

# FARM AND RANCH BULLETIN

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## OLD TRADE LEARNS NEW TRICKS

The first food processor probably was a caveman who learned to sun-dry his fish and meat, according to the Economic Research Service of the U.S. Department of Agriculture. Ever since that time, the caveman's descendants have been improving the old methods and discovering new ones. The know-how gained through the years is a very valuable asset today in the preservation of our food.

Napoleon Bonaparte is credited with introducing the first canned food. In the early 1800's, he offered a reward for a new method whereby food could be preserved for his armies. At that time, the first canning of food was begun.

As recently as a decade ago, U.S. canners processed only 550 different foods. Today, approximately 2,200 canneries throughout the country produce about 1,200 different canned foods, with an annual volume of more than 21 billion pounds. The 1963 pack of canned foods totaled about 760 million cases, or more than 26 billion containers.

HTST (high temperature, short time) preservation has been gaining favor with the Nation's food processors for a decade. Another popular innovation in canning is the aseptic method, in which the food and cans are sterilized separately. According to the ERS, this process maintains high-quality food at a low cost. Hydrostatic preservation of food — a process used in Europe for some time — was introduced recently in the United States. In this method, filled cans or bottles are controlled

under heat and pressure as they move up and down through towers. Dehydrocanning is another successful innovation in food preservation. This process involves the removal of half of the moisture content of the food before it is canned.

The frozen-food industry came into being around the end of World War II. This thriving industry now processes more than 12 billion pounds of food annually. The most recent gains in frozen-food preservation have been in vegetables, poultry, concentrates, and prepared foods. A survey made in 1963 showed that 59 percent of the families in the United States purchased frozen vegetables; 57 percent, orange concentrate; 66 percent, poultry pies; 36 percent, poultry parts; 27 percent, dinners; and 19 percent, fish sticks.

Dehydrofreezing is another new food process that is gaining headway. A low-temperature, quick-freezing process, this method uses nitrogen with temperatures ranging downward to  $-320^{\circ}$  Fahrenheit. The ERS says that if the price of nitrogen drops below the present levels of 3 to 4 cents per pound, dehydrofreezing can be adapted to a wider range of foods than those which are now quick-frozen by this method. Included in the list of foods which are currently processed by dehydrofreezing are melons, avocados, mushrooms, and seafoods.

Irradiation is a new method that is rising on the food-preserving horizon. During the past 2 years, the U.S. Food and Drug Administration has approved irradiation for cured bacon,

potatoes, and wheat. Another innovation that is "waiting in the wings" is the superpower tube for microwave cooking.

Other segments of food marketing also are advancing, points out the ERS. Food handling has come in for its share of new ideas — from the piping of syrups to the shooting of pulverized foods through pneumatic tubes.

Finally, food packaging has experienced many rapid advances that go hand in hand with food processing, such as tab-pull and pull-strip openers and plastic lids for cans. In addition, there are new container materials, including paper, fiberboard, laminated plastic and foil, and plastic film. These materials necessitate the use of newly designed machines.

### Cut Fire Insurance Rates



Rural citizens may qualify for reduced fire insurance rates by the creation of a fire prevention district, says Reagan Brown, Extension Sociologist at Texas A&M University. Mr. Brown emphasizes that such a district

must be approved by the State Board of Insurance. After a fire prevention district is established, it becomes a political subdivision of the state. The district then has full authority to lease, own, maintain, operate, and provide fire engines, fire stations, and other equipment for the prevention and extinguishment of fires within the district.

Moreover, a fire prevention district may enter into contracts with other districts, including incorporated cities or towns, for reciprocal operations or for facilities and services that would be mutually beneficial to the districts. The specialist lists the following steps for creation of a fire prevention district within a county.

1. A petition must be presented to the county judge. It must be signed by not less than 100 qualified voters who own taxable real estate property within the proposed district or by a majority of voters when there are fewer than 100 voters within the proposed district.

