

# AGRICULTURAL NEWS LETTER

FEDERAL RESERVE BANK OF DALLAS

Vol. 10, No. 5

DALLAS, TEXAS

May 15, 1955

## CONE-TYPE INSECT-SPRAY NOZZLES MORE EFFECTIVE

During the 3-year period 1952-54, tests were conducted by Texas A. & M. College to determine the best type and arrangement of spray nozzles for applying insecticides to control cotton bollworms and boll weevils.

A six-row, rear-mounted tractor sprayer was used in the tests. There were two types of spray nozzles; four nozzle arrangements were compared. One nozzle produced a hollow-cone spray; and the other, a flat, fan-shaped spray pattern.

Equal amounts of active insecticidal ingredients were applied with each of the nozzle arrangements or treatments. The differences in the number of nozzles used for the treatments required that the sizes of the nozzle openings be varied in order to apply uniform amounts of spray material.

The yields of seed cotton obtained in 1954 by using the different types of nozzles and nozzle arrangements are shown in the accompanying chart.

In the 1954 test, insecticides were applied at the rate of 4.5 gallons of spray an acre. The per acre plant population in the seven plots ranged from 28,050 to 31,950, with an average of 29,800 plants per acre. The difference in the plant population of the various plots was not significant.

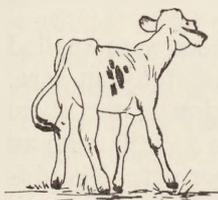
The results of these tests show that the sprayed plots yielded approximately half a bale more per acre than the unsprayed plots. Yields of cotton were higher on plots sprayed with nozzles producing a hollow-cone spray pattern than on plots sprayed with nozzles producing a flat, fan-shaped spray pattern.

EFFECT OF NOZZLE TYPE AND ARRANGEMENT-1954						
CHECK PLOT NO SPRAY	CONE-TYPE NOZZLES				FAN-TYPE NOZZLES	
	ONE NOZZLE PER ROW	TWO NOZZLES PER ROW	THREE NOZZLES PER ROW	NOZZLE SPACED 20' APART ON BOOM	NOZZLE SPACED 20' APART ON BOOM	ONE NOZZLE PER ROW
						
YIELD PER ACRE - POUNDS OF SEED COTTON						
565	1148	1079	1024	1118	968	979
INCREASED YIELD OVER CHECK PLOT - POUNDS OF SEED COTTON						
	583	514	459	553	403	414
						

Also, yields were greater when the insecticide was applied with one hollow-cone spray nozzle directly over the cotton row than when it was applied with two or three hollow-cone spray nozzles to the top and sides of the row of cotton plants.

### Additive for Milk-Replacer Formulas

A discovery by R. E. Leighton of the Texas A. & M. College Dairy Husbandry Department will make it possible for newborn calves to be raised more economically and safely.



An additive for milk-replacer formulas has been developed which provides needed fat and, at the same time, prevents scours. The material is a derivative from a by-product of vegetable-oil refining.

Feeding a calf whole milk costs about 50 cents per day, while the formula with the new antiscour additive costs about 15 cents per day. The change from colostrum milk to the milk-replacer formula can be made abruptly.

Earlier tests using a replacer formula showed that calves gained better and more steadily than when they were raised on whole milk. The replacement formula with the antiscour additive is being tested on calves to determine its effectiveness in promoting growth.

Mr. Leighton's replacement formula now includes 55 pounds of dried skim milk, 35 pounds of dried whey, 10 pounds of antiscour additive, 1 pound of an antibiotic source, and about  $\frac{1}{4}$  pound of stabilized vitamin-A source.

---

*The highest forage yields by Sudan in 3-year tests at the Blackland Experiment Station near Temple were made by Tift, Piper, and Sweet strains.*

*Field counts to determine insect infestation should be the guide for determining whether control measures are needed on insect-infested small grains.*

### Low-Calcium, High-Phosphorous Diets Reduce Milk Fever

Cows fed a low-calcium, high-phosphorous diet a month before freshening are less susceptible to milk fever, says E. E. Anderson, dairy specialist at New Mexico A. & M. College.

Scientists believe that milk fever is caused by a shortage of calcium in an animal's blood stream shortly after calving and that the parathyroid glands help regulate the distribution of calcium between the bones and the blood. A cow needs large amounts of calcium when she is being milked, but, at other times, less calcium is required and the parathyroid glands become inactive.

When a calf is born, there is a heavy and sudden withdrawal of calcium from the cow's blood. Because the glands do not adjust readily to this sudden change, proper regulation of the calcium supply may not take place rapidly enough and the cow may get milk fever. Lowering the amount of calcium in the feed a month prior to freshening forces the glands into action in order to build up calcium in the blood.

Under actual farm conditions, cows were tested in a herd which had been particularly troubled by outbreaks of milk fever. None of the cows fed a low-calcium diet of oat hay, barley, and phosphorous supplement for 30 days before calving showed any symptoms of milk fever. In the herd used as the control group, several of the cows fed a high-calcium alfalfa diet contracted milk fever.

