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Progress Report

HORTICULTURAL CROPS MECHANIZATION

Cucumbers

The multiple-pick mechanical harvester was commercially available in limited quantities for the first time in 1973, following prototype evaluation in 1972. Two machines were used by North Carolina growers in 1973. Extension cooperated and assisted in showing these growers how to grow the crop and operate the harvester properly.

A field day was held in June 1973 to demonstrate land preparation and planting techniques and equipment for use with multiple-pick harvesting, plus the harvester itself and its adjustment and use. Consultations were held with several farm machinery manufacturers and dealers to indoctrinate them on the equipment requirements for production of cucumbers for multiple-pick harvesting. Information has been provided to many growers on an individual basis concerning their possible changeover to mechanical harvesting.

Trellised Tomatoes

Several on-farm demonstrations of the harvesting aid-sprayer were held in western North Carolina counties. The machine was displayed at the trellised tomato growers' annual meeting in Asheville. A quotation on a commercially manufactured version of the machine was obtained and made available to potential purchasers at this meeting. Assistance was rendered to growers who built their own harvesting aids from the plans developed by this department in 1972.

Sprayer Evaluation

Use of air sprayers for application of insecticides and fungicides to row crops (tomatoes) and grapes has been under study during the year. Two different air sprayers are currently being used in comparison with a conventional high pressure

sprayer and a check (unsprayed) plot of tomatoes. Recommendations on suitability of the equipment as well as operational procedures is expected to be developed from these tests.

An air sprayer of another type is being evaluated on muscadine grapes by a cooperating grower. This test does not include a comparison with other types of sprayers, but is more observational in nature with the coverage patterns and degree of disease control being the primary rating criteria.

Demonstrations of spraying equipment have been arranged in conjunction with two grape growers' meetings during the year, with a presentation on sprayers at one of the meetings.

Sweet Potatoes

Assistance was provided in conducting three sweet potato schools for growers and agents. A presentation on current state of mechanization, stressing economic considerations, was developed and presented at each school.

Nursery and Ornamentals

Assistance has been rendered on an individual basis to adapt equipment for spraying Christmas trees in western North Carolina. Contacts have been made with manufacturers of tractors and equipment thought to have special potential in the steep terrain of that region, to bring this equipment in for evaluation, and make it available for purchase if suitable.

A presentation on equipment for nursery work was made to the North Carolina Nurserymen's meeting in Raleigh in January.

Tree Fruits

A demonstration of a mechanical pruner was arranged for a grower and extension agent.

Research Planning and Evaluation

Served on Research task force for nursery, ornamental and turf crops, and participated in reviews, response to review reports, etc., on fruit and vegetable task forces.

Safety

As a result of the Occupational Safety and Health Act of 1970 there is an increasing tempo of activity related to safety both off-campus (farm related) and on campus (in-house). Considerable time and effort have been spent in disseminating safety information, holding meetings, etc., in connection with general safety emphasis as well as specific OSHA requirements for farmers and farm-related activities. As a member of the School of Engineering Safety Committee and safety coordinator for the BAE department, much time has been invested in activities related to meeting OSHA requirements on-campus. A specific instance is the procurement and distribution of eye protective devices for staff and students within the department.

4-H

Specialist responsibility was borne throughout the year for four projects (Tractor, Small Engines, Safety, and Bicycle) and two activities (Tractor Operator Contest and Small Engines Demonstration). This included dissemination of information and resource material, correspondence, record judging, preparation of materials, conducting district, state and regional level competition in activities, and coordination of programs with the 4-H staff at both the county and state level.

An in-service training program was conducted for all 4-H agents in the state on 4-H projects and activities within the BAE department, plus traffic safety.

Innovative Crop Production Techniques

Reduced Tillage Tests. Applied research was continued on several approaches to reduced-tillage production of corn, cotton, and peanuts at the Peanut Belt Research Station. Results continued to indicate that fall bedding could greatly reduce spring land preparation with no loss of yield.

Bedding Demonstrations. Partly as a result of the applied research cited above, and partly because of similar interest and activity in other states, there has been a growing awareness on the part of farmers of the potential benefits of bedding as a land preparation technique. A variety of equipment is becoming available to make the beds and to incorporate herbicides and plant on the beds.

To make the growers aware of the equipment and techniques currently available to farm on beds, two field days were held in northeastern North Carolina this year. Various types of equipment were set up and operated to accomplish the necessary functions. Grower interest was high, and more of these field days have been requested.

