Can you? Or can you grow pasture profitably to rent to neighboring ranchers?

The Soil Conservation Nursery, now operated by the University of Arizona, has tested dozens of grasses for use in irrigated pastures. Production records have been obtained from field plantings of many of these grasses. Two summer-growing grasses stand out, blue panicum and coastal Bermuda grass. Either alta fescue or Goar fescue has given best results for fall and spring. With either of these, perennial rye grass is a good companion grass.

Extra Feed

Ranchers farming irrigated land have a place for perennial grass or grass-legume pastures. The seasons during which feed is available from these pastures are shown in the accompanying sketch.

Note how the peak of irrigated forage closely coincides with the period when feed is most frequently becoming short on the range. It is to your advantage to carry part of your herd on nutritious green feed. With good pasture you can do so. Access to dependable pasture will enable you to defer and rotate grazing to improve the range.

Perhaps you have thought only in terms of alfalfa, barley, oats, and sudan grass. No finer feed than alfalfa can be grown for hay. However, many ranchers want to avoid alfalfa pasture because of possibility of bloat. Others wish to get away from yearly or twice yearly seed bed preparation of barley, oats, or sudan grass.

The poor management frequently given to irrigated perennial pasture grasses has often resulted in low yields. As a result, the impression exists that irrigated

pastures don't pay.

What kind of yields can we expect with fertile soil and good management? The figures in the sketch represent production attained by several ranchers who have had good management during some growing seasons. They are taken from the intermediate elevations in Yavapai, Cochise, and Pima counties.

Start Pasture Right

In order to obtain profitable production certain basic principles must be observed.

1. Select a good piece of productive land.
2. Use species or mixtures adapted to your area. These vary with local conditions. The pasture mixtures which have become standard in the intermediate elevations such as Yavapai and Cochise counties are not adapted in the hot dry valleys. There blue panicum and Coastal Bermuda grass in pure stand give long grazing seasons and high carrying capacity per acre. Alta fescue and Goar's fescue have proven the only satisfactory perennial companion grasses that can withstand the summer heat in the lower valleys. Perennial rye grass provides extra forage the first spring. These cool-season grasses should be planted in a pasture separate from the summer growing grasses.

Pasture mixtures for dairy cattle contain legumes. Since this complicates the management of beef pastures due to bloat, ranchers may prefer to fertilize more heavily and use grasses alone in areas of high bloat hazard. Legumes have been used in mixtures of alta fescue and rye grass with varying degrees of success. Alfalfa, white or yellow-blossom sweet clover, Ladino clover and bur clover, the highest producing legumes, present a bloat hazard, particularly in the spring.

Black medic clover and birds-foot trefoil have not produced bloat but add little total forage to the mixture.

3. Provide for irrigation. Irrigations may be at seven-day to two-week intervals through the summer depending on your soil and the climate. You will want to irrigate with the least amount of labor possible. Proper slope and shortened runs enable you to apply the amounts of water needed to replenish moisture in the root zone. Technical assistance is available to help you determine the needed land leveling and plan for most efficient irrigation on your particular soil.

Prepare Good Seed Bed

4. Work under and rot previous crop residues, pre-irrigate, sprout and kill weeds, and prepare a firm seed bed as for alfalfa. Avoid working the soil when it is dry enough to powder and destroy the structure. Likewise, avoid the compaction from machinery on soil moist enough to pack. Apply phosphate fertilizer according to local recommendations for legumes. Be sure phosphate will be available to balance with the high amounts of nitrogen required for pure stand grass.

5. Plant at the proper time. For summer growing grasses such as blue panicum, wait to plant until after cotton is up. Plantings may be made up to mid-summer. For cool weather growing grasses like alta fescue, planting at the same time as for early alfalfa and small grains is best. Do not delay until cold weather.

6. Irrigate two or three times in about a 10-day period, keeping the surface soil moist to avoid drying to the $\frac{1}{4}$ " to $\frac{1}{2}$ " depth of the seed. Apply nitrogen to give the seedlings a boost as soon as the stand is up.

(Please Turn to page 11)

Preparing Tree Holes for ROOT-ROT Control

R. B. Streets

Plant Pathologist

A large number of shade trees die each summer in southern Arizona from Texas root rot caused by a fungus native to our desert soils. In most cases the owners wish to replant to regain the lost shade but to do so without adequate treatment invites the loss of the replants. Tree holes prepared in the fall months will be in the best condition for spring planting.

