

Cotton Mechanization Needs Revealed

Wanted: simple, accurate machine for applying aqueous ammonia; adequate storage for small users

LITTLE ROCK.—There's plenty of room for improvement in cotton production practices, despite advances made in mechanization, stressed Rex F. Colwick, USDA, State College, Miss., at the recent eighth annual Beltwide Cotton Mechanization Conference sponsored by the National Cotton Council of America.

Emphasizing progress in fertilizer application, Colwick pointed out that better rigs for anhydrous ammonia application, experimental machinery for simultaneous bedding along with four-row application of anhydrous ammonia, and commercially available granular fertilizer applicators which work in conjunction with planters and cultivators have been developed.

On the other hand, Colwick stressed the need for standard equipment capable of simultaneous seedbed preparation and application of anhydrous ammonia, a simple and accurate machine for applying aqueous ammonia, and a standardized applicator that gives less seedbed disturbance in applying granulated fertilizer. In citing some of the problems to be solved, he pointed out those of non-availability and storage of anhydrous ammonia, especially for small users; that most anhydrous ammonia application equipment entails an extra trip through the field in addition to seedbed preparation; granular fertilizer is difficult to place near the seed in planting without disturbing soil under the seed.

High Chemical Costs. Use of herbicides may slash weed control costs in half for many cotton farmers, indicated Harold T. Barr, Louisiana State University. On one-quarter acre test plots at St. Joseph, La., last year's chemical weed control cost less than \$10 an acre. (Hoe labor in the Louisiana-Mississippi Delta area is currently averaging about \$20 per acre.) And the best yield in this test amounted to over 3600 pounds of seed cotton per acre, he added. "The cost of chemicals is still considered to be too high," Dr. Barr contended, "as many farmers are not willing to risk \$8.00 to \$12 per acre and not know whether a crop will be made or not."

Estimated potential yields in 1953 were reduced by approximately 2 million bales, reported H. G. Johnston, National Cotton Council. These losses were due to seedling diseases, wilts, nematodes, blights, root rots, or boll rots, at different stages of crop development.

Despite progress in protecting cotton at planting time, no more than two thirds of the planting seed are properly treated each year, said Dr. Johnston. It is most important, he added, that all planting seed be properly treated since the use of even a small amount of untreated seed may reinfest the remainder of the crop. Noting that seed treatment alone is not always enough to protect seedling against soreshin and blight, he said that spraying or dusting fungicides

into the furrow at planting time looks promising.

Although soil fumigation expense to prevent damage from root knot nematodes is rather high, increased yields are usually sufficient to make this operation profitable, indicated Dr. Johnston.

The greatest cash returns from an effective insect control program will undoubtedly be reflected by increased yields per acre, but there are other benefits that should not be overlooked, he reminded. Thrips, if uncontrolled, can severely stunt the growth of cotton and make it more susceptible to disease. Though the cotton may recover, it will lack uniformity in growth, plant type, fruiting, and maturity—all of which are important to efficient defoliation and mechanical harvesting.

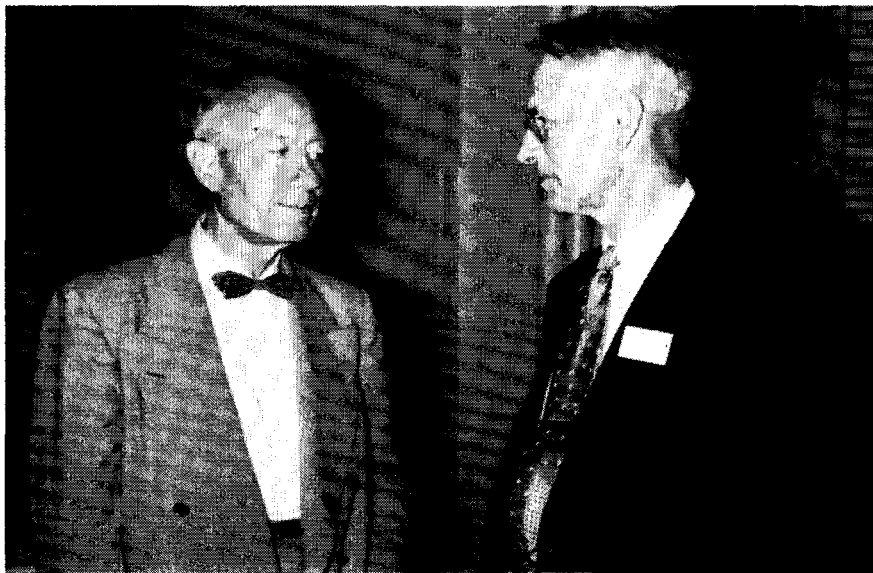
When other pests like the boll weevil, fleahopper, or bollworm destroy large numbers of boll squares, rapid vegetative growth results. Plants are abnormally large, boll-load is unevenly distributed, and plant interlocking is severe. This makes chemical defoliation and mechanical harvesting more difficult, explained Dr. Johnston.

Irrigation Practices. When planning an irrigation system for cotton, its relation to fertilization, cultivation, drainage, insect control, mechanical harvesting, and other practices should be studied carefully, reminded James L. Gattis, University of Arkansas. Irrigation water, he said, permits a farmer to fertilize in accordance with soil tests without the hazard of plants failing to utilize nutrients because of dry weather. Soil tests and maintenance of a proper plant food balance are even more important when irrigation is practiced, than in dry landfarming. Distribution of fertilizer through irrigation water needs more research, he said.

