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COSTS OF IRRIGATING IN LOUISIANA

The cost of irrigating an acre of land in Louisiana in 1953 ranged from $5.74 to $23.83, according to a survey conducted by Louisiana State University agricultural economists.

A survey of 42 farms using irrigation was conducted in the latter part of 1953 and early 1954, in order to get information on investment and operating costs. Data were obtained from areas with varied soils, topography, and types of farming. In addition, there were variations in irrigation methods and the types of equipment used.

All these factors influence investment costs, as well as costs of operation. Consequently, the average figures obtained from the survey may not necessarily be representative of any individual farm situation. Some of the results of the survey, which included both sprinkler and flood-irrigation methods, are shown in the table below.

The average total investment in irrigation equipment varied from $1,750 for farms where only 10 acres were irrigated to $10,650 for those on which 300 acres were irrigated. Although the investment appeared to be greater for the farms using sprinkler equipment, there were too few cases for conclusions to be drawn.

ESTIMATED AVERAGE PER-ACRE COSTS OF IRRIGATION, 1953

42 Louisiana Farms

Acres irrigated	Capital investment	Fixed costs[1]	Operating costs[2]	Total costs
10	$ 1,750	$21.88	$1.95	$23.83
30	2,850	11.88	1.48	13.36
50	3,550	8.87	1.40	10.27
70	4,275	7.62	1.37	8.99
100	5,287	6.60	1.35	7.95
150	6,800	5.66	1.33	6.99
200	8,175	5.11	1.31	6.42
250	9,487	4.74	1.31	6.05
300	10,650	4.44	1.30	5.74

[1]Depreciation, maintenance, and repairs.
[2]Labor and fuel. Labor valued at 50 cents per hour.

A major factor in determining the size of the investment in irrigation facilities was the number of acres irrigated. As the numbers of acres which were irrigated increased, total investment costs rose. The per-acre fixed costs were about 46 percent lower for the farms irrigating 30 acres than for those irrigating only 10 acres. When irrigated acreage was increased from 30 acres to 50 acres, a decrease of 25 percent was realized in fixed costs per acre. Declines in per-acre fixed costs were moderate to small as acreage increased beyond 50 acres.

Other important factors which resulted in considerable variation in fixed costs among the farms included whether the irrigation was done by flooding or sprinkling, the source of water and its proximity to the fields to be irrigated, the topography of the land, and the resourcefulness of the farmers in using natural conditions or low-cost materials.

Operating costs include charges for labor and fuel. Total labor requirements increased as the number of acres irrigated increased; however, average man-hours per acre decreased. Most of the gain in labor efficiency, as measured by labor costs, occurred on farms where 50 acres or less were irrigated.

The study indicates that labor requirements were higher for farms using the flooding method of irrigating. In many cases, labor can be used for other farm work after the sprinkler equipment has been put into operation, resulting in a more complete utilization of the labor supply. On those farms which have enough equipment and acreage, sprinklers can be set up in one area while another is being watered.

Most farmers indicated that flooding required almost constant attention. In situations where the land was reasonably flat and had not been leveled for irrigation, it was difficult to keep water from breaking over low contours or rows.

Pasture Fertilization

Every dollar spent for fertilizing pastures results in $2 to $10 in increased production, depending upon the crop, rainfall, and management, reports E. M. Trew, Extension pasture specialist of Texas A. & M. College.

It is not uncommon for farmers to double pasture and meadow forage yields through fertilization. In addition, the proper fertilizer application helps to control plant mixtures and promote balanced grazing. If plenty of plant food is available, more forage of better quality can be produced with less water.

In recent tests at College Station, 22 inches of water were required to grow a ton of Coastal Bermuda hay. With the application of 100 pounds of actual nitrogen per acre, the water requirements were reduced to only 13 inches.

Fertilizers can be used to help regulate plant mixtures. In a grass-legume pasture, fast-growing legumes likely will dominate in soils which are low in nitrogen and high in minerals. However, legumes do not grow as well in soils that are low in minerals, phosphate, lime, or potash. A nitrogen application will boost substantially grass production in a grass-legume pasture.

The pasture specialist recommends that warm-season, permanent-type pastures be fertilized with nitrogen during the fall or winter when the pastures are being renovated. Pastures of Dallis and Bermuda grass also may be fertilized in the early spring before summer plants emerge and start growth. If sufficient moisture is available later in the spring and summer, another nitrogen application will boost plant growth and increase the plant protein content.

A mixed fertilizer applied before or at planting time is ideal for Sudan grass and other warm-season supplemental grazing forages. If moisture is adequate, additional nitrogen can be used during the growing season.

Farmers should have their soils tested now in order to plan fertilization programs. These tests determine accurately the nutrient needs of soils.

Sudan Grass for Summer Grazing

Sudan grass is a vital link in providing year-round grazing and is quite popular among Texas farmers, according to E. M. Trew, Extension pasture specialist of Texas A. & M. College.

Sudan grass, which grows well in hot weather, can be used to graze livestock while permanent pastures are given a rest. It can be planted at any time after the danger of frost is over, and by planting it at 3- to 4-week intervals as long as moisture conditions permit, the grazing season can be extended throughout the summer.

Varieties which are adapted to Texas conditions are Common, Tift, and Sweet Sudan, although the latter does better in humid areas. Plantings of Sudan made at different times may be fenced separately, which will assist in rotation grazing.

It is recommended that cattle be turned in on a small area, allowed to graze it off quickly, and then moved to another area.

