DAIRY HERD REPLACEMENT COSTS

East Texas dairy farmers have purchased all or a part of their herd replacements during the rapid expansion of the dairy industry over the past 10 to 12 years, reports the Texas Agricultural Experiment Station. Locally produced replacements have been insufficient to supply the demand. Thus dairymen have had to travel great distances to select replacements or have had to buy from dealers who import them from northern dairy states. Both methods have proved expensive since part of the replacements usually has been unprofitable.

An economic analysis was conducted in the northeastern part of Texas over a 4-year period in order to determine the costs of raising heifer calves from birth to calving time. In this area, the average total cost per head was $148 for Jerseys and $179 for Holsteins. (Since there were significantly fewer animals in the Holstein herd, results for this breed may not be as reliable as the data for the Jersey replacements.)

Data were obtained on 639 animals from 34 dairy farms in Franklin, Hopkins, Upshur, and Wood Counties during 1954-57. Jersey and Jersey crosses accounted for 607 animals in 32 herds, and the remaining animals were in two Holstein herds. During the summer and fall of 1954, 286 calves were born; 353 were dropped during 1955.

Calves born during the summer and fall were usually fed grain and hay until spring grass was available. During years of normal rainfall, no supplemental feeding was provided until fall. Heifers were wintered on hay, grain, and protein supplements. Winter pasture was utilized, and most of the dairymen fed supplemental grain to heifers 3 or 4 weeks prior to freshening.

In the east Texas study, Jersey calves consumed an average of 398 pounds of whole milk and 14 pounds of dry milk replacer at a cost of $24.62 per calf. Holstein calves used 43 pounds of whole milk and 42 pounds of dry milk substitute for a $10.13 average.

A dairy ration comprised the bulk of the grain given the calves. However, limited quantities of commercial calf starter, calf developer, cottonseed products, oats, ground ear corn, ground sorghums, and bran also were fed. The cost of the grain furnished the Jersey calves averaged $41.53 per head; the cost of that consumed by the Holsteins was $71.17.

All of the calves received both grass and legume hay at times during the study. The grass hay was mainly common Bermuda grass and oats, while the major portion of the legume hay was alfalfa and Serecia lespedeza.

In addition to feed costs, other expenses averaged $32.25 per animal. Labor was calculated on the basis of $1 per hour. The costs of veterinary care included brucellosis and blackleg vaccinations, scour medicine, and an occasional call by the veterinarian to examine and treat a sick animal. Breeding costs included expense of the bull.

Most of the dairymen kept one or more bulls for breeding. On the average, each bull was used for 2 years and during the time sired 24 heifer calves to be raised for replacements. The purchase price of the herd bulls usually was...
higher than their sale value. Therefore, depreciation (difference between purchase price and selling price) was added to the feed and labor costs in calculating breeding costs. The breeding cost per calf was determined by dividing the number of heifer calves per sire into the total cost per bull.

In the east Texas study, the cost of raising Jersey replacements, excluding pasture costs, ranged from a low of $90 per animal to a high of $130, with an average of $113.63. If the estimated pasture costs are added, the total cost of a Jersey replacement would be $148. On the same basis, the average total cost of a Holstein replacement would be approximately $179.

**Cattle Like Shade**

Research at the University of California indicates that additional cattle gains may be obtained by the use of shade, points out U. D. Thompson, Extension Animal Husbandman with the Texas Agricultural Extension Service.

Animals lose appetite and reduce feed intake when body temperature rises (usually at an air temperature of 75° to 80° Fahrenheit for European breeds and 95° Fahrenheit for Indian breeds). Gains naturally are affected.

"Brush arbors" proved to be one of the best shade materials in the California studies. Shade made from hay or brush breaks direct sun rays and allows air to circulate.

For best results, shades should be 16 to 20 feet wide, 10 to 12 feet high, and the necessary length to provide for the number of animals that are to use them. The research indicates that a total of 60 square feet per head of cattle usually is required.

Mr. Thompson advises running the shades north and south so that the sun will cover the entire area for at least part of each day. This improves sanitary conditions and is preferable to an east-west setting, even though it permits more heat radiation.

Shade over water tanks reduces the water temperature 2° to 3° Fahrenheit. This cover should run east and west and should not be large enough to allow cattle to stand near the tank for regular shade.

Mr. Thompson encourages cattlemen who do not have shade trees to consider building portable hay or brush arbors. These arbors may be constructed on logs or other material for skids and moved wherever needed.

**Harvesting Radioactive Fall-Out**

A recent United States Department of Agriculture report points out that accidental contamination and fall-out from enemy atomic or hydrogen bombs are potential dangers. Radioactive contamination has been "harvested" on experimental areas at the Department's Research Center at Beltsville, Maryland. USDA engineers and soil scientists are trying to find effective methods of removing radioactive fall-out from agricultural land if such removal should become necessary.

None of the methods used to shield against or aid removal of soil contamination from fall-out completely prevented radioactive isotopes from reaching the soil. Raking and removing heavy and medium mulch layers — the method which proved best — cleaned up nearly all of the radioactivity from the test plots. Cutting and removing sod proved fairly effective. Mowing and collecting growing crops were less effective.

The USDA reports that experiments are now under way to test the decontaminating ability of emulsified asphalt and other soil treatments on bare surface soil affected by simulated fall-out.

**State Fair Visitors Tested on Poultry Preferences**

A survey was conducted among 2,000 visitors at the 1957 State Fair of Texas to test consumer preferences for fryers with different degrees of yellow skin, cut up by different methods, and wrapped with different colors of cellophane. The consumers were also asked to select one of two turkeys which showed difference in conformation and to select the grade of eggs which they generally used at home.

