

FARM AND RANCH BULLETIN

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CENTENNIAL OF AGRICULTURE

May 15 marks the 100th anniversary of the United States Department of Agriculture. The Centennial of Agriculture begins officially on this date with a World Food Forum in Washington, D. C., and Centennial activities will continue throughout the remainder of the current year, with events ranging from the local to the international level.

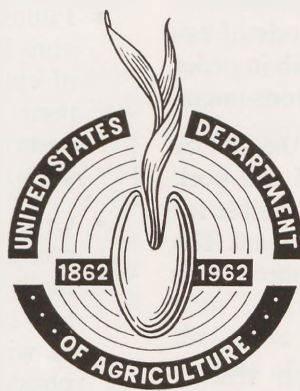
Business, industry, and civic and other groups will join with farmers and farm organizations in the observance. For this celebration, the focus is being placed on the role of agriculture and the farmers in our national economy, our living standards, and our relationship to other countries.

President Lincoln signed the bill creating the Department of Agriculture on May 15, 1862. Since that time, agriculture has achieved one of the Nation's most impressive production records in comparison with other industries. In 1862, one farmer produced food and fiber for 5 people; today, he produces enough for 26.

Agriculture is one of the largest industries in the United States, according to the USDA. Its assets exceed \$206 billion, and its annual cash sales total about \$34 billion. More than 7 million people are employed on the Nation's farms and ranches; 4 out of every 10 jobs in private employment are in agriculture or related areas. Farmers and their families have a buying power

of \$40 billion to \$41 billion annually. They use nearly one-half as much steel as the automobile and truck industry and more petroleum products than any other industry. In addition, farmers are major purchasers of rubber, chemicals, electricity, and countless other products.

United States agriculture is also international; this country is the world's largest exporter of farm products. One out of every 6 acres harvested in the United States produces food and fiber for shipment abroad. Largely because of agriculture, our food and other farm products are helping to relieve hunger and to promote economic growth in the newly developing countries of the world.



Growth Through Agricultural Progress

Research by government and industry is continually improving plants and animals, providing better management of soil and water, discovering new uses for farm products, and devising new and better methods of marketing, transporting, storing, and merchandising farm commodities. Educational services quickly carry the new knowledge to farmers and nonfarmers alike.

Centennial dinners in Washington, D. C., and throughout the country will begin the observance on May 15. A World Food Forum, to be held in Washington on May 15-17, will present a vital world food program in which speakers from many nations will participate.

Field days will be held at agricultural laboratories, experiment stations, and watershed protection and flood prevention projects, as well as on farms and ranches, throughout the United States during the remainder of 1962. These events will interpret research and service developments and the present relationship of people to agriculture and the resources with which it works — soil, water, grassland, forests, and wildlife.

Centennial planning chairmen in individual counties are coordinating local programs and events. Many observances will emphasize the centennial of the land-grant colleges and universities, which have worked cooperatively with the United States Department of Agriculture since their founding.

Source of Lamb Flavor

Lamb meat gets its characteristic flavor from the fat — probably from minor constituents called carbonyls — according to the United States Department of Agriculture. Continuing research to isolate and identify these flavor components may point the way to methods of enhancing or modifying the taste of lamb in order to increase its acceptance by more consumers.

A lamb flavor study conducted by the USDA confirms previous findings with beef and pork that fat contains the compounds responsible for the characteristic flavors of different meats. The lean contributes a flavor that apparently is common to all meats.

Dry-land Crop Rotations on the Southern High Plains of Texas

Dry-land crop rotation studies, consisting of 25 treatments, were conducted at the Texas Agricultural Experiment Substation No. 8, at Lubbock, during 1914-40; and a modified study of 11 treatments was continued through 1949. Results of these studies show that —

- Continuous cotton produces better economic returns than any of the other cropping systems.
- Cotton in rotation with grain sorghums produces slightly less than cotton grown continuously.

