

Project Report Northeast Region SARE Program
Project ~~F98-22~~ FNE98-202

Project Title: Evaluating Raised Beds and Various Mulches for Vegetable Production

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Project Purpose:

The project was proposed to evaluate and demonstrate intensive vegetable practices including raised beds, trickle irrigation, plastic mulch, and vegetative mulch in the production of tomatoes and bell peppers. The plan was that the project would illustrate the effect of these practices on the earliness of the harvest, the quality and the quantity of marketable vegetables produced.

Project Design and implement:

A 3.5 acre field was selected that had fairly uniform soils, was gently sloping, and accessible to water for irrigation. A raised bed machine was obtained on May 7 that would produce the desired bed height and size. When soil conditions were suitable, the beds were formed, trickle tube installed and plastic mulch laid. On part of the project area, four colored plastic mulches (red, silver, yellow, and IRT-green) and a vegetative mulch (barley straw) were installed with the same raised bed and irrigation design. Vegetable transplants were produced on-farm and planted with a mechanical water-wheel transplanter on May 25. Tomatoes were staked and pruned on June 15, 1998.

Project Outreach and Results:

The plan was to have the raised bed machine available for other growers to use as requested. The availability of the machine was announced in the county Extension newsletter, however, only one grower requested the machine and it was used on June 19. Additional outreach was done by Extension by conducting a twilight meeting at the demonstration field on August 25. Six people attended the meeting. The project was described at the Central Maryland Vegetable Growers Meeting on January 22. The session was attended by about 60 growers.

Plot results were both enlightening and disappointing. The bed forming process performed as expected with one exception. The slope of the land and the raised beds concentrated the runoff from two thunderstorms down the row middles. This water action increased soil erosion, ponding at the low point of the row and cutting washouts in the beds at the low point. Other results included the following.

- ▶ Vegetative mulch performed well by controlling weeds equally as well as plastic mulch

- ▶ Management of the row middle is nearly as important as the raised bed in order to control erosion and weed growth.
- ▶ Due to a delay by the manufacturer in delivering the bedding machine and the wet conditions in May (16 consecutive days of rain) the plots were planted later than expected. Therefore, the effect of the treatments on the earliness of the crop could not be observed.
- ▶ The entire block of tomatoes was infected by a disease at the time of first blossom set. All treatments received crop pest control treatments. A large percentage of the fruit were less than marketable quality, therefore yields were not measured.
- ▶ From observations, there were no differences in yield or plant quality among the various mulch treatments.
- ▶ As a result of this work, additional acreage was planted using techniques used in the demonstration. Eggplant 0.5 acres, Squash 1.0 acres, and 2 acres of tomatoes with a combination of plastic and straw. Production of marketable produce on these fields were considered average or above average.
- ▶ Local growers learned about the availability of the SARE program. This led to two growers submitting grant applications for 1999.