### Tips on Coastal Bermuda

Coastal Bermuda grass offers an excellent opportunity to increase forage production in areas where it is adapted and managed properly, according to E. M. Trew, Exten-

sion pasture specialist at Texas A. & M. College.

The advantages of the taller-growing Coastal Bermuda grass over the Common variety are as follows. Coastal Bermuda —

- ◆ Produces more hay or provides more grazing per acre.
- ◆ Is deeper-rooted and more drought-tolerant.
- ◆ Makes a better hay plant because of longer and larger stems and leaves.
- ◆ Is more resistant to disease.
- ◆ Uses water and fertilizers more efficiently.
- ◆ Is established more quickly under good growing conditions.
- ◆ Provides grazing later in the fall.



planting and not more than 3 feet apart for field-scale plantings.

Hand-drop the sprigs into a shallow furrow, pack the soil around them, cover the sprigs with 2 to 3 inches of soil, and then pack the soil again. Coastal Bermuda sprigs should be planted in moist soil or watered after planting.

Coastal Bermuda gives exceptional response to fertilizer and produces well under "medium fertility" but does not grow satisfactorily on poor soils. Best results are ob-

tained by planting sprigs in a clean seedbed. Coastal Bermuda sprigs should not be planted in sods of Common Bermuda, Dallis, or other established grasses.

## Reseeded Ranges Profitable

The reseeding of ranges should be planned as carefully as a cash crop, states G. O. Hoffman, Extension range specialist of Texas A. & M. College.

Many Texas ranchmen have felt that reseeding is not profitable. Reseeding attempts have failed as a result of planting at the wrong time, improperly prepared seedbeds, lack of seedling protection and weed control, and grazing reseeded pastures before plants become well established.

It is recommended that new grass not be grazed the first year or until the plant crowns are at least 1 inch in diameter. Pastures should be grazed only after new grasses have a firm foothold, and then care should be taken not to overgraze them.

Seeding of adapted grasses gives the quickest response in fields that have been out of cultivation for long periods. The grasses should be planted in rows and packed with a roller or cultipacker. The best time to reseed in west Texas is April, May, or June.

The range specialist advises farmers that, if as much as 15 percent of the native key grasses are still present, deferred grazing is a better and cheaper method of improving pastures than reseeding.

## Plan Now for Grain Harvest

Farmers should plan now for the storage space they will need for grain crops this year, advises W. S. Allen, Extension agricultural engineer of Texas A. & M. College.

The grain producer should consider his acreage and crop prospects and check the availability of storage space at local com-

mercial elevators. Officials of the county Agricultural Stabilization Service may be able to provide information on current storage facilities and the construction of farm storage units.

The United States Department of Agriculture recently announced that the 1955 wheat crop must meet minimum standards of the Federal Food and Drug Administration in order to be eligible for price support loans or for delivery under price support agreements. The standards require that the grain be kept clean and free of rodent and insect damage.

All empty bins should be cleaned and a residual spray applied to walls, floors, and overhead beams. The recommended spray contains 2½ percent DDT or methoxychlor applied at a rate of 2 gallons for each 1,000 square feet of surface area.

In order to reduce contamination of grain by weevils, commercial feed and seed should not be kept in buildings used for grain storage. Junk piles, fence rows, and stacks of wood near the granary should be eliminated, since they may harbor rodents. Traps or poison should be used to control rats and mice.

Check storage bins for cracks and other openings through which grain may be lost or rodents may enter. Weeds should be cleared around the buildings, and the soil should be sterilized.

### Wheat Marketing Cards Unnecessary in Louisiana

Louisiana farmers may harvest and market wheat without incurring penalties under the crop control program, according to the Louisiana Agricultural Stabilization and Conservation Committee.

In Louisiana, most wheat is grown as a spring grazing crop; consequently, last fall the State was declared a noncommercial wheat area.

Wheat grown in Louisiana may be purchased from producers without requiring them to have wheat marketing cards. If they plan to ship wheat outside the State, marketing cards — stamped with the words "Non-commercial Area" — may be obtained from the Agricultural Stabilization Committee.

*Egg producers who are interested in increasing efficiency should have flocks of 1,000 or more hens, according to Ben Wormeli, Extension poultry husbandman at Texas A. & M. College. As the flock size increases, efficiency rises and the cost of producing eggs is reduced.*

### Hybrid Sorghums

The new hybrid grain sorghums are expected to yield 30 to 40 percent more grain, according to specialists at the Texas A. & M. College Experiment Station. The first commercial hybrid grain sorghums produced anywhere in the world will be grown in Texas this year in 1-acre crossing plots on selected farms.

Foundation seed stocks will be distributed to seed growers in 1956, and the new hybrids will be available to farmers for large-scale planting in 1957.

Since 1927, research has been under way on the development of hybrid grain sorghums at the Chillicothe Substation of the Texas Agricultural Experiment Station.

*A recent estimate shows that 14 percent of Texas cropland is irrigated, and from it, comes 35 percent of the State's income from crops. According to a release from Texas A. & M. College, 5,439,603 acres on 33,937 farms located in 225 Texas counties are now under irrigation.*

The *Agricultural News Letter* is prepared in the Research Department under the direction of J. Z. ROWE, Agricultural Economist.