2. The petition must contain the signed agreement of at least two petitioners obligating themselves to pay costs (not to exceed \$150) incidental to the formation of the district, costs of publication notices, and election costs.

3. The petition must be filed in the Commissioners Court for the purpose of a hearing.

4. A called election should be submitted as a single proposition to the qualified voters living in the proposed district. In fixing the boundaries of a district, the Commissioners Court shall exclude all incorporated cities, towns, or villages in the event that any one or more of them should fail to cast a majority vote in favor of the district. A tax not to exceed 3 cents on each \$100 valuation would be levied on districts which approved the proposition.

5. Following electoral approval, a court order must be issued.

Mr. Brown says that in certain instances, it appears that potential reduced insurance premiums may offset a tax levy; however, the real savings from rural fire prevention will be realized in terms of property and lives spared when a county gains the ability to fight fires quickly and efficiently. More detailed information on rural fire prevention districts may be obtained from Judge J. C. Davis at the Attorney General's office in Austin, Texas.

### Wells Not Contaminated With Pesticides

Farm wells used for human drinking water have not been found to be contaminated with pesticides, reports Leo G. K. Iverson, a scientist with the Agricultural Research Service of the U.S. Department of Agriculture. Analyses of hundreds of water samples reveal that neither deep nor shallow wells are being contaminated with pesticides. On the other hand, ponds and catch basins that collect runoff water from treated fields show minute but measurable amounts of pesticide residues at certain times of the year and under certain conditions. For example, in a study area at Greenville, Mississippi, measurable residues were found only immediately after heavy rains in the spring and fall.

The USDA's program to monitor pesticide levels in crops, soil, and water was started in 1964 and is now being carried out at 55 test sites throughout the United States. The results given by Mr. Iverson are part of a long-range program to monitor the pesticide content in America's farm water supply.

## Cows May Need More Phosphorus

Beef cattle producers should give careful consideration to supplying phosphorus for their herds, states U. D. Thompson, Extension Animal Husbandman at Texas A&M University. Dry pasture forage is highly deficient in phosphorus. This condition is now widespread in Texas. Practical methods for supplying the mineral to range cattle include adding soluble phosphorus to drinking water and placing phosphorous supplements in mineral feeders.

When the water supply for cattle can be controlled, the addition of phosphorus to the water may be the most satisfactory method. Monosodium phosphate can be added to water troughs by hand or by automatic dispensers which add the desired amount of mineral solution to a given amount of water.

If the mineral is added by hand, recommendations generally call for one-fourth of an ounce of monosodium phosphate to each 8 gallons of water, or one-fourth ounce per head daily. A stock solution of 2½ pounds of phosphate per gallon of water (or 100 pounds to 40 gallons of water) is recommended when an automatic dispenser is used. This machine automatically proportions the mineral to the water.

Sheltered mineral feeders provide protection from wind and rain and thereby lessen waste of the material. The weathervane-type feeder is satisfactory if it is kept level and treated with a rust preventive. Placement of the feeding trough from 12 to 18 inches above the ground will allow the calves to have free access to the mineral. The feeding box should be divided, with salt in one compartment and additional minerals in the other.

When the pasture is highly deficient in phosphorus, a mixture of one part salt and two parts

steamed bonemeal (by weight) is recommended for self-feeding of calves. Bonemeal without salt is recommended in saline areas, such as sections of the Gulf Coast. When salt is fed in mixtures to control protein intake, bonemeal should be fed alone, according to Mr. Thompson.

Additional information on phosphorus and other mineral requirements of livestock may be obtained from offices of local county agricultural agents.

## Special Peach Report

The 1967 peach crop in the nine major peach-producing states is expected to be only about one-half the size of the 1966 production, which approached the 5-year (1961-65) average output, according to a special release of the Statistical Reporting Service. Freezing temperatures in mid-March damaged much of the crop in Georgia, North Carolina, and South Carolina.