Insect control is a necessity to protect additional bolls obtained through irrigation, Mr. Gattis noted. He cited an instance where one farmer had obtained an exceptionally potential crop through irrigation, only to lose $\frac{1}{4}$ bale per acre because he stopped poisoning too soon and boll weevils damaged the top crop.

The attitude of farmers in the humid region toward cotton irrigation varies greatly, reported W. P. Law, Jr., South Carolina Experiment Station. A survey made late in 1952 covering South Carolina and neighboring states brought out irrigation yield increases from zero to 1.3 bales an acre, with an average increase of a half-bale. One grower who was most opposed to cotton irrigation in 1952 is irrigating his own cotton in 1954, which

F. C. Bishopp, coordinator of the Beltwide Pink Bollworm Project, discusses recent control practices with A. L. Durand, president of the National Cotton Council



would indicate that many of the opinions might be ill-founded and that growers are beginning to realize it.

Experimental results obtained in 1953 at Clemson apparently disprove some of the survey statements, emphasized Mr. Law. The yield-increase was highly profitable, irrigated cotton made far less second growth after defoliation than un-irrigated (an advantage to those who pick with machines), the irrigated cotton was defoliated as successfully as the un-irrigated, and irrigation did not hamper insect or weed control practices.

Attempting to answer the question, "does irrigation pay?", John White of the Arkansas Agricultural Experiment Station cited tests in Arkansas, where irrigation increased cotton yields by an average of 200 pounds of lint per acre, net returns ranged from about \$33 to nearly \$45 more per acre.

"By assuming the 200-pound yield level and the use of a sprinkler system, well water, and electric motor, lint cotton prices could drop to slightly less than 18 cents per pound before irrigation would cease to be profitable," indicated Dr. White. Discussing the cost of putting in an irrigation system, he quoted University of Arkansas economists who estimated the outlay for 100 acres, not including land preparation, at \$76 per acre with a sprinkler system, using well water and electric motor, and \$44 per acre for free surface water.

Industry

Monsanto Shifts Control of Anniston Plant to Organic Div.

Administrative control of the Anniston, Ala., plant of Monsanto will be shifted from the inorganic chemicals division to the organic chemicals division on Sept. 1, it is announced.

The engineering and purchasing activities of the former phosphate division, now the inorganic chemicals division, have been transferred from Anniston to St. Louis. Research activities of the inorganic division will be relocated at St. Louis with certain organic chemical research activities remaining at Anniston. This is in line with the new organization structure adopted early this year.

In the past, an increasing proportion of the Anniston plant's production has been organic chemicals, including Aro-colors, biphenyls, and a rodenticide. Recently the production of calcium carbide and ferrosilicon has been discontinued by Monsanto as a result of economic conditions adversely affecting the production of these products. The production of certain miscellaneous phosphate salts will be relocated and integrated with operations at the Carondelet plant in St. Louis.

Bemis Opens Multiwall Bag Plant in California

Bemis Bro. Bag Co. has started operations at its New Wilmington, Calif., plant for manufacturing multiwall paper shipping sacks. The plant has been under construction since last October. It replaces another plant there which Bemis had operated for 22 years. A 125,000-square-foot plant, the new building provides increased capacity and space for planned future expansion. The plant will reach full capacity, the company expects, by the end of September, when all moving operations are completed.

New Buildings Near Completion For Dow's Ag Research

Three new buildings at Freeport, Tex., for Dow's agricultural research department are expected to be ready for occupancy early next month. The new buildings are the first of a group planned as the permanent headquarters for the entire department.

Two of the new buildings are for poultry; the other is a greenhouse. One of the poultry buildings, 2500 square feet in area, will be used in experimenting with nutritional materials. The other

building, 3500 square feet in area, will be used for research on plants.

The agricultural research department of the Texas division was created in April 1946, and began with only one person, V. H. Melass, a nutritionist. At present the department has a staff of eight, six of whom are qualified scientists in the field of agricultural research. R. W. Colby is head of the department.

Monsanto Plans Phosphate Salts Expansion at 4 Plants; Will Build New Plant in N. J.

Monsanto has announced plans for a major expansion of its capacity for producing phosphate salts and phosphoric acid, including construction of a new plant at Kearny, N. J.

The site selected at Kearny is on a deep water channel of Passaic River and adjacent to the main line of the Pennsylvania Railroad.

Facilities at Kearny will include a unit for converting elemental phosphorus into phosphoric acid and a plant for sodium tripolyphosphate.

Also included in the phosphate expansion are new production facilities for existing plants at Trenton, Mich., St. Louis, Monsanto, Ill., and Long Beach, Calif. A phosphoric acid unit will be

Brea Starts Building Ammonium Phosphate Plant

Brea Chemicals, Inc., has started construction on an ammonium phosphate plant at Brea, Calif. The output will be sold in solution form to western growers, complementing the company's aqua ammonia. Homer Reed, president of Brea, and Jack Tielrooy, development manager, watch the ground-breaking operation. Completion is expected during the latter part of next month. Similar plants are expected to be built by Brea at Brawley and Fresno, Calif.

