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Progress Report

HORTICULTURAL CROPS

Cucumber mechanization in North Carolina continues to be pursued on two fronts: (1) via commercially available and field proven machines of the destructive once-over type which have become the standard harvesting system in the Midwest; and (2) with the non-destructive, multiple-pick harvester developed at N. C. State and in faltering commercial production by a small company in Ohio. Both types of machines are slow to be accepted due in large part to high capitalization costs and reduced yields, which combine to severely limit or eliminate profitability. The capitalization costs, field capacities, and scale of operation associated with the once-over type are considerably greater than for the multiple-pick type; however, the recoverable yield and potential profit per acre appears to be greater and more dependable with the multiple-pick type. Acceptance and use of the multiple-pick system appears to hinge on manufacturing development and refinement of a field-worthy, durable machine which incorporates efficiency, simplicity, and freedom from mechanical failure. So far no suitable commercial developer has been found to fully commercialize the multiple-pick system.

Processing tomato production and harvesting mechanization continues on a small scale in Robeson County, spearheaded by Horticulture Extension with cooperation from Biological and Agricultural Engineering Extension. Reluctance of growers to acquire specialized land preparation, cultivation, and chemical application equipment vital to production of tomatoes for mechanical harvest has proved to be a stumbling block to complete success of this project.

Comparative evaluations of three types of sprayers for disease and insect control on tomatoes were continued for a second year in a different location, with

results which were consistent with the first year. Information gained from these tests will permit more reliable recommendations on the proper equipment to select and how it should be used for various horticulture crops.

Site preparation equipment and techniques for Frazer fir Christmas tree establishments, worked out by Biological and Agricultural Engineering Extension in cooperation with an equipment manufacturer and grower in 1974, have begun to be adopted in North Carolina. A dealership franchise has been established in western North Carolina, and at least two more growers have purchased the equipment and begun to use the techniques.

SAFETY

Considerable emphasis was given to new OSHA regulations on Roll Over Protective Structures for agricultural tractors, and machine guarding for agricultural machinery, which were drafted and proposed during the year. Public hearings were held on these proposed standards, and agricultural representatives and leaders were encouraged to attend and comment on the proposals. Information and consultation was provided by extension to many who participated in these hearings, with the result that some of the impractical provisions of the draft proposals were eliminated from the final versions.

Safety education in general continued to be emphasized, particularly as related to farm tractors and machinery.

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Projects, demonstrations, and activities were maintained at the existing level in Tractor, Small Engines, Safety, and Bicycle areas. Three new Safety Project manuals covering specific categories of hazards were prepared and published as the first of a series of such publications to constitute new Safety Project literature.