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THE BIG ONE

Beef is the largest single source of income for U.S. farmers, according to the Statistical Reporting Service. Receipts from a record slaughter reached \$10.4 billion in 1966, making beef our number 1 cash commodity.

In order to attain this lead position, the industry has grown steadily since World War II. Keeping pace with the thriving postwar economy and a 40-percent boom in population, the volume of beef output has grown at an average annual rate of over 4 percent. Last year, production reached an all-time high of 19.7 billion pounds, which was double the 1946 figure.

This growth has meant changes within the beef industry. In the case of the composition of the cattle population, dairy cattle accounted for only a fifth of the cattle inventory at the beginning of this year, compared with about 50 percent two decades ago. Meanwhile, beef cattle numbers doubled and comprised nearly 80 percent of the inventory.

Substantial changes also have occurred in the makeup of the beef produced. Output of steer beef has about doubled since World War II, and its proportion of the total has ranged mainly between 55 and 60 percent. Production of heifer beef has more than quadrupled during the past 20 years, with its proportion of the total about doubling in recent years to reach a level of around one-fifth.

As numbers of beef cattle have continued to increase and those of dairy animals have de-

clined, heifer calves have increasingly become destined for the feedlot rather than the milk barn or for use as veal. The sharp reduction in veal output underscores this trend.

The average volume of cow beef has changed very little in the past 20 years. Despite this long-range plateau, however, production has fluctuated to some degree from year to year as a result of weather conditions, feed costs, and calf prices, as well as shifts in the rate of decline in dairy animals. With the increases for steer and heifer beef, output of cow beef has decreased from 40 percent of the total to only 20 percent.

The SRS says that the demand by consumers for higher quality meat is the key to many of the changes experienced by the cattle industry. Cattle producers have met this demand by sharply increasing the production of fed beef. In order to accomplish this objective, substantial changes have been made in the past 20 years. The task of raising the quality of the Nation's beef output has been accomplished primarily through feedlot operations. Production of fed beef has nearly quadrupled in the postwar years, accounting for most of the gain in total beef output during this period. Twenty years ago, fed beef comprised slightly more than one-third of the country's beef production; in 1966, it accounted for about two-thirds of the total.

The three top grades — Prime, Choice, and Good — make up the bulk of fed beef production. U.S. cattlemen produced about 1.5 mil-

lion tons of Choice and Prime grade beef in 1946; Americans ate over 5.0 million tons of these grades in 1966. With two-thirds of the beef being fattened off the range, the production of Choice beef has tripled, approaching 50 percent of total output in recent years.

The volume of Good grade beef doubled by the late fifties, when its share of the output rose to over 27 percent. This proportion subsequently declined, however, and has remained at about 18 percent for the past several years. Production of Prime grade beef also has decreased slightly relative to total output. This grade accounted for about 4 percent of the total last year, compared with 5 to 6 percent for the 1946-48 period. Grades of Standard and below, which represented nearly one-half of the production immediately after World War II, account for about 30 percent of the total beef output.

Open Road Is Only Classroom For Many Migratory Children



Many of the Nation's 140,000 migratory children were not enrolled in school when it began this fall, points out the Economic Research Service.

About 50,000 of these youngsters will be on the road from October through May, traveling with migrant parents from one farm job to another. Some of the other 90,000 children may have missed the first few weeks of school because they had not returned to home base after following the crops all summer. The ERS says that no other group of American children have fewer schooling opportunities and a lower educational level than these migrant children.

About half of all migratory households have children under 14 years of age, totaling about a quarter of a million youngsters. Of these, the ones who suffer most from inadequate schooling belong to the one out of five families who take their children with them as they pursue seasonal farm work. Schooling for many of these migrant children is part-time, at best.

While they are on the road, many of the older children become part of the hired farm labor force; others serve as daytime babysitters for their younger brothers and sisters. The ERS states that in many cases, the parents have neither the interest nor the ability to help educate their children, and local authorities are often reluctant to enforce truancy laws for migrant boys and girls.

