

Sustainable Production of Specialty Cut Flowers through Improved Soil Structure

Final Report for FNE99-283

Project Type: Farmer

Funds awarded in 1999: \$2,154.00

Projected End Date: 12/31/2000

Region: Northeast

State: West Virginia

Project Leader:

[Pam West](#)

West Farm

Project Information

Summary:

This project explored the effect of various soil amendments, cover crops, and weed barriers on the production of cut flowers. The project was affected by two unusual growing seasons—1999, which was extremely dry, and 2000, which was unusually wet.

The plan for improving the flower field soil structure included planting a cover crop of hairy vetch and rye planted under mulch hay; sheep were given access to the rye and hay in December. There was some benefit from the manure of the grazing animals, but it was not as great as anticipated.

Four hundred feet of drain tile was installed in the low parts of the field during February, and a deep probe soil test was done in March. One of the observations taken at the time of the soil test was that there was a compaction problem because of foot traffic in the flower field. The foot traffic is associated with intensive crop management that can't be minimized, but mulching rows and rotating were recommended.

Six tons of turkey litter compost were incorporated into the field in March, and, in May, three different soil amendments (two tons each of silica sand and limestone sand and 800 lbs. of perlite) were incorporated into 10-foot beds replicated in four locations throughout the field. There were two test strips under plastic mulch and two under DeWitt weed barrier. The idea was to see which amendment created the greater soil structure, and to also see which plant mulch was better for plant performance. The test crop was zinnia.

Findings: The composted turkey litter, mulch hay, and cover crop was beneficial. The addition of the various sands and perlite was generally not beneficial, although the grower adds that the conditions were unusually difficult during the trial. Zinnias grown in the control plots (no sands or perlite) with plastic mulch were larger, had more marketable blooms, and the largest root mass. Zinnias planted in plastic outperformed all plants in the weed barrier; zinnias planted where perlite was added did better than plants with silica or limestone. The results were unexpected, and

were likely an artifact of drought.

In 2000, the growing season was very wet, and the soil in the perlite and sands areas drained better than the rest of the field. The grower has decided, though, to use cover crops and rotation instead of adding sands and perlite.

Reported November 2000

- [Photos](#)

Cooperators

- [John McCutchen](#)

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Research

Participation Summary

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture or SARE.



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