The special SRS report shows that for the major peach-growing states of the Eleventh Federal Reserve District, prospects are generally favorable in Louisiana for the fourth good peach crop in 5 years. Oklahoma peaches came through both the winter and the bloom period with little or no damage. In Texas, peach prospects are good in the two principal growing areas.

## Supersensitive Wind Gauge

A highly sensitive wind gauge, or anemometer, has been developed for research studies to be conducted by the U.S. Department of Agriculture. Scientists in the USDA's Agricultural Research Service are becoming more and more interested in air motion within the "microclimate"—that portion of the atmosphere which is located directly above the surface of a field. Light winds at the earth's surface cool growing plants, carry carbon dioxide to leaves for use in photosynthesis, and influence efficiency in the use of water for crops. Standard

wind gauges do not record low enough wind speeds to be useful in microclimate studies.

The new wind gauge was perfected at the Water Conservation Laboratory of the ARS in Phoenix, Arizona. The device resembles ordinary anemometers in most ways, but the cups that catch the wind are cone-shaped rather than hemispherical and are constructed of almost weightless plastic. Both features contribute to the sensitivity of the mechanism.

After testing several anemometers of different designs in a wind tunnel, the scientists selected one with cup arms made from polystyrene and with cups molded from thin plastic film. The anemometer is compact, portable, easy to dismantle and clean, and accurate within a wide range of wind speeds. Its sensitivity to wind speeds of less than a tenth of a mile per hour is of prime importance. Several cup assemblies can be mounted on top of each other to measure variations in the movement of different layers of air.

### Aerial Infrared Photography Spots Citrus Insect Infestation

An infestation of the brown soft scale insect in a citrus orchard has been spotted accurately for the first time by the use of aerial infrared photography, reports the U.S. Department of Agriculture. The orchard is located near La Feria in the Lower Rio Grande Valley of Texas. The infestation was discovered by scientists with the USDA's Agricultural Research Service by examination of a color infrared photograph taken from a height of 1,000 feet.

The brown soft scale is a small sucking insect that attacks citrus groves in Texas and Florida. Soft scales secrete large amounts of honeydew, a substance that causes foliage to become heavily coated with a sooty mold. Infested trees deteriorate rapidly.

USDA scientists believe that infrared aerial photography can provide a valuable means of rapidly detecting infested trees in order that control measures, such as spraying, can be initiated promptly to reduce spread of the infestation. The photography should also assist in the detection of citrus blackfly infestations

since blackfly nymphs also secrete honeydew, thereby causing leaves to be covered with a similar type of sooty mold. The blackfly has been eradicated in the United States, but it exists in the Montemoreles citrus area of Mexico, which is near the citrus groves of south Texas.

The United States and Mexico maintain joint surveillance in an attempt to contain the blackfly in Mexico. If the insect should get into Texas, however, infrared photography could help in prompt detection so that control measures could be put into effect immediately.

### Stop Pests Before They Start!



Home gardeners, farmers, campers, and hikers are urged to keep a sharp lookout for any unusual insect damage to crops, ornamentals, or trees. Such damage should be reported immediately to county agricultural agents or to state

or Federal entomologists, according to the Agricultural Research Service of the U.S. Department of Agriculture. The damage could mean that a new foreign pest has sneaked past quarantine barriers or that a native insect is building up to dangerous levels. Early detection often makes it possible to eradicate the pest before it can cause widespread damage and require extensive control efforts.

A nationwide program to "stop pests before they start" is being supported both by the Federal Government and by state governments. In order to demonstrate support of this program, all citizens are urged to help find and stamp out dangerous insect enemies before they cause extensive damage.

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Brad-Lou Della, a Brown Swiss cow owned by Fulcher and Terrell of Stephenville, Texas, has a lifetime production record to date of 114,560 pounds of milk and 4,254 pounds of butterfat in 2,431 days, says Texas A&M University. This quantity is sufficient to supply three glasses of milk per day for the entire population of a town of 1,500 persons for over 6 weeks.