Miscellaneous

North Carolina Pesticide Law. A training session for extension agents on the North Carolina pesticide law and its implementation was held with participation of the BAE Department. A training manual was prepared in conjunction with this activity.

Modern Farming Short Course. A half-day program of information and equipment demonstration was prepared and presented with participation of all specialists in BAE.

Committees Served On

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1. School of Engineering Safety Committee.
2. Departmental Safety Committee (Chairman).
3. Horticultural Crops Mechanization Committee (Departmental).
4. Extension Commodity Coordinating Committee on Small Fruits.
5. Extension Commodity Coordinating Committee on Vegetable Crops.
6. Extension Long-Range Planning Subcommittees:

   (a) Fruits
   (b) Vegetables
   (c) Ornamentals

7. Christmas Tree Research Committee.
8. Research Task Force on Ornamentals, Nursery, Greenhouse and Turf.
9. Extension Committee to Coordinate Occupational Safety and Health Act of 1970.
10. National Farm Safety Week Committee (Extension).
11. Action Committee, Eastern U.S. 4-H Tractor Operator Contest.
12. PM-48 ASAE Subcommittee on Mechanization of Fruits and Vegetables.
13. EditorialCommittee, "Agricultural Chemicals Manual", School of Agriculture and Life Sciences, March 13, 1973.
14. Committee to Critizue Review Team Report, Task Forces 7 and 8 (Departmental).

Meetings Attended, Papers Presented, and Discussions Led

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1. North Carolina Agricultural Council (Occupational Safety and Health Act of 1970 - Implications for Agriculture) August 7, 1972.
2. N. C. Grape Growers' Meeting, Cleveland County (Organized sprayer demonstrations and exhibit) August 31, 1972.
3. Northeastern District 4-H Agent In-Service Training, October 2, 1972.
4. North Carolina Section ASAE, Raleigh. October 6, 1972.
5. Southwestern District 4-H Agent In-Service Training. October 9, 1972
6. Western District 4-H Agent In-Service Training. October 10, 1972.
7. North Central District 4-H Agent In-Service Training. October 12, 1972.
8. Northwestern District 4-H Agent In-Service Training. October 23, 1972.
9. South Central District 4-H Agents In-Service Training. October 24, 1972.
10. Pickling Cucumber Improvement Committee, Philadelphia, Pa. October 25-27, 1972.
11. Southeastern District 4-H Agent In-Service Training. November 9, 1972.
12. N. C. Pickle Packers' Association (Mechanical Harvesting) November 14, 1972.
13. Trellised Tomato Demonstration and Research Review, Asheville, January 3, 1972.
14. North Carolina Nurserymen's Short Course, N. C. State University, January 7, 8, 9, 1973.
15. North Carolina Yam Commission, Fayetteville, January 17, 1973.
16. North Carolina Grape Growers' Association, Kinston, January 18, 1973.
17. Southeastern Blueberry Council, Inc., Long Creek, N. C., January 25, 1973.
18. Presided at BAE Session, Modern Farming Short Course, February 5, 1973.
19. Annual Tomato Growers' Meeting, Asheville, February 23, 1973. Demonstrated trellised tomato harvesting aid.
20. State Extension Conference, Wilmington, March 5-7, 1973.
21. Action Committee, Eastern Regional U.S. 4-H Tractor and Small Engines Contest, Richmond, Virginia, March 8, 1973.
22. Conference on Plan of Work for 1973-74 (Departmental), March 16, 1973.

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23. Field Day and Demonstrations of Bedding and Related Equipment, Halifax County, March 29, 1973.

24. School of Agriculture and Life Sciences General Faculty Meeting, May 10, 1973.

25. Field Day and Demonstration of Multiple-pick Cucumber Harvester and Related Production Equipment and Techniques. Sampson County, June 25, 1973.

26. Horticultural Crops Field Day, Mountain Horticultural Crops Research Station, August 14, 1973 (Committee for Equipment Display)

27. North Carolina Grape Growers' Meeting, Goldsboro, August 16, 1973. Arranged for equipment display and demonstration.

OTHER

1. General news release through Woody Upchurch (distribution 1, 2, 3, 4). "Animals, Tools Involved in Most Farm Accidents." January 9, 1973.

2. TVA Tour of Western North Carolina. Innovative or Model Agricultural Enterprises. July 31 - August 2, 1973.

3. Prepare and Administer written examination, Eastern Regional U. S. 4-H Tractor and Small Engines Contest. September 1973.