

Ohio Fruit Growers Society
Ohio Vegetable and Small Fruit Research and Development Program
2001 TRIAL REPORT

PROJECT TITLE: Determining the winter and spring protection requirements for plasticulture strawberry production in Ohio

LEADER: NAME Brad Bergefurd, Extension Agent, Horticulture
 ADDRESS 1864 Shyville Road
 CITY STATE ZIP Piketon, Ohio 45133
 Telephone (740) 289-3727
 E-MAIL bergefurd.1@osu.edu

PROJECT COOPERATORS:

Dr. Barclay Poling	Dr. Dick Funt	Dr. Don McFeeters
Small Fruit Specialist	Small Fruit Specialist	Director
North Carolina State University	The Ohio State University	OSU Piketon Research and Extension Centers

REASON FOR THE STUDY:

Ohio growers are adopting the plasticulture strawberry production system that has been pioneered with much grower success in Eastern States such as North Carolina, with some Eastern states reporting strawberry harvests of up to 20,000 pounds per acre. The Plasticulture Strawberry production system is capable of being just as successful for Ohio growers.

However, the plasticulture strawberry production system needs to be modified for our Ohio growing conditions. Without these critical modifications Ohio growers can and have lost hundreds of thousands of dollars in crop revenues and expenses.

Research needs to be done in Ohio to modify the existing Plasticulture strawberry production system developed for East coast states. The system needs to be modified for the fluctuating and rapidly changing late fall, winter and early spring weather fronts and rapid temperature increases and drops experienced under typical Ohio weather conditions.

One of these modifications is the proper selection of and application of appropriate protective materials and structures such as floating row covers, wire hoops and row tunnels, low plastic tunnels (Ziphouses) and organic mulching materials. This experiment is evaluating several different types of protective structures for their thermal and windbreak properties and their effectiveness to protect the high value plasticulture strawberry crop under harsh Ohio growing conditions.

OBJECTIVES:

To develop recommendations for Ohio plasticulture strawberry producers in terms of selecting and applying appropriate protective materials, structures, and combinations of these materials to reduce or eliminate winter and spring temperature injury. This experiment is being conducted at two locations the OSU South Centers Piketon and Hillsboro field research sites.

PROCEDURE:

Canadian grown Chandler cultivar strawberry runner tips were donated by Mitchell Wrenn of Strawberry Hill, Inc. of Bunn, NC and picked up at the Columbus International Airport on August 16, 2001. Runner tips were planted into 50 cell plug trays and placed onto mist benches in the greenhouse on August 17, 2001. Plants were removed from the greenhouse on August 28 and put onto weed fabric under overhead irrigation to harden off for 13 days.

12 inch tall raised beds were spaced 5 foot apart on center. Beds were covered with embossed black plastic mulch with trickle and overhead irrigation. Ryegrass was seeded after plastic was laid for weed control.

Field experiments were planted September 11, 2001 at the Hillsboro research site and planted at the OSU Piketon Research and Extension Center site on September 17, 2001. Both trials were planted using a water wheel setter. Chandler variety strawberry plug plants were planted 12 inches between plants and 12 inches between double rows. Overhead irrigation was immediately turned on after planting to reduce heat stress and transplant shock.

There are four replications per winter protection treatment using a randomized and replicated complete block design. Treatments consist of .9 mil floating row cover, 1.5 mil floating row cover, straw mulch and no treatment for a control. Due to abnormally warm fall temperatures, rowcover treatments were applied on December 21. Treatments will remain in place until bloom begins. Low plastic tunnels (Ziphouses) were installed strictly as non- replicated observation treatments.

Results from this experiment so far suggest that Ohio growers are capable of producing a high quality strawberry plug plant from Canadian grown runner tips in the greenhouse. Growers who grow their own plug plants may save about \$1200 per acre simply by growing their own plug plants. Growing your own plug plants does require some additional management and labor during August but was successful in this trial.

Data will be collected spring 2002 and will include total yield, fruit quality characteristics, plant survival percentage, bloom dates, harvest dates and other observations. Data collected will be statistically analyzed and prepared for publication for use by growers. Results and recommendations from this trial will be presented at the Ohio Fruit and Vegetable Growers

Congress. This field experiment will also be featured at Horticulture Field Days, Berry Schools, growers meetings and will be made available for growers to view and visit on their own for they can make their own observations.