FARM AND RANCH BULLETIN

Vol. 18, No. 5 May 1963

FULL-TIME COMMERCIAL FARMING IN NORTHEAST TEXAS

Opportunities to raise incomes from full-time commercial farming operations are available in northeast Texas, especially on farms where the livestock enterprise is dominant. Results of a study by the Texas Agricultural Experiment Station show that many of the farms on which crops are the major enterprise could be reorganized effectively into livestock farms. The study is a portion of a larger research project in a 24-county region in northeast Texas.

The area's land resources (cropland and pastureland) are not being utilized fully. Output of forage crops (pasture, hay, and silage) is responsive to such soil treatments as tillage, fertilization, and crop variety improvement. If the land is utilized properly in combination with other resources, rainfall in northeast Texas generally is adequate to bring about a more productive basis for livestock enterprises.

Lack of efficient management probably is the major obstacle to increased incomes on many full-time commercial farms in northeast Texas, but some factors which prohibit substantial gains in incomes are beyond the operators' control. Many factors which limit production on farms — such as lack of land, livestock, equipment, and other capital — are directly related to management. Efficient management helps to overcome other restrictions on productivity.

One-fifth to one-fourth of the cropland on the farms in the study was idle. Of the pastureland, 50 to 80 percent was unimproved; it was not well cleared, was covered with poor-quality grass, and the level of soil fertility was generally low. In most cases, productivity could be increased without heavy expenditures. Livestock production rates in northeast Texas are considerably lower than the state average. To a degree, these rates can be increased through improved management, with little extra expense.

At the time of the study, the average full-time commercial livestock-type farm in the region paid a 5.5-percent return on its capital investment and approximately $2,300 per year to the operator for his labor and management. The average crop-type farm paid less than 5.5 percent interest on investment and nothing to the operator for his effort.

Livestock farms generally have certain advantages over crop farms in northeast Texas. First, labor requirements for livestock enterprises are distributed more evenly over the entire year. Second, in the long run, livestock production improves soil fertility without excessive expenditures. Third, the maintenance and production of livestock are not as highly dependent on farm conditions as is crop output.

The size of the farm business directly affects the level of production and income. Only 59 percent of the time of one man was utilized in productive work on the average farm in the experiment station study. The average livestock farm provided enough employment for only 55 percent of one man's time; however, this type of farm had an income which is considerably higher than other types. With increased size of business, operators engaging in livestock farming can expect substantially higher incomes. This is especially true for farmers who are good business and technical managers.

FEDERAL RESERVE BANK OF DALLAS
DALLAS, TEXAS

More than one-half of the operators interviewed in the study indicated that obtaining control of additional acreage is not a significant problem. Opinions obtained from them indicate that many of the operators have a certain resignation regarding their economic alternatives — some with good economic reason. Moreover, they have a considerable personal preference for farming as a way of life, with perhaps less than commensurate realization of the economic and managerial requirements necessary to yield a satisfactory livelihood.

The relatively low level of education and the restricted variety and level of occupational experience have had a significant influence on the outlook of the farm operators in the study. These characteristics have adversely affected the managerial initiative and operating capacity of these individuals.

Although there is little question that the level of production resources on the average full-time commercial farm in northeast Texas is currently too low to yield a satisfactory income, there may be some question as to which factor of production is most restrictive on increasing incomes. Information in the experiment station study indicates that poor management is a critical problem.

All-Concentrate Feeding Takes Planning

Results of experiments at the Oklahoma State University Fort Reno research station show that all-concentrate rations are feasible for fattening beef cattle, provided the grain is steamrolled or processed so that it forms some of the necessary bulk to replace roughage in the ration. According to Bill Taggart, Livestock Specialist, a carefully balanced supplement must be used to add the nutrients lost when roughage is removed.

The Oklahoma feeding trials show that, as the roughage content of the cattle ration decreases, so does feed consumption. This is an important factor in the cost per hundredweight of gain.

