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CONSERVATION ON SHARE-RENTED FARMS

Landowner-tenant relationships affect the extent to which conservation practices are carried out. Twenty-seven tenant-operated farms in the central Blacklands of Texas were studied in 1955-56 by Calvin C. Boykin, Jr., assistant professor in the Department of Agricultural Economics and Sociology of Texas A. & M. College, in cooperation with the Navarro-Hill Soil Conservation District.



In order to evaluate the application of conservation practices, a scoring system was developed which provided an over-all conservation score for each farm.

Scores were calculated from such practices as contour farming, cover cropping, fertilizing legumes and grasses, stubble mulching, terracing, pasture seeding, pond construction, and waterway development. More weight was given to the permanent-type practices—such as terracing, pond construction, and waterway development—since their application was more expensive and fewer of them were established.

The degree of success in carrying out a conservation plan was found to depend on the following factors: (1) personal characteristics of landowners and tenants, (2) division of management, (3) nature of the landowners' resources, (4) security of tenure, and (5) sharing of conservation costs and returns.

Personal Characteristics

Personal characteristics of landowners and tenants often affect the amount of con-

servation carried out. One of the factors considered in the study was whether or not older farmers want to invest in conservation measures which may yield major returns in the future rather than immediately; it was found that the age of a landowner did not affect the conservation accomplishments significantly, although landowners as a group were older than tenants.

Women owned many of the tenant-operated farms, and less progress was made in completing conservation plans on these farms than on those owned by men. Results of the study show that the desire to follow through with a conservation plan is more essential on the part of tenants than landowners, although accomplishments are greater when both are interested. On farms with the highest conservation scores, landowners considered conservation practices a basic requirement for selecting tenants.

Division of Management

The way management functions are divided between landowners and tenants is quite important in the development of conservation plans. Scores were higher when the tenant was present during the discussion of conservation needs by the Soil Conservation Service technician and the landowner.

Results of the Blacklands study show that a higher over-all conservation score was achieved on a farm where both the landowner and the tenant referred to the plan frequently in formulating operational decisions. Conservation accomplishments were greater on farms where the tenant, rather than the landowner, made application and was paid for completion of tem-

porary-type conservation practices under the Agricultural Conservation Program.

Nature of Landowners' Resources

The amount of conservation accomplished—and possibly the kind of tenant working the farm—is determined, in large measure, by the number of acres in cultivation, quality of soils, income from additional sources, and capital spent by the landowner on conservation equipment. The average acreage in cultivation on the farms studied was 100 acres.

Conservation scores were greater on farms with 100 acres or more in cultivation than on farms with fewer than 100 acres. Scores also were high where landowners had other sources of income and had invested in conservation equipment for the tenants' use. The highest scores were for farms with deep, fine-textured, and slowly permeable soils.

Security of Tenure

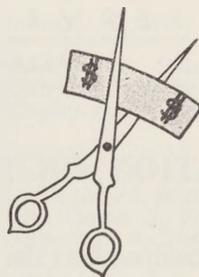


The over-all conservation scores indicate that the time the tenant had been on the farm was not as important as the time he expected to remain there. Although some tenants had rented a particular farm for several years, they could not plan ahead more than a year. According to the study, a written rental agreement is not essential for application of conservation practices; however, higher scores were attained on farms where the tenants indicated they could plan ahead for more than a year.

Sharing of Costs and Returns

Many conservation practices involve costs that may lead to an individual's gaining from another's investment if the landowner and tenant do not share the costs in the same proportion as the returns. On the 27 tenant-operated farms studied, costs for permanent-type practices (terracing, waterway development, and farm pond construction) were not shared. On farms achieving the highest conservation scores, the tenants

performed minor maintenance operations on permanent-type structures.



Costs of temporary-type practices (cover cropping, grass seeding, and fertilizing grasses and legumes) were shared in several ways. Conservation scores were higher on farms where costs were allotted in proportion to returns than on those with other methods of sharing.

Implications

Success or failure of the conservation plan depends on the joint efforts of the landowner and tenant. Both should be aware of the conservation needs in order to decide on their contributions in completing the plan.

An increase in the amount of financial assistance under the cost-sharing arrangements of the Agricultural Conservation Program might encourage more conservation work on small farms. Economic studies of costs and the probability of increased returns from permanent-type practices would provide a basis for improving cost-sharing agreements and possibly increase the amount of conservation accomplished.

Trend in Tree Nut Demand

Consumption of tree nuts in the United States by 1975 is likely to exceed present supplies, reports the United States Department of Agriculture. Along with the rise in consumption, production is also expected to increase.

Population increases alone would insure an annual domestic consumption of over 300,000,000 pounds, shelled basis, by 1975 if per capita consumption of tree nuts remains at the 1955 level. Per capita consumption of tree nuts is expected to increase, however, because of improved marketing methods and increased consumer education concerning use of nuts in main-course dishes, as well as in desserts and confections.

Soil Fumigation for Citrus Replants



Recent tests were made at the Lower Rio Grande Valley Experiment Station at Weslaco, Texas, to determine the effect of soil fumigation on replanted citrus trees. According to

Bailey Sleeth, pathologist at the station, 4-year-old citrus trees growing in soil fumigated with ethylene dibromide at the rate of 350 pounds per acre averaged a fourth larger than trees growing in unfumigated borders.

