FARM AND RANCH BULLETIN

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# DAIRY BARN DOCTOR

The cow may become a walking medical supply, in addition to furnishing man's best food, if tests prove "protective milk" to be another weapon in the continuous battle against disease, according to a recent article in *The Daricraft Reporter*.

W. E. Petersen, Professor of Dairy Industry at the University of Minnesota, has been conducting studies toward developing protective milk since 1950. If subsequent research measures up to expectations, Dr. Petersen forsees that immunization against certain diseases will be accomplished simply by drinking a glass of milk. Moreover, the discovery may mean a day of relief for many allergy sufferers, including those with hay fever, and may provide a method of relieving, if not eliminating, certain forms of arthritis.

Scientists have been aware of the built-in protection of colostrum milk since 1892. In 1950, it was discovered that a cow's udder is one of the more prolific producers of disease antibodies. (Antibodies are the minute organisms produced to combat and destroy certain disease-causing bacteria and viruses.)

The 1950 discovery paved the way for the work of Dr. Petersen and his colleagues. Tests have been conducted on more than 100 known disease bacteria and viruses. Efforts have been concentrated in two major fields: infant diarrhea and certain forms of arthritis.

The scientists used two groups of eight calves each in early experiments to test the effectiveness of protective milk. Certain disease-carrying bacteria were injected into all of the calves. One group was given protective milk carrying antibodies of the injected bacteria, and the other group received normal milk. None of the calves receiving protective milk showed ill effects from the injected bacteria, whereas seven of the eight calves that did not receive the special milk died.

Dr. Petersen points out that, "Protective milk is not yet ready to be released for commercial production. More work and more testing are necessary to prove its therapeutic feasibility. When this is done, it still must undergo a prolonged testing and trial period under supervision of the medical profession." However, the scientist is optimistic about both the therapeutic value of the milk and the nearness of the time when it will be ready for commercial production.

According to Dr. Petersen, the most effective way to produce the protective antibodies in milk is to infuse the desired antigens into the cow's udder 2 weeks prior to the expected date of freshening. As soon as the milk is suitable for human consumption, it contains an abundance of antibodies against the infused antigen or antigens. ("Antigen" is a collective term describing disease-causing bacteria and viruses.)

Lactating cows also will produce protective milk by the same process of infusing the antigens into the udder. Experiments show that this is a quicker method of producing pro-

FEDERAL RESERVE BANK OF DALLAS

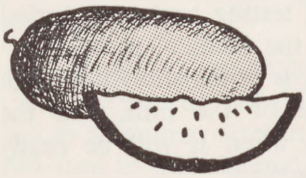
DALLAS, TEXAS

tective milk, since a lactating cow can produce antibodies in a 24-hour period. However, she will not produce antibodies in as great an abundance, nor over as prolonged a period, as will the cow receiving the antigens just before freshening.

One of the more encouraging discoveries in Dr. Petersen's work is that the antibodies in protective milk will survive pasteurization, evaporation, and even drying. He points out that, "To handle this in commercial quantities will require some changes in methods and equipment, but it can be done."

Preliminary tests indicate that, in order to be effective, protective milk must be consumed in quantity amounts. In tests with arthritis, the subjects drank a quart of protective milk each day. One subject sipped the milk throughout the day until the full quart was consumed, while the others each drank a pint in both the morning and the afternoon. No beneficial results were noted from the milk sipped throughout the day, but good results were obtained from the milk taken at the rate of a pint in the morning and afternoon.

## New Watermelon Varieties



Plant breeders of the United States Department of Agriculture recently added two new improved watermelon varieties — Blackstone and Garrisonian — to the large group already available to growers. Both of the newcomers have several characteristics which are expected to appeal to growers, shippers, retailers, and consumers.