The following method of preparing tree holes has been used successfully for many years in replanting in sites where trees have been killed by the Texas root-rot fungus. As the materials used are fertilizers (with the exception of the sulfur which acts as a fungicide and also to some extent reduces the alkalinity of the soil) the rate of growth on replant trees has been more than doubled in many cases. For this reason, the method has also been widely used to produce the most favorable growing

conditions in the absence of known infestations of root rot, and to guard against its possible presence. This is the best method known of protecting trees against root rot.

The method consists of digging a broad and comparatively shallow hole and distributing in the soil the following materials:

- (1) A generous amount of manure (up to one-fifth by volume)
- (2) Soil sulfur at the rate of one-quarter pound per cubic foot of tree hole
- (3) Ammonium sulfate (20% N) or equivalent at the rate of one ounce per cubic foot.

In order to get good distribution of the materials without the extra labor of mixing them, they are placed in thin layers alternating with layers of soil.

Irrigated Pastures

(From page 7)

7. Clip the pasture once before grazing.

Use Good Management

1. Provide four or more fenced areas of such size the herd will graze each one off in less than a week. Move to the soil environment more favorable to plant growth.

Ammonium phosphate, to be fully utilized, must be placed in the root zone. In alkaline soils the phosphate is not leached down to the roots by water as nitrogen fertilizers are.

Placing iron in the mix provides a supply of available iron to overcome the iron deficiency resulting from lime induced chlorosis. Such chlorosis is indicated by a yellowing of the leaves.

Often leaching of the soil will remove any excess soluble salts. Some of the soil conditioners on the market also will aid the soil structure.

next pasture when there is not less than six inches of stubble left on erect grasses to allow for quick regrowth. Sod grasses should have 3" to 4" stubble left. Allow three to five weeks, as necessary, before regrazing.

2. Irrigate as soon as cattle are moved to the next pasture and again before plants show stress. Let soil dry before turning livestock on the pasture after an irrigation.

3. Apply nitrogen as necessary to maintain a deep green or blue green color in the regrowth. You waste water on pale yellow green pasture. Productive grass uses 20 to 30 units of nitrogen per grazing. It must either come from the soil or you must supply it. If you have a legume in the mixture you must still fertilize your grass. It will still need nitrogen though about a third less.

4. During peak production make hay or ensilage from the pastures when growth begins to get ahead of the stock and the plants start to head. You will need this extra food in mid-winter when there is little or no pasture.



Cochise County

Wed., 6:55 a.m.—KAWT, Douglas

Coconino County

Tues. and Thurs., 8:10 a.m.—
KCLS, Flagstaff

Graham County

Sat., 10:00 a.m.—KGLU, Safford

Greenlee County

Sat., 11:15 a.m.—KCLF, Clifton

Maricopa County

Mon. through Sat., 5:55 a.m.—
KRUX, Phoenix

Sun., 8:45 a.m.—KOY, Phoenix

Pinal County

Mon. thru Fri., 12 Noon—
KCKY, Coolidge - Casa Grande

Yuma County

Mon. through Fri., 7:20 a.m.—
KYUM, Yuma

University of Arizona

Saturday, 12:30 to 1:00 p.m. (Arizona Farm and Ranch Hour)—KOY, Phoenix; KTUC, Tucson; KSUN, Bisbee; KYMA, Yuma; KCLS, Flagstaff; KVNC, Winslow; KAWT, Douglas.

There Is Still a Challenge For American Agriculture

Two people out of three of the world's population are today actively engaged in farming. Tonight approximately two people out of three will go to bed hungry.

This startling comparison is at once a condemnation of modern science for its failure to solve the age-old problem of hunger and pestilence, and at the same time a stirring challenge to scientists of vision and good will.

The American farmer has effectively combined science, imagination and ambition to become the most efficient food producer the world has ever known. Under the exigencies of two wars in the last decade and a half he produced "food for war" in record volume. His product was consumed by the insatiable maws of disaster and destruction. Food for ourselves and our friends was a powerful weapon of defense.

We must relentlessly battle to use "food for peace." If we would remain a free nation and promote international peace and brotherhood, we must foster such measures as will enable the tremendously productive American farmer to unleash his initiative and his ingenuity in a full and expanding output, so that a year from now fewer than two people out of three will go to bed hungry.

—Earl L. Butz, Assistant Secretary of Agriculture.