Highest returns from temporary grazing have been obtained through this type of rotation procedure.

Summer Forage Crops

On a single-harvest basis, both cowpeas and soybeans compare favorably with Sudan in forage yields. However, Sudan is superior to both crops on a seasonal-yield basis. These conclusions were reached after studies of summer annual forage species were conducted at College Station and Prairie View in 1953 and 1954 by Texas A. & M. College.

The tests indicate that Sudan-cowpeas or Sudan-soybeans mixtures for hay cannot be recommended. Since the protein and phosphoric acid content of the Sudan forage produced in these tests was satisfactory, there was little advantage in adding a legume to improve the quality.

The use of nitrogen fertilizer is recommended, rather than growing a legume companion crop. The tests show that planting of a legume mixture in Sudan contributed little to the yield, and only then at the first harvest. At both Prairie View and College Station, the Sudan plots containing a legume companion crop yielded less at the first harvest than the plots of Sudan alone. The difficulty in a mixture of this type is that the two do not reach an optimum stage for harvest at the same time.

There was little difference in yield between Chinese Red cowpeas and the forage-type soybeans when grown in pure stands. Both made a fairly dense growth and produced approximately 1½ tons of good-quality hay per acre. These yields compare favorably with a single harvest of Sudan grass.

However, Sudan grass will produce three or four harvests under favorable moisture conditions and efficient management. Cowpeas and soybeans usually are considered single-harvest crops, since they do not recover following harvest.

Silage 12 Years Old Makes Good Feed

A trench silo filled 12 years ago by their father helped two central Texas farmers to carry their cattle through another dry season in 1954.

The silage, made of red top cane and hegari, was placed in the trench in 1942. When feed became short, the farmers opened the trench silo and found the silage perfectly preserved and entirely satisfactory for feeding.

This story emphasizes the importance of storing surplus feed for use in times of drought and other seasons when green feed is not available.

Fertilizer for Black-eyes

The application of 20 percent superphosphate at rates of 40 pounds and 80 pounds of phosphoric acid per acre resulted in highly significant increases in the total yield of Extra Early black-eyed peas at Hearne, Texas, in 1954, according to recent tests by Texas A. & M. College horticulturists.

There was no significant increase in total yield as a result of the application of either nitrogen or potash. However, the addition of 40 pounds of nitrogen per acre resulted in a significantly larger yield of peas *at the first harvest.*

Tests identical to those at Hearne were conducted at College Station, Texas. In these tests, yields did not respond significantly to the application of either phosphoric acid or potash. The application of larger amounts of nitrogen actually lowered the total yield of peas.

Soil samples taken prior to the application of the commercial fertilizer showed that the plots planted to peas at College Station were higher in nitrogen, phosphoric acid, potash, and other essential elements than the test plot soils at Hearne. This fact accounts for the differences in the results of the fertilizer tests.

The use of fertilizers for improving the early-season yields of black-eyed peas in east Texas is very important. Soil moisture usually is more adequate in the early part of the season, and the peas harvested at that time are of higher quality and the pods are filled out more evenly.

Control of Pecan Weevils

The recommended method of controlling pecan weevils in Oklahoma is to spray with 4 pounds of 50 percent DDT wettable powder to 100 gallons of water, according to Oklahoma A. & M. College specialists. This recommendation is based on experiments conducted near Stillwater, Oklahoma, from 1947 through 1950.

The timing of the spray application is extremely important for proper control. One to two applications will be necessary, depending upon the time and rate of emergence of the adult weevil from the soil where it had pupated.

Pecan weevils cause two types of damage. The adult insect attacks the pecan before the kernel is formed, which may result in severe shedding of punctured nuts. The other type of damage is caused when the insect lays eggs in the kernel of the pecan after the kernel has developed.

In Oklahoma the adult weevils emerge from the soil beginning in late July and continuing until October. Shaking the trees thoroughly to collect adult insects on a canvas is the best way to determine when to spray. When five or more insects are found per tree, it is time to make the first application.

The tests show that lead arsenate and chlordane sprays did not control the pecan weevil effectively. Jarring the trees three times weekly to collect and destroy the insects was not found to be an effective control; nor was the application of tanglefoot compound applied in a band around the tree trunk.

Publications

New Mexico Agricultural Experiment Station, State College:

Principal Livestock-Poisoning Plants of New Mexico Ranges, Bulletin 390, by J. J. Norris and K. A. Valentine.

Oklahoma Agricultural Experiment Station, Stillwater:

A Comparison of the Bulk and Can Systems for Handling Milk on Farms, Bulletin No. B-436, by P. E. Johnson and others.

The Value of Prairie Hay for Milk Production, Bulletin No. B-423, by Magnar Ronning and A. H. Kuhlman.

Boll Weevil and Bollworm Control with Insecticides, Bulletin B-441, by F. A. Fenton and others.

Self-Feeding Salt and Cottonseed Meal to Beef Cattle, Bulletin B-440, by A. B. Nelson and others.

Milk Test Variations in the Tulsa Milkshed, Bulletin No. B-438, by Leo V. Blakley and Durward Brewer.

Cotton Quality As Influenced by Lint Coarseness, Bulletin No. B-442, by John M. Green and George E. Stroup.

Copies of these releases may be obtained by request to the respective publishers.

The *Agricultural News Letter* is prepared in the Research Department under the direction of J. Z. Rowe, Agricultural Economist.