The Blackstone variety is expected to fill, in part, the long-standing need for a round, dark green, disease-resistant watermelon to replace the Black Diamond type. The advantages of Blackstone over Black Diamond include early maturity and relative resistance to anthracnose — a serious fungus disease that attacks the leaves, stems, and fruit of watermelons. The new variety also has a slight but marked resistance to fusarium wilt. The melons are exceptionally uniform in size and shape and seldom develop hollow or white hearts. The average weight of Blackstone melons is 28 to 34 pounds.

Garrisonian — the other new variety — equals the excellent eating quality of the Garrison type and has the added advantage of a hard rind, making it suitable for shipment and commercial marketing. The new watermelon is resistant to anthracnose and is more resistant to sunburn than is the Garrison variety. The melons weigh 40 to 60 pounds each and are long and distinctly striped with light and dark green.

Seed of the Blackstone and Garrisonian watermelons are available through commercial sources. The United States Department of Agriculture does *not* have these seed for distribution.

## Early Maturing Corn Hybrid

Texas 38 — a new, early maturing corn hybrid which produces good yields under low-moisture and high-temperature conditions — has been developed under the corn improvement program of the Texas Agricultural Experiment Station.

The new variety is a yellow double-cross, with ears slightly smaller than those of other Texas corn hybrids. The plants usually are 6 to 8 feet tall, with ears 2 to 3 feet above the ground. Texas 38 has a slightly lower shelling percentage and slightly smaller grains than the other yellow Texas hybrids. It usually produces only one ear per plant.

Texas 38 silks 3 to 5 days earlier than the other Texas corn hybrids and may be harvested 1 to 2 weeks earlier. The variety is the most resistant Texas hybrid to rust lodging and stalk breaking. It produces a lower percentage of unsound ears and, because of its early maturity, escapes some of the insect damage suffered by medium-maturing types.

Certified seed of the new corn hybrid will be available to farmers for the 1958 planting season.

## Hybrid Sorghums for Top Yields

Four hybrid sorghums proved far superior to both the popular Martin variety and other widely cultivated sorghums in the 1957 grain sorghum tests at Renner, states Dr. C. L. Lundell, Director of the Texas Research Foundation.

The four top hybrids and their respective grain yields were: AMAK R10 with 3,685 pounds per acre, R.S. 610 with 3,462 pounds, Kx 3010 with 3,308 pounds, and H 6542 with 3,399 pounds. These hybrids consistently produced higher yields than the Martin variety, which yielded 2,441 pounds of grain per acre. All of the hybrids were tested under similar growing conditions.

Seed of the AMAK R10, R.S. 610, and Kx 3010 sorghum varieties are available commercially. H 6542 is an experimental hybrid, and seed of this variety will not be available commercially in time for planting in 1958.

## White-Seeded Sorghum Hybrid

RS 630, the first white-seeded sorghum hybrid released by the Texas Agricultural Experiment Station, has shown a very favorable performance as compared with other sorghum hybrids. Limited quantities of the seed will be available for planting in 1958.

RS 630 is a medium-early grain sorghum hybrid which matures 90 to 100 days after planting. The head is well above the upper leaves and dries readily, thereby permitting harvest soon after the grain is mature. The hybrid is as easily combined as other hybrids and varieties, but the combine cylinder speed should be adjusted properly to prevent cracking of the grain.

In 25 uniform grain sorghum yield trials in nine states in 1956, RS 630 had the highest grain yield of any of the released hybrids in approximately half of the tests.

## New Sesame Varieties

The release of four new varieties of sesame recently was announced jointly by the United States Department of Agriculture and the Texas Agricultural Experiment Station. The varieties include Margo, Blanco, and Dulce — which are shattering types of sesame grown for the specialty seed trade — and Delco, a nonshattering type suitable for oil production.

Margo, Blanco, and Dulce are the first shattering-type sesame varieties to be released formally by Federal or state agencies. They were developed to meet the growing demand for high-quality seed suitable for human consumption. The varieties are widely adapted and are uniform in height and maturity. They require considerable hand labor in harvesting, but the price for the high-quality seed produced in this manner may permit their profitable production by Texas farmers under proper conditions. Yields of the three varieties are high in warm seasons when grown on fertile, well-drained soil with adequate moisture. Seed production of the three varieties is about the same.

