

IRRIGATED PASTURE

PRODUCTION AND MANAGEMENT FOR SACRAMENTO COUNTY

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January 1967
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IRRIGATED PASTURE PRODUCTION AND MANAGEMENT IN SACRAMENTO

Irrigated pastures play an important role in the agricultural economy of Sacramento County. It is estimated that at the present time over 45,000 acres are in production with much of this acreage located in the Elk Grove, Galt area. About one-half of the commercial acreage is being utilized by beef cattle and about one-half by dairy cattle; however, increasing numbers of small plantings (less than 5 acres) are occurring in suburban areas and in many cases these are being planted specifically for horses.

Irrigated pastures may be grown economically on marginal lands that are suitable only for the production of shallow annual crops; small grain cereals in the winter and sudangrass, hybrid sorghum or corn in the summer.

The two factors necessary in order for a potential grower to make the decision to plant irrigated pasture are:

1. Enough soil above hardpan so that it may be leveled to grade (not applicable if sprinkler irrigation is to be used).
2. Adequate water.

LAND PREPARATION

Land should be prepared to facilitate rapid shallow irrigation. In Sacramento County the land usually is plowed and/or disced and the strip or border check type of land preparation for surface irrigation is the method generally used. This consists simply of parallel levees constructed at intervals to guide the water down the slope. The checks should be harrowed and ring rolled if possible, after completion of levees. A minimum slope of 0.3 feet per 100 feet is desirable in order to provide rapid surface drainage.

WATER SUPPLY AND IRRIGATION

Pasture requires about 4 acre feet of water per season in this area. This should be applied by light, frequent irrigations delivering 3 acre inches per application. In a normal pasture season, about 15 irrigations will be necessary supplying a total of between 45 and 50 acre inches.

A pump flow of 10 gallons per minute for each acre to be irrigated is a good rule of thumb to follow when pumping directly onto the field. Where sumps and return flow pumping systems are being utilized, an adequate job of irrigation may be realized with 25% less water.

Sprinklers may be used for irrigating pastures under nearly all conditions; however, a considerable investment in equipment is needed and for larger acreages in this area it is generally considered to be economically impractical.

SEEDBED PREPARATION AND SEEDING

The seedbed should be firm and moist, covered by two to three inches of well worked soil - the less clods the better. In this area, however, the land is frequently worked dry in the late summer and early fall so that pre-irrigation may be necessary. On most of our Sacramento County soils, rolling with a ring roller or cultipacker is advisable before and after broadcast seeding. This smoothes and firms up the seedbed and also uniformly covers the seed.

TIME OF SEEDING

The best time for seeding in Sacramento County is between October 1 and November 15. Pastures may be planted in February or March but problems can be encountered from drying winds and stands greatly reduced. At best, spring plantings usually result in a reduction in the amount of first-year forage produced.

RECOMMENDED PASTURE MIXES, UPLAND-SHALLOW SOILS

Ladino Clover.....	2 lbs.
Trefoil (erect).....	2 lbs.
Perennial Ryegrass.....	3 lbs.
Akaroa Orchardgrass.....	6 lbs.
Total	13 lbs/acre

This mixture will result in about 130 to 140 seeds per square foot which will insure more than an adequate stand. On deep, well-drained soils, the Ladino clover may be replaced with Lahontan alfalfa.

Where pasture is being planted to be used exclusively by horses, the legume portion of the mix should be reduced to a minimum. On most of our soils this would be:

Ladino Clover.....	$\frac{1}{2}$ - 1 lb.
Trefoil (erect).....	1 lb.
Perennial Ryegrass.....	4 lbs.
Akaroa Orchardgrass.....	6 - 8 lbs.
Total	11 $\frac{1}{2}$ - 14 lbs.

PASTURE FERTILIZATION

Phosphorus

Most of our upland soils are deficient in phosphorus. In order to insure adequate available phosphorus for optimum legume growth, at least 60 lbs. of P₂O₅ should be applied per acre. This should be applied on new pastures at time of planting and on established pastures during the dormant season (November through February), in the form of 300 lbs/acre of single-super phosphate. This is a 20% material (each 100 lbs. of single-super contains 20 lbs. of P₂O₅) containing 9% additional sulfur which is sometimes deficient in upland soils.

Nitrogen

This nutrient is seldom present in sufficient amounts to supply the needs of the grasses in the mix. Because

ammonium or nitrate nitrogen leaches rapidly in our lighter soils it has been demonstrated that a split application delivered in April and again in mid-July is the most effective and economical. Aqua ammonia containing 20% nitrogen may be applied in the irrigation water at the rate of 100 lbs. per acre. Ammonium nitrate, a granular material containing 33½% nitrogen, may be applied at the rate of 60 lbs. per acre but it must be irrigated into the root zone to be effective. These rates deliver 20 lbs. of nitrogen per application.

PASTURE MANAGEMENT

Once a stand is established its productivity and longevity will depend on how it is managed!

Grazing

Livestock should be rotated so that fields are not grazed when they are wet. Extensive tests have shown that in order to realize the greatest amount of the highest quality feed, grazing should be followed by a 22 - 24 day regrowth period before grazing again. This suggests then a setup of at least six equal sized fields which during the pasture season would be irrigated twice between each grazing.

Mowing

This practice conserves feed, maintains more uniform species distribution and controls weeds. Many irrigated pasture operators harvest ¾ to 1 ¼ tons of excellent quality hay off their pastures each spring.

Harrowing

Prevents loss of pasture area, conserves feed and increases fertility. A light flexible harrow towed behind a jeep or small wheel tractor will do the best job - preferably after a rain or irrigation when the droppings are moist.

Chemical Weed Control

PASTURE GRASS - -

<u>Herbicide</u>	<u>Rate/A Active Ingred.</u>	<u>Spray Vol/A</u>	<u>Pref. Time of Application</u>
2,4-D amine	1/2 - 3/4 lb.	20-60 gal. water	When pasture is well es- tablished and crop and weeds are growing vigorously
2,4-D acid, amine or ester	For spot treatment of perennial broad-leaved weeds. Use 2 lbs. per 100 gals. of water and spray to wet foliage of weeds.		
4-(2,4-DB) amine	1 lb.	20-60 gal. water by ground or	When weeds are 1-3 leaf stage
4-(2,4-DB) ester	3/4 lb.	10 gal. by air	

The above chart will provide specific recommendations for the control of broadleaf weeds if they become a nuisance.

Alfalfa is susceptible to 2,4-D. If pastures contain alfalfa do not use this material. Contact this office for additional help if necessary.

Permit required from County
Agricultural Commissioner
for use of above materials

CLOVER MIXTURES

WEEDS CONTROLLED

REMARKS

Broad-leaved weeds, especially annuals

Apply when there is good soil moisture, preferably when weeds are small. Do not irrigate immediately after spraying. Do not graze dairy animals on treated areas within 7 days after treatment.

Avoid runoff. This treatment will damage most legumes in the pasture mixture.

Seedling broad-leaved weeds

Treat before flowering of the clover. Do not graze treated fields or feed treated plant parts to livestock within 30 days of application.