- Higher average output of continuous cotton and continuous grain sorghums during 1941-49 than in 1914-40 suggests no serious effect on soil productivity.
- Chemical evaluation of soil samples collected in 1928 indicates a greater depletion of nitrogen from soils under continuous grain sorghums than under continuous cotton.
- In general, total rainfall may limit outturns of cotton and grain sorghums; but date of planting, rainfall distribution, and frost dates are almost equally important in determining yields.
- Grain sorghums are affected more by moisture distribution than is cotton.
- Climatic factors have a greater influence on crop production than fertilization and crop rotation procedures. This fact suggests more fruitful results from efforts to conserve moisture and control erosion than from procedures to improve soil fertility.
- Fallow, green manure or barnyard manure has some beneficial effects on yields of cotton and grain sorghums. However, their use is not justified because of the costs of material and application, together with loss of alternate production years.
- Crop yields are not the only factors to consider in evaluating rotations for dry-land farming areas. Other pertinent factors include distribution of labor, control of wind and water erosion, influence of physical properties of the soil, reduced risk of crop losses, and better control of diseases, weeds, and insects.

Cathode Rays Kill Insects In Stored Wheat

A further step toward the effective use of radiant energy for the control of insects infesting stored wheat is described in a recent report of the United States Department of Agriculture.

In laboratory tests conducted by the USDA's Agricultural Marketing Service, adult weevils exposed to high-voltage cathode rays of 100,000 r.e.p. (roentgen equivalent physical)

were killed instantly. In additional tests, adult rice weevils irradiated at 20,000 to 30,000 r.e.p. died within a week, without reproducing. When exposed to 10,000 r.e.p., the weevils lived 7 or 8 weeks; however, nearly all of them failed to reproduce.

Control weevils, which were not exposed, lived 6 to 8 months. Weevil eggs were quite susceptible to damage; a dosage of 10,000 roentgens prevented eggs from hatching.

New Linseed Oil Emulsion Paints



Linseed oil emulsion paints have the high protective values of conventional linseed oil paints and the rapid drying and convenience of water-based paints, according to the United States Department of Agriculture. These new exterior surface paints — developed in a USDA-industry program to expand the market for flaxseed — adhere to chalky surfaces, dry quickly, resist blistering, and may be washed from brushes or rollers with water.

The fast-drying, blister-resisting characteristics of the new linseed emulsion paints result from their porous film, which permits water vapor to escape from the paint. The paints can be recoated within 30 to 60 minutes after the first application. Emulsifying linseed oil does not impair its ability to cling to old, chalky paint surfaces; yet the linseed emulsion can be thinned with water.

Poultry Need New Type of Ration

Recent research at Texas A. & M. College indicates that laying hens need starter, developer, and finisher types of ration during the production period, according to Bill Cawley, Assistant Poultry Husbandman with the State Agricultural Extension Service.

At the beginning of the laying period, the birds used in the Texas A. & M. tests were fed an 18-percent protein ration, which was gradually reduced as the production period progressed. This practice increases the size of eggs which are produced early in the laying period of the young pullets. Later in the period,

when the eggs are ordinarily larger and are bringing optimum prices, this practice reduces egg size. Both the rate of production and feed efficiency were maintained at a comparatively high level by following this practice.

The Texas A. & M. study also shows that starting birds on the higher protein level and gradually lowering the level as the laying period progresses will result in a lower feed cost per dozen 24-ounce eggs. During the tests, feed costs per dozen 24-ounce eggs was lowered to 10.64 cents.

Mr. Cawley points out that considerable research will be necessary in order to determine the exact composition of the diet that will result in maximum performance, at a minimum cost, for a particular variety of bird in a specific environment.

Pasture Partial Substitute for Dry Lot

The combination of dry-lot feeding and grain-pasture grazing is better for fattening steers under conditions in the South than dry-lot feeding alone, according to results of experiments by the United States Department of Agriculture. The combination feeding program results in lower feed costs and equal or better weight gains and market grades.