Dulce is the first shattering-type sesame released that is resistant to both bacterial leaf spot and Alternaria leaf spot. Its seed characteristics and disease resistance make it a desirable variety for commercial production to enable American growers to meet the competition of high-quality imported seed.

The new nonshattering Delco sesame is adapted to mechanical production and is easier to thresh than Rio, the only other nonshattering sesame in general production in the Southwest. The new variety is slightly earlier in maturity and shorter in plant height than Rio. Delco has produced higher seed yields than Rio under favorable growing conditions but has not appeared to be as drought resistant. The seed of Delco should be acceptable to the oilseed-processing industry, since the oil content has averaged approximately 50 percent.

Blanco is the only one of the four new sesame varieties which has seed stocks adequate for commercial plantings this year. Only a limited supply of foundation seed of the other three varieties is being distributed by the Texas Agricultural Experiment Station; none is available from the United States Department of Agriculture.

## Methoxychlor Dust for Horn Fly Control on Dairy Cows

The United States Department of Agriculture recommends the use of methoxychlor as a dust treatment for control of horn flies on dairy cattle but does not recommend use of the insecticide as a spray applied directly to the animals. Methoxychlor is recommended as a spray for application in dairy barns as a residual treatment for the control of stable flies and houseflies.

The statement concerning methoxychlor dust follows the recent decision of the Food and Drug Administration that (1) no residue of methoxychlor is permitted in milk but (2) there is no objection to the use of the insecticide on dairy cows if it is applied so that no residue occurs in milk.

Studies have shown that when methoxychlor is applied properly as a dust treatment to only the backs of dairy cows, no residue of the insecticide occurs in milk. Entomologists at the Department of Agriculture have found that such a dust treatment provides excellent control of horn flies — one of the more costly pests of dairy cattle.

The entomologists recommend applying 1 tablespoonful of 50 percent methoxychlor powder to each animal, sprinkling it over the back and rubbing it lightly into the hair. The treatment will provide control of horn flies for about 3 weeks but will not control lice, other biting flies, the housefly, or ticks.

## Creep-Feeding Lambs

Creep-feeding lambs is the practice of supplying young lambs with concentrated feed while they are nursing and is used to develop lambs as future breeding animals or to fatten them for market, says J. A. Gray, Extension Animal Husbandman with the Texas Agricultural Extension Service.

He adds that the practice often is used when pastures are poor and ewes are thin. The supplementary feed helps to lighten the drain on the ewes and aids in maintaining or improving the condition of the lambs. Also, the lambs fatten more rapidly and usually bring better prices when marketed. On the other hand, creep-feeding may not pay when ewes and lambs are on good, lush pastures, such as oats, wheat, or grass and clover.

Mr. Gray lists the following advantages of creep-feeding lambs.

1. Ewes remain in better condition.
2. The practice results in added weight and improves the finish of the lambs, often permitting earlier marketing.
3. Lambs tend to be more uniform in size and finish.
4. Shrinkage of the lambs is less at weaning time and when they are shipped directly to the market.
5. Creep-feeding aids in developing future breeding stock.
6. Creep-fed lambs are easier to start on full feed, and the feeding period is shorter.
7. Creep-feeding offers a market for home-grown feeds.

According to the specialist, disadvantages of creep-feeding are that extra labor and equipment are needed; prices may not justify using the practice; large pastures may require more than one creep; and it may be difficult to get older lambs started on feed, especially when pastures are good.

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The development of American-type supermarkets abroad could mark an important advance in exports of some commodities, according to the Foreign Agricultural Service. Yugoslavia is the most recent of several countries adopting the supermarket for food retailing as a result of exhibits at trade fairs. The supermarket in Yugoslavia will include the equipment used in the United States exhibit at the Zagreb Fair held in September 1957.

The FARM AND RANCH BULLETIN is prepared in the Research Department under the direction of J. Z. Rowe, Agricultural Economist.