FARM MACHINERY PROGRESS REPORT FOR FY 1969-70

Farm machinery extension work in 1969-70 has encompassed work with field crops, horticultural crops, general purpose machines such as fertilizer spreaders and sprayers, safety, and youth work.

Field Crops Mechanization

Minimum- and no-tillage demonstration tests on cotton were conducted in four counties in cooperation with Agronomy Extension in 1969. Results and techniques were discussed with cotton extension agents at three area cotton production conferences, and with cotton agribusiness leaders at the annual meeting of the North Carolina Cotton Promotion Association. Ten similar demonstration tests are underway in 1970.

Continued work with no-tillage production of corn and soybeans included demonstrations of equipment and methods in several locations, and assistance to farmers and agents in adapting conventional equipment for no-til planting.

Performance evaluations with particular respect to uniformity of spread pattern have been conducted on several makes of bulk fertilizer spreaders, in cooperation with the manufacturers of the equipment and fertilizer dealers. Several spreaders in use by fertilizer custom applicators were tested in the field. The results showed that the spread pattern was very poor. As a result of the poor test on the older spreaders in use, several manufacturers supplied new spreaders for testing. Most of the results from these were also poor. This has led to an examination of the basic design by many manufacturers to try to improve the design. We have been able to identify some basic design problems and pass this on to the manufacturers.

Limestone is the hardest material to spread uniformly. Many of our North Carolina soils have a low pH and need liming; therefore we have put an effort into the development of a uniform lime spreader. Considerable progress has been made towards development of a good lime spreading pattern in cooperation with a local manufacturer here in North Carolina.

A series of lime schools (clinics) was held for the lime vendors, and the program was explained. There is a lot of interest in the field from custom applicators (vendors) to do a better job.

A computer program was developed to evaluate the results of these tests and to facilitate spread pattern analysis and design.

On-farm evaluation and refinement of mechanized tobacco harvesting, involving a mechanical harvester and bulk curing, was conducted in 1969. Market acceptability of the tangled-leaf tobacco which resulted was demonstrated by sale on the warehouse floor with no significant difference in price from hand-harvested leaf. Machine design and crop production techniques to accommodate mechanical harvesting were studied, and work is continuing to establish fully mechanized tobacco production as a practical reality.

General farm machinery educational and promotional efforts were continued through the news media, agent training schools, and farm trade shows.

Horticultural Crops Mechanization

A commercial fresh-market cabbage harvester was introduced into western and eastern North Carolina through four demonstrations arranged in cooperation with county extension personnel and the manufacturer. One North Carolina purchased a cabbage harvester as a result of these demonstrations. More thorough evaluation of the harvester is being undertaken in 1970, along with production practices and marketing parameters which have a bearing on mechanization of cabbage harvesting.

A case study of once-over harvesting of pickling cucumbers was completed in cooperation with research personnel of this department, and a report was given at the winter meeting of the American Society of Agricultural Engineers.

An in-depth article on spray equipment and its use in nursery crops was prepared for the North Carolina nurserymen's association publication.

Efforts were begun in 1970 to assist agents and growers with the development and adaptation of equipment for production and harvesting of trellised tomatoes. Reduction of man hours and drudgery involved in harvesting are primary objectives; adaptation of harvesting aids as multi-purpose machines for over-the-row spraying and cultivation is being considered.

Safety

Continued efforts are directed toward improving safety attitudes and practices by users of all types of power equipment. Two television programs on farm machinery safety and lawn mower care and safety were presented, along with other mass-media attempts to promote safety consciousness.

4-H Projects and Activities

Leadership and subject-matter support was provided for the Tractor and Small Engines Projects, Automotive Project, Safety Project, and Bicycle Safety and Care Project. New project manuals for Units I through III of the Bicycle Care and Safety Project were prepared. Tractor operator contests were held at county, district, state, and national levels; an automobile driving contest was held at the state level.

Training and certification of 14-15 year old youth to operate tractors and other hazardous farm equipment was conducted in all counties where a need existed. Approximately 1000 were certified for tractor operation, and over 200 for other types of farm machinery.

A new project book was prepared for the 4-H Electric Project. This project has one of the highest enrollments in North Carolina. In cooperation with the power suppliers in North Carolina, a 4-H Electric Congress was conducted. This is an award for the 4-H members who do an outstanding job in the Electric Project. There were approximately 200 4-H boys and girls who attended this three-day 4-H Electric Congress.