Mr. Taggart says that all-concentrate rations are not recommended for animals just placed on feed. Moreover, such rations are not economical for the farmer who has a large amount of surplus roughage.

Feedlot management is very important when growers use the all-concentrate feeding method. The livestock specialist lists the following management points for cattlemen who want to try the new feeding plan.

1. Gradually work cattle over to the all-concentrate mix by step-reduction in the roughage. Start with a 50 percent roughage mix (cottonseed hulls, for example) and take 4 weeks to reduce this amount gradually until the ration is being fed without roughage.

2. Feed a well-balanced supplement. Calcium and vitamin A both are lacking in all-barley rations and in those based on milo.

3. Plan the all-concentrate feeding program to provide 2½ pounds of grain daily for each 100 pounds the animal weighs. Cattle will need about 7¼ pounds of feed per pound of gain. This amount compares with about 9½ pounds required per pound of gain when livestock are fed normal rations.

Parrot Fever Hard to Fight

Parrot fever, or ornithosis, has been recognized only recently as a major poultry disease, says L. H. Carroll of the School of Veterinary Medicine at Texas A. & M. College. This fact is due to the many difficulties in diagnosing the disease and to the poor understanding of the methods by which it is transmitted. The infection of humans led to diagnosis of the disease. Scientists in France realized that people who contracted it invariably had had some association with parrots or parakeets.

The first occurrence of parrot fever in the United States was noted in 1939, when the family of a poultry farm manager became infected. Several other outbreaks have occurred in various locations, and in every case they were recognized because of the infection of human beings.

Ornithosis may be a very mild subclinical disease, or it may cause severe cases with high mortality losses of birds, says Mr. Carroll. Although the means of transmission of the disease are not well understood, it is known that

migratory birds can harbor the infection. These birds become infected in South and Central America and bring the viral agents of the disease north when they migrate. Outbreaks of parrot fever usually occur during hot, dry summers and are thought to be the result of wild birds coming in close contact with domestic flocks when these intruders obtain water from farm facilities.

The symptoms of the disease are hard to recognize; however, birds will show greenish-yellow droppings and become depressed, and a severe reduction in egg production will result. Effective treatments for parrot fever are available, but early diagnosis of the disease is necessary in order to reduce mortality rates of birds. Mr. Carroll says that the poultryman who fails to discover the disease and treat his flock endangers not only the value of the flock but also his health and that of his family and the processing plant employees.

Vegetable Disease Guide Released

Vegetable diseases seldom can be cured, but they can be controlled by carrying out a planned disease-control program, according to a new publication, *Guide for Reducing Vegetable Disease Losses,* released by the Texas Agricultural Extension Service. Charts showing the most common and troublesome diseases, together with control recommendations, are included in the leaflet.

Copies of the publication, L-583, may be obtained from offices of county agricultural agents or from the Agricultural Information Office, College Station, Texas.

Radiant Energy May Improve Forage Grasses

Improving forage grasses that reproduce by asexual seed may be possible through the use of radiant energy, reports the U. S. Department of Agriculture. Giving these grasses improved qualities has often been difficult, if not impossible, because there is no way to introduce new genetic characteristics into a variety that does not reproduce sexually.

In asexual reproduction, seed development occurs without the normal fertilization process, and all of the offspring are the same as the mother plant. Asexual reproduction occurs in many forage grasses, as well as in some other kinds of plants.

A study of Dallis grass — an important forage grass in the South — was made recently by geneticists of the USDA's Agricultural Research Service in cooperation with the Texas Agricultural Experiment Station. The research results show that true mutations can be induced in this asexual species by exposing the seed to nuclear radiation.

In the study, irradiated seed of common Dallis grass produced plants having wide variations in growth habit and structure, and these variations were passed on uniformly to the next generation. Results of the study show that radiation can produce, for immediate evaluation, a multitude of mutations that otherwise would not be available.

