Cucurbits are big income on small scale

NEWARK, Del. — The Delmarva Peninsula is the nation's major supplier of late-season watermelons, cantaloupes and muskmelons. It also produces a large volume of fresh market cucumbers. These vine crops are an important income source for many farmers, even though total cucurbit acreage averages less than 10 acres per farm.

Production is labor intensive, largely because of the difficulty of weed control and the need for hand harvesting. Full-season weed control is especially difficult since fresh market vine crops are usually planted in wide rows, so plants don't produce a weed-shading canopy.

There are also few herbicides safe for use on cucurbits. As a result, repeated cultivation and hand hoeing have been the major means of controlling weeds in these crops.

According to weed specialist Dave Regehr of the University of Delaware's Agricultural Experiment Station, weeds add from $112 to $200 an acre to the cost of producing melons and cucumbers. This includes $36 for herbicides and $50 for cultivation and hoeing. The remaining losses are due to herbicide injury, reduction in quality and the overall effect of weed competition.

In recent years there's been growing interest in reducing production costs on cucurbits by more intensive management practices which increase yields per acre. Plastic mulch is used to suppress weeds, promote early yields and enhance fruit quality.

Combining plastic mulch with drip irrigation in the plant row makes it possible for growers to water and fertilize as needed with a minimum of labor and waste. Applying water and nutrients this way has the added benefit of not stimulating weed growth between crop rows. The low water pressure and volume needed for drip irrigation make it feasible to irrigate several acres of melons or cucumbers with no more than a household water system.

Research at the Delaware experiment station has shown that drip irrigation tubing can be placed in the soil below the plow layer, permitting normal tillage operations in the overlying soil. This permits the tubing to remain in place from year to year, thus making it cheaper to use. With effective weed control, farmers can crop the land intensively without having to buy new tubing each year.

U. of Delaware Extension vegetable specialist Mike Orzolek uses fluid drill planter to sow pre-germinated vegetable seeds at Georgetown Substation. Plots of tomatoes, peppers, cucumbers and cabbage started this way will be on view at Field Day August 12.

Field worker hoes check plot in herbicide study at U. of Delaware Georgetown Substation where watermelons are being grown on raised beds with drip irrigation under various herbicide treatments.

In a study now in its final year at the University's Georgetown Substation on drip irrigated watermelons grown in raised beds without a plastic mulch, Regehr has found several new herbicides that appear to give effective weed control with little or no crop injury.

One of these materials — Sonalan — may soon be available for commercial use on a limited basis. Another compound, BAS 9052, has given very effective postemergence grass control and appears to be completely safe on all broadleaf crops. Labeling such a compound could have tremendous impact on vegetable production, he says.

Regehr and two Delaware colleagues — vegetable horticulturist Donald J. Fieldhouse and Extension weed specialist Mike Orzolek — recently received a $32,000 grant from the U.S. Department of Agriculture to conduct a 3-year study of cucurbit production systems suitable for use on small farms. What they hope to come up with is a "recipe" for growing melons and fresh market cucumbers that helps farmers combine the best of available cultural practices in a way that minimizes production costs and at the same time maximizes yields.

The study compares the performance of transplanted, direct seeded and fluid-drilled cucurbits with both shallow, conventionally installed and deep, semi-permanently installed trickle irrigation tubing. It also is aimed at determining the feasibility of using plastic mulched, drip irrigated installations for successive crops over two or more growing seasons. And it is intended to compare the economics and efficacy of various weed control systems on such cucurbit plantings.

Visitors to the University of Delaware's upcoming Farm and Home Field Day, Wednesday, August 12, at the Georgetown Substation will have an opportunity to observe research and demonstration plots involved in both cucurbit studies. Activities start at 9:30 a.m.