The planting consisted of 132 orange and grapefruit trees on Cleopatra mandarin and sour orange rootstocks. There was no outstanding difference between varieties or rootstocks with respect to the response to soil fumigation.

The citrus trees were replanted in June 1952 in an area in which six alternate borders had been fumigated with 350 pounds of ethylene dibromide per acre to control parasitic citrus nematodes. An 18- to 20-year-old citrus grove had been removed about 2 years before the soil was fumigated in December 1951.

Trees growing in the fumigated soil showed an average increase in growth of 25 percent over trees in the untreated borders. The increase in growth of the citrus trees in the fumigated plots ranged from 9.3 percent for Valencia orange trees on sour orange rootstock to 49.6 percent for Marrs orange trees on Cleopatra mandarin.

The principal effect of soil fumigation in the Lower Valley field trial is believed to be the control of the citrus nematode, even though other beneficial effects may have occurred. Since the 350-pound per acre dosage of ethylene dibromide was comparatively lighter than the effective dosage reported in other areas, a heavier application of the material might have resulted in an even greater increase in growth.

Because of the known nematocidal effectiveness of the fumigant used, the results of the tests suggest that parasitic citrus nematodes may be the primary cause of slower growth in citrus replants than in the citrus trees first planted on the site.

A new service for Texas dairymen, called Herd Sire Analysis, has been announced by Extension dairy husbandmen R. E. Burleson and A. M. Meekma of Texas A. & M. College. The service is offered to help dairymen in the selection of herd sires.

Cut Brooding Cost in Half!

Side curtains fitted on infrared-lamp brooders can cut the cost of brooding chicks in half, reports the United States Department of Agriculture.

No significant differences in gains and feed-efficiencies between chicks raised in brooders with and without curtains were shown by the test conducted during the normal 11-week brooding period. However, almost 93 percent more electrical energy was required by brooders without side curtains than by those fitted with curtains.

The energy-saving materials used in the experiments were white vinyl plastic, clear vinyl plastic, and 32-gauge aluminum sheeting; all proved about equally effective in reducing production costs. Clear plastic curtains have the added advantage of visibility.

Use of curtains on chick brooders is not new. Previously, it was found that materials like burlap sacking and discarded fabrics did not reduce brooder operating costs significantly and only created fire hazards.

The brooders used in the experiment were of home-made plywood construction, fitted with four 250-watt lamps mounted under a 4 by 4-foot plywood top. Thermostats controlling the lamps were set to maintain the same air temperatures under all brooders in the tests.

Electric Dehorning of Calves

The electric dehorning iron has proved the handiest tool for dehorning calves, says Kenneth Koch, assistant engineer with the Louisiana State University Agricultural Extension Service.

The operation is performed best when the calf is less than 3 weeks old. The cup of the heated iron should be pressed firmly over the horn button for 10 or 15 seconds and should be rotated to give firm contact. The button drops off in a month or so, leaving a smooth, healed surface.

Mr. Koch points out that livestock specialists advise the dehorning of all cattle except those going into show herds. Dehorning reduces losses in the herd from goring and bruising and makes the livestock easier and safer to handle.

Corn Yield Trials in the Lower Valley



During the spring of 1956, corn yield trials were conducted on two soil types at three locations in the Lower Rio Grande Valley of Texas. Thirty-seven corn hybrids and varieties were used in the experiments, including 20 hybrids which had not been grown commercially in the area.

On Harlingen silty clay soil at the H. J. Garrett farm south of San Benito, Texas, 26 of the 27 entries tested yielded more than 100 bushels per acre. Texas 30 produced the highest average yield of 125.3 bushels per acre. Six other hybrids—Watson 211A, Texas 32, Texas 24, Watson 154, Tennessee 90, and DeKalb 910—produced yields of 120 bushels or more.

At Rio Farms, Inc., at Edcouch, Texas, trials were made on a lighter soil of the Willacy series. Texas 30, Texas 32, and

Texas 26 produced the highest average yields of 107.1, 105.6, and 104.1 bushels per acre, respectively.

On Willacy fine sandy loam at the Lower Rio Grande Valley Experiment Station at Weslaco, corn yields were reduced by heavy infestations of the sugar-cane borer. North Carolina 42, Asgrow 103, and North Carolina 27 produced the highest average yields of 85.0, 84.3, and 83.6 bushels per acre, respectively.

The trials were planted at the Weslaco station on February 13, at the Rio Farms on February 21, and at the Garrett farm on February 25. After stands were established, the corn was thinned to a 9-inch spacing in all the trials. Row widths in the trial at the Weslaco station were 38 inches, and the other tests were planted in 40-inch rows.

The experiments were conducted under high levels of fertility, and the corn was well supplied with moisture throughout the growing season. It was necessary to control corn budworms during early season growth in all three trials.

At the Rio Farms, insecticides were applied systematically throughout the season. Heavy infestations of grass mites were controlled with malathion and sulfur in the tests at the Weslaco station. This planting was badly damaged, and grain yields subsequently were reduced by heavy infestations of the sugar-cane borer. Infestations of the sugar-cane borer were moderate to light in the outfield tests. Corn stunt (a disease caused by a virus) was noted in all three tests, but only isolated plants were infected.

Over half of the lamb and mutton produced in the Nation in 1954 went to New York, California, and Massachusetts, reports the United States Department of Agriculture.

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