The USDA says that use of artificial mutants thus opens a real possibility of developing superior lines of this species, which now has a low germination rate and other disadvantages. The wide range of heritable changes induced in Dallis grass indicates that radiation may be extremely useful in improving growth characteristics of asexual plant species. USDA scientists caution, however, that this may be difficult to accomplish without seriously reducing the fertility of a species.

Storm Cotton Not Just for Storms

Tight-bolled varieties can be useful to the cotton producer, even if a storm never strikes his field, says the Texas Agricultural Extension Service. Storm-resistant cottons hold the lint and prevent preharvest losses that occur when cotton falls from the plant before picking.

Some of the promising new strains retain their lint relatively undamaged under Texas storm conditions. The test strains — developed

for south Texas by the U. S. Department of Agriculture and the Texas Agricultural Experiment Station — have good pickability and can be harvested with spindle pickers.

Preliminary trials indicate that five strains of stormproof cotton are sufficiently promising to warrant further testing. In total lint yield, the commercial cotton variety had a slightly better average than did storm-resistant strains, but the commercial type lost 16.3 percent of its total lint yield before harvest, compared with losses of 3.3 to 6.9 percent for the test strains.

Storm resistance in cotton results from structural characteristics that produce a boll in which the cotton is held tight. Lint is held in the boll by wrinkles or a sticky substance on the bur wall or by a cup-shaped bur.

Specialists formerly thought that storm-resistant cotton could not be picked successfully with a spindle-type picker. However, test results show that only a small portion of the cotton lint was left in the field. A still smaller amount of the lint would have been lost if the picker had been adjusted for harvesting tight-boll cotton.

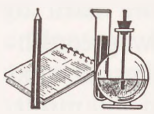
New Gum for Food and Industrial Uses

A new water-soluble gum, made from corn sugar, that has a wide range of potential uses has been developed by the U. S. Department of Agriculture. Using a fermentation process worked out by the USDA, several companies are supplying trial quantities of this experimental gum to industry for further product development research.

The distinctive feature of the new fermentation product is its ability to maintain viscosity, or gumminess, when it is heated or when it comes in contact with salts. Most gum solutions thin out under these conditions.

Several possible uses are suggested by the stable properties of the gum and its solubility in water. It may be used in industrial and food products that contain salts or to thicken foods, pharmaceuticals, and cosmetics, such as lotions and shampoos.

The new product shows promise for use in oil well operations — where salt strata and heat are frequently encountered — to control viscosity in drilling and flooding fluids. Flooding fluids are used to force oil from nearly exhausted wells. In addition, the gum could improve liquids used in fighting forest fires by increasing the retention of these liquids on leaves and other hard-to-wet surfaces.



Recent Research Results

★ A U. S. Department of Agriculture scientist has discovered and identified a species of fungus that captures and kills soil-inhabiting nematodes. The discovery provides additional information about interrelationships among microscopic soil organisms. The finding is an important step in the USDA's broad effort to uncover knowledge that will lead to new biological methods of controlling plant pests.

★ Boll weevils and bollworms can be controlled effectively with a variety of spray nozzle types and sizes, provided adequate amounts of insecticides are applied at opportune times. A study by the Texas Agricultural Experiment Station in 1960 shows no significant differences in insect control or cotton yields in plots sprayed with nozzles ranging in size from X3 to X18. Sprayed plots showed increased yields of about 1,000 pounds to 1,100 pounds of seed cotton over the unsprayed check plots.

★ The use of a 5-percent level of animal feeding fat was favored in a 116-day steer fattening trial at the Texas Agricultural Experiment Substation at El Paso in 1961. Less gain resulted from the use of an 8-percent level of the animal feeding fat. Steers fed rations containing a 5-percent level of crude cottonseed oil made less gain than did those receiving the animal feeding fat and no more gain than steers given rations containing 25 percent cottonseed. Gains and finish of the steers were reduced in lots where the animals were fed a mixture of equal parts of cottonseed hulls and ground alfalfa hay as the roughage portion of the ration. Pelleted rations averaging 55 percent concentrates had an advantage in gain over the loose rations.