

Improved Stand, Less Weeds Possible With No-Till Transplanter

ANDY ANDREWS

Lancaster Farming Staff
NEW HOLLAND (Lancaster Co.) — Tomato and other vegetable growers could realize enormous cost and labor savings — in addition to improved soil erosion control — by replacing plastic mulch with a natural mulch.

A method of using no-tilled tomatoes planted into a hairy vetch or rye cover can mean big savings and improved tomato stand and yield, especially for mid- to late varieties, according to Steve Groff, a Holtwood tomato grower.

Groff spoke Monday to about 200 growers at the New Holland Vegetable Day at the Summit Valley Elementary School.

Steve and Cheri Groff operate Cedar Meadow Farm. The past year, Groff used a variety of hairy vetch and rye combinations as cover crops for 1½ acres of tomato transplants. He plans to increase acreage in no-till to eight acres this year.

Also, Groff grew some no-till pumpkins and several other crops at the farm using the cover as a mulch.

Groff used a customized Holland transplanter equipped with a subsurface tiller following an 18-inch straight-bladed coulter package. The tiller and shank are both spring-loaded.

The coulter package opens the soil over top of the killed cover crop. As a result, the natural mulch conserves water and soil and allows the plant to thrive, even in a drought.

The mulch worked best in the mid- to late-season tomatoes. For growers who want an early season tomato, plastic mulch is still necessary.

For growers, labor savings are realized because there is no application and removal of plastic mulch. Also, the natural mulch conserves soil moisture and works to control erosion — especially beneficial if planting on slopes.

Groff said that his farm is "98 percent no-till" for corn and many other crops. Groff said, "Soil, I feel, was meant to be covered, and this prevents the soil from moving."

On May 25 this year, Groff no-tilled Mt. Supreme variety of tomatoes into hairy vetch cover crop. In years past, the Groffs used a combination of fall and spring plowing and planted into bare ground.

In the 1995 experiment, in the no-tilled segment of the test plot, the vetch was killed with herbicide from an overhead sprayer. Then, one plot was rolled and the other mowed.

Using a specially equipped Holland transplanter, four rows of tomatoes were planted directly into the killed vetch and, in another field, rye.

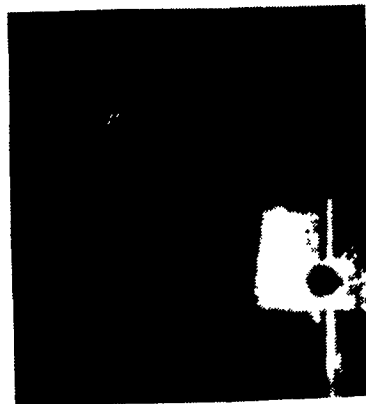
The best results were obtained from the plot that was rolled over the one that was cut, in terms of overall weed control, according to Groff. The vetch was mowed with a flail mower. The mulch decayed faster in this plot but had a few more weeds.

In the rolled plot, the vetch was sprayed with herbicide one day before planting and then rolled simply by letting the depth control roller on the flail mower press the vetch flat. Weed pressure was less in this plot because the mulch remained on the soil longer.

But one benefit from using the hairy vetch and rye combinations of natural mulch included less Col-



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orado potato beetle incidence. Some experts indicate this is because the natural mulch acts as a physical barrier to the maturing adults, keeping them from the plant's leaves.

Also, there is less incidence of early blight in no-till tomatoes. The mulch helps keep weed pressure down. Groff noted that a thicker cover crop would control more weeds.

No-tilling saves plowing, disking, harrowing, and cultivating. It eliminates the use of plastic and adds nitrogen to the soil, according to the Holtwood grower.

The use of a no-till planter added \$10 an acre to the cost, but the total savings amounted to about \$550 per acre, according to Groff.

Other benefits include better soil organic matter and soil tilth.

The seeding date for the cover crop is September, but early October might be OK, according to Groff, if the weather cooperates and the winter is not too severe. Planting should be one month before the average of the first frost date.