In one of the more successful combinations, steers were fattened in a dry lot for 76 days and then transferred to oat pasture for 71 days. The average daily gain was 2.4 pounds, compared with 2.1 pounds for steers kept in the dry lot the entire time. Estimated feed costs per 100 pounds of gain were \$20.25 for the steers fed and grazed and \$24 for those kept in the dry lot. The average slaughter grade for both groups was Good.

The dry-lot feed consisted of 70 percent ground snapped corn, 10 percent cottonseed meal, and 20 percent Coastal Bermuda grass. Each of the steers grazing oats was fed about 10 pounds of ground snapped corn daily.

Cattle which were started on pasture and then switched to dry-lot feeding also made good progress. One group of steers grazed oat pasture for 112 days and then was kept in the dry lot for 35 days. The other group spent 98 days in rye pasture and then was kept in the

dry lot for 49 days. Both groups received Coastal Bermuda grass hay while they were on pasture.

The average daily gain of steers in both groups was 2.4 pounds, and all of the animals graded Good. Feed costs were approximately \$18.50 per 100 pounds of gain for steers that had grazed oats and \$22 per 100 pounds for those that had grazed rye.

Oats furnished better grazing than rye in the studies. However, USDA researchers suggest an oat-rye crop rotation system for pastures rather than continuous oat plantings, inasmuch as rotation planting reduces the likelihood of plant diseases ruining the oats. In all of the experiments, cattle utilized the complete growth of forage in the pastures, leaving no grain to be harvested.

Pallet-Box Handling of Oranges Cuts Costs

Handling of oranges in pallet boxes — using forklift-equipped tractors in the grove and forklift trucks at the packing house — reduces operating costs and results in minimum injury to the fruit, according to the United States Department of Agriculture. This method is faster and less expensive than the traditional method of handling, in 2-bushel field boxes. The handler of an annual volume of 200,000 field boxes could save an estimated \$9,640 by using the pallet-box system.

Turkey Diseases Major Problem

The Texas turkey industry has suffered some serious setbacks because of diseases, points out Dr. C. F. Meinecke of the Texas A. & M. College of Veterinary Medicine. Flockowners face the challenge of keeping their birds healthy, as disease outbreaks can be financially disastrous.

The major diseases affecting the State's turkey industry are the Salmonella infections and lymphomatosis. Of the Salmonella infections, pullorum has been reduced to a relatively low level.

On the other hand, typhoid and paratyphoid are taking over entire areas to the extent that

turkeys can no longer be raised successfully. Although antibiotics can control these diseases in a salvage operation, flockowners must decide whether they are content with merely controlling the diseases or whether they think it feasible to start a pullorum testing program to reduce the incidence of the outbreaks. The history of pullorum testing shows that flockowners need not suffer the losses incurred from fowl typhoid or paratyphoid, according to Dr. Meinecke.

Lymphomatosis, commonly called leucosis, is a relatively new problem facing turkey breeders. Indications are that this disease could be eliminated by selection of nonsusceptible breeders.



Recent Research Results

★ Tests with 3,4-dichloropropionilide (DPA) herbicide were conducted at the Rice-Pasture Experiment Station at Beaumont, Texas, in 1960-61. The studies indicate that 3 pounds of active material per acre combined with 8 gallons of water for aircraft application or 10 to 40 gallons of water for ground sprayer application will control barnyard grass, millet, purple stem, baronet grass, and crab grass. According to the Texas Agricultural Experiment Station, the best time to apply the chemical is when most of the grass is in the one- to three-leaf stage.

★ Where soil tests have indicated a need, use of lime has proved profitable in grain sorghum silage production. Tests over a 2-year period indicate that 1 ton of lime per acre has resulted in the most profitable return per dollar invested, according to the Texas Agricultural Experiment Station. The use of magnesium in combination with lime, either as dolomite or as magnesium sulfate, has resulted in some increase in yields.

★ When used as a soil treatment, Di-Syston was effective in controlling green bugs on spring-planted barley, points out the Texas Agricultural Experiment Station. The use of the insecticide substantially increased grain yields.