Following the crops may mean traveling a distance of 1,000 or more miles from home. The farther away the job, the more likely it is that the migratory family head will take the children along.

Poultry Virus Identified

The virus that causes acute avian leukosis, or Marek's disease in poultry, has been grown in a laboratory and examined under an electron microscope, according to Dr. Keyvan Nazerian, Microbiologist with the Agricultural Research Service of the U.S. Department of Agriculture. The discovery agrees with findings by British researchers that Marek's disease is caused by a herpetic virus. The herpes group of viruses is unrelated to the virus group involved in lymphomatosis, another cancerlike poultry disease.

In recent years, Marek's disease has cost poultrymen millions of dollars in losses of young chickens. Although some of the symptoms of Marek's disease are the same as those of lymphomatosis, indications are that the two are separate diseases. Lymphomatosis, a chronic form that strikes older birds, and the acute Marek's disease are not known to affect human beings.

Cotton "Shortfall" Announced

The U.S. Department of Agriculture has announced that the upland cotton "shortfall" (the amount by which estimated requirements for upland cotton for domestic use and export during the 1967-68 marketing year exceed the 1967 production of such cotton) is placed at 5.6 million bales. This determination for the 1967-68 marketing year (which began August 1) was made in accordance with the provisions

of Section 404 of the Food and Agriculture Act of 1965. Upland cotton requirements for domestic use and export during the 1967-68 marketing year currently are estimated to be 13.7 million bales, and the 1967 crop of upland cotton in the United States is indicated, as of September 1, at 8.1 million bales.

The shortfall may be revised later in the year if there are changes in estimated requirements or production. In accordance with provisions of Section 404, the USDA will make available for unrestricted use at current market prices a quantity of cotton equal to the shortfall. The cotton will be offered for sale in such a manner that market prices would not be affected unduly.

Ultralow-Volume Sprayer for Controlling Horn Flies

U.S. Department of Agriculture scientists have developed an ultralow-volume sprayer that automatically applies an insecticide to cattle to protect them from horn flies. The experimental sprayer can dispense from 1 to 5 milliliters (about one-thirtieth to one-sixth of an ounce) of spray accurately, consistently, and precisely. Work on the sprayer was conducted at the USDA's Livestock Insect Laboratory at Kerrville, Texas.

Horn flies cause heavy economic losses to cattle producers, especially in the South and Southwest. These small bloodsucking pests irritate cattle and adversely affect their vitality. Large numbers of horn flies can result in a 10-to 20-percent decline in milk production of dairy cattle and can lower weight gains of beef cattle as much as one-half pound a day.

The experimental sprayer consistently applies a very low volume of spray, even when the cattle move rapidly and follow each other closely. The sprayer does not startle the cattle. It uses very small amounts of insecticide, thereby reducing treatment costs.

The heart of the new ultralow-volume sprayer is a measuring and control device that regulates the amount of spray forced through the nozzle and onto the animal. A single nozzle emits a band of spray approximately 1 foot

wide from the withers (the ridge between the shoulder bones) to the loin on one side of the animal.

Cattle moving through the passageway of the sprayer activate the system by pushing a lever. Spraying a cow requires less than 1 second, and the spray cuts off automatically before the animal leaves the passageway. The sprayer is completely portable and requires no electrical outlets; adjustments in the amounts of spray can be made easily.

The USDA researchers have completed 5 months of field studies with the ultralow-volume sprayer. Two dairy herds were treated with 2-percent and 1-percent ciodrin at the rate of 1 milliliter per animal after each milking. Complete control of horn flies was obtained on the treated cattle, while untreated animals nearby had 500 to 1,000 horn flies each.

The second year of field testing is under way, together with tests to determine application rates for and effectiveness of various insecticides. Tests also are being conducted to determine if residues of certain insecticides appear in milk from animals treated with the ultralow-volume sprayer.