According to the Texas Agricultural Experiment Station, the following conclusions were reached from the tests.

1. Consumers prefer broiler chickens with either medium yellow or dark yellow skins.
Apparently the skin color of chickens now being offered for sale comes close to meeting the preference of most Texas consumers.

2. Whole chickens cut up into 10 or 13 pieces are preferred over the 6-piece pack usually offered for sale.

3. Consumers are predominantly in favor of the conventional cellophane overwrap now used to wrap cut-up chicken packs.

4. No strong preference exists for turkeys with either a long keel or a short keel with a slightly wider breast if both are of equal quality.

5. Almost 40 percent of the consumers who participated in the tests at the State Fair generally use eggs of U. S. Grade B quality or lower (assuming that they could properly associate the eggs they use with the models of broken-out eggs representing USDA grades).

Bitterweed Control

During the past several years, the Texas Agricultural Experiment Station has developed methods for the successful control of bitterweed, according to Dr. O. E. Sperry, Professor with the Range and Forestry Department of Texas A. & M. College.

Bitterweed, a poisonous range plant, presents a serious management problem on large areas of the State’s range land. Numerous cases of sheep poisoning have occurred, especially in the Edwards Plateau region. Some cattle losses also have been attributed to bitterweed poisoning. Most poisoning occurs in the winter and early spring before green range forage is available.

Experimental tests during 1949-51 obtained a satisfactory kill of bitterweed through the use of ground equipment; however, attempts to control the plant by aerial application of chemicals were unsuccessful. In 1958, very satisfactory control on all test plots that had a pound or more of 2,4-D applied was obtained with the use of both aerial and ground equipment.

Dr. Sperry points out that the greatest rates of kill were on the sites having the highest soil moisture at the time of spraying. In addition to the experimental spraying, an estimated 10,000 to 15,000 acres of bitterweed were treated in 1958. Since rainfall was sufficient to create satisfactory growing conditions, a good kill on most of the treated areas resulted.

Information on chemical weed control may be obtained from local county agricultural agents.

Why Keep Records?
They help producers —

Cull out low producers and increase net income.

Feed grain according to production and save money.

Select cows whose calves will be good herd replacements.

Electronic "Mammie"

An electronic “mammie” for newborn calves is one of the latest machine-age inventions, reports the New Mexico State University. The machine — called a nursette — mixes, warms, and dispenses the formula automatically. It actually nurses the calf as much like a mother cow as is mechanically possible. The manufacturer claims that calves fed by the new machine will gain much faster than those fed with pails.

The electronic calf feeder is a small, relatively simple machine with a capacity of 12 cups of dry milk replacer calf food. One filling of the machine will feed one calf for 3 days, or three calves for a 24-hour period.
By adjusting the water level in the machine’s mixing bowl, the ratio of milk replacer powder to water can be varied according to the formula desired. Any good quality, free-flowing milk replacer calf food can be used. Medication, such as antibiotics, can be added to the solution by placing the desired quantity in a special passage which leads to the mixing bowl.

**Seed-Potato Cutter**

An experimental seed-potato cutter that slices tubers of assorted sizes into six pieces of uniform size and shape at the rate of 15,000 pieces an hour has been designed by George W. French, a United States Department of Agriculture engineer.

Mr. French says that a single operator hand-feeding a commercial machine based on the experimental model can equal the output of four to five workers cutting tubers by hand. Tests have shown that an operator can easily feed the cutter at a rate which will provide enough seed in an hour to plant 1 acre of potatoes, depending on row and seed-piece spacings. The cutter will slice potatoes ranging in size from 7 ounces to 13 ounces.

The experimental seed-potato cutter is 27 inches long, 26 inches wide, and 30½ inches high. The weight of the unit, including a one-third horsepower motor, is 145 pounds. For efficient use of the machine, conveyors are needed to carry tubers to the operator and seed pieces from the cutter to bags or bulk boxes.

**"Hot-Rod" Tractors**

Tractors with a power take-off speed of 1,000 revolutions per minute may be available soon, according to the New Mexico Agricultural Extension Service. For the past 35 years, the standard for power take-off drives has been 540 rpm.

Changes in machinery design and other improvements in manufacturing have convinced engineers that a higher speed take-off is desirable for tractors. The greater speed should be particularly helpful in operating such units as irrigation pumps and electric generators.

Standard specifications for the new speed unit have been approved by the American Society of Agricultural Engineers. Manufacturers are likely to include the change in their new models and make conversion units to adapt the new equipment to the standard 540 rpm machines. According to the New Mexico Extension Service, some reductions in manufacturing costs also may be possible.

**New Brucellosis Testing Method for Range Cattle**

A new method for improving the testing of range cattle for brucellosis has been approved for use beginning this summer in the western cattle states, according to the United States Department of Agriculture. In addition to being one of the Nation’s major costly livestock diseases, brucellosis is also a public health hazard; contact with infected animals or animal products can cause undulant fever in human beings.

For several years, dairymen have had a test (the milk ring test) of comparable convenience. This method has enabled dairy producers to make more rapid progress than beef producers toward the national goal of brucellosis eradication.

The new system for brucellosis testing provides an inexpensive, convenient way of screening beef herds for brucellosis. The procedure consists of taking a blood test of dry and cull cows on the way to or during commercial slaughter, rather than testing the animals on the range.

Each animal is tagged with a thin plastic tag to identify her state, county, and herd of origin. When reactors (infected cattle) are found, the herd of origin can be traced quickly and steps taken to eliminate infection from the herd.

The new method is expected to help range states maintain modified-certified-brucellosis-area status more easily. (A modified-certified-brucellosis area is one in which not more than 1 percent of the animals and not more that 5 percent of the herds are infected with the disease.) Certification is for a period of 3 years.