Boll Weevil Campaign



The 1967 phase of a cooperative campaign to halt the westward spread of the boll weevil, a major cotton pest, began September 5 in the Texas High Plains, as well as in the Presidio area of Texas and in adjoining parts of Mexico, announced the U.S. Department of Agriculture. The campaign was started in 1964, with multiple treatment of 290,000 acres near Lubbock, Texas. As a result of the control program and effective in-season control by producers, the treatment area in the High Plains has been reduced to about 80,000 acres this year. The USDA's Agricultural Research Service is cooperating in the program with the Plains Cotton Growers, Inc., Texas A&M University, the Texas State Department of Agriculture, and the Mexican Government.

This year's treatments involve the use of undiluted malathion or guthion applied by aircraft at the rate of 1 pint or less per acre. These low-volume treatments will be made at regular intervals until cold weather halts boll weevil activity. The purpose of the treatments is to stop reproduction of the weevils and to keep the pests from achieving a firm diapause state — the metabolic rest stage that allows the insect to survive cold weather and a period without food.

Beetle Is Carrier of Salmonella

The dermestid beetle can be a carrier of *Salmonella*, reports the U.S. Department of Agriculture. *Salmonella* is a genus of bacteria that is frequently associated with various types of food poisoning, accompanied by gastrointestinal inflammation. Despite elaborate precautions taken by industry, the bacteria appear sporadically in processed foods and feeds.

The USDA says that tests of dermestid beetles which were collected at one location revealed that crushed larvae placed on a culture medium were all positive for the *Salmonella* bacteria. Adult beetles that were infected externally were found to carry an internal infection also.

Entomologists with the USDA's Agricultural Research Service speculate that in a plant infested with these beetles, it would be possible for the insects to carry the *Salmonella* organism from infected areas into clean areas, including holding or packer bins. Moreover, products that previously had been pasteurized or sterilized could be infected. Rats, birds, and even human beings can be carriers of *Salmonella* organisms.

The ARS entomologists say that controlling the beetle infestation, and thus breaking this chain of transmission, would be of tremendous importance to the food and feed industries. They point out, however, that their present findings are preliminary. The specialists are continuing their observations in order to obtain sound data upon which they hope to be able to base positive recommendations to the food and feed industries.

Corn Off the Cob

Americans eat the grain equivalent of more than a pound of corn per capita each week in corn products, points out the Statistical Reporting Service. This amount is the almost unnoticed corn in our diets — the corn syrup, starch, prepared cereals, and all other processed foods made from corn. Each year we consume over 32 pounds of food products made from corn, which is equal to about 56 pounds of corn as grain. Increased use in recent years is largely the result of more corn sugar and syrup in our diets.

Futures Trading Volume Breaks Previous Record

The volume of trading in agricultural commodities on regulated futures markets in the Nation advanced to an all-time high in the fiscal year ended June 30, 1967. For the fifth successive year, commodity trading exceeded the record set in each of the previous fiscal years, according to the U.S. Department of Agriculture. Futures trading in the 15 commodities regulated by the Commodity Exchange Authority increased 17 percent to reach a total of 16.9 million transactions, valued at \$75 billion.

Corn was the leading commodity on U.S. futures markets during the 1967 fiscal year. The volume traded — 13.0 billion bushels — was more than double that of the preceding year and was an all-time high. In wheat futures, the volume of trading on all markets was 10.4 billion bushels, or almost 75 percent larger than in fiscal 1966. Soybeans — the leader in recent years — declined in volume to 9.5 billion bushels but ranked third among regulated commodities traded. Other grains with an increased volume of trading during fiscal 1967 were oats and grain sorghums. The volume of rye was much lower than in 1966.

Less than 45 percent of all 4-H Club members live on farms, reports Texas A&M University. Of the remainder, 33 percent reside in rural areas, and the rest live in towns and cities with populations over 2,500 residents.