In July this year, Groff plans a field day at his farm. He will be demonstrating a drip irrigation attachment on the no-till planter to put a dripline in beside the row. Also, a new way to "crimp" the mulch plant to control it without using burndown herbicides will be examined.

Other plants that could be planted using the no-till method include peppers, eggplant, snap beans, pumpkins ("I had higher yields and much cleaner pumpkins," Groff indicated), melons, and sweet corn.

For growers interested in using the transplanter, contact Joel Myers, the Keystone Soil and Water Conservation Society, (717) 782-3446.

The New Holland Vegetable Day, sponsored by the Eastern



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Lancaster County School District and Penn State Cooperative Extension, featured other programs as well.

that are still unclear. More research is necessary to determine the variations in yields.

Farm Systems Trial

Ken Fager, Penn State farm manager at the Rockspring Research Center, said that in 1993, a system of growing tomatoes using organic methods resulted in higher yields and higher returns.

The farm systems trial examined three different methods of growing tomatoes in several plots at the Penn State Rockspring Research Farm. One way included the conventional methods, using soil tests to look at nutrient needs, and adding nutrients where necessary. Plastic mulch and herbicides to control weeds were used.

Another, an intermediate system, used primarily cultivation for weed control. For cover crops, a grass/legume mixture was used.

A third system, an organic system, used on-site composted dairy manure for nutrient needs. Straw mulch, instead of plastic, was used. Copper sulfate and a biological pesticide control were used.

According to Fager, overall, the organic system in 1993 had the best yields of the three systems. However, in 1995, the other systems had better yields for reasons

Preserving Quality

Also, Tim Elkner, horticulture agent in Lancaster County, indicated that whatever producers can do to keep produce cool will help in preserving quality after harvesting of produce.

Elkner indicated that Pennsylvania produce has an annual value of \$15 billion. Of that, 20 percent — about \$3 billion — is lost because of mishandling of produce and other reasons after harvest.

Producers should realize that harvested plant parts are "still living tissue" and producers should think of them as such. After explaining exactly how produce deteriorates after harvest, Elkner said that "temperature has a tremendous effect on shelf life and storage life of fruits and vegetables."

An increase of temperature in 10-degree increments can have a considerable impact on shelf life.

For optimum quality, producers should consider their market before making decisions regarding shelf life of products. Harvest should occur at optimum maturity (earlier if shipping to auction, later

if at roadside stand) when temperatures outside are coolest (at the "crack of dawn"). Also, producers should handle produce carefully and not overfill containers. Protect harvested produce from the sun, and beware of transportation. Harvest only if you plan to sell it — otherwise, leave it in the field.

Also, don't be afraid to cull some produce. "Don't take down the value of the whole lot over one item," he said.

For those using cold storage, it is important to minimize traffic in the area to keep the temperature consistent.

Also, Bill Troxell of the state vegetable growers association spoke about the benefits of membership in the association. He said a field day will be hosted by the state growers on July 23 at Rockspring.

The next Pennsylvania Vegetable Growers Conference is set Jan. 28-30, 1997 at the Hershey Convention Center.

Also, Robert D. Berghage, assistant professor of horticulture at Penn State, spoke about the Penn State bedding variety trials at Rockspring and at the Landisville Research Farm.

At the Vegetable Day, Berghage provided descriptions of the winners of the All American Award for bedding plants.

NCFC President Urges Focus On Export

WASHINGTON, D.C.—We are entering a more open trading system globally for agriculture, but the fact remains—world trade is still dominated by trade barriers, policies and programs by our competitors that impact the flow of goods, said Wayne Boutwell, president of the National Council of Farmer Cooperatives (NCFC) today.

"We simply must recognize this and be prepared to meet this kind of competition head on."

That was NCFC's goal last year in arguing strongly for adequate funding for key export programs such as the Market Promotion Program (MPP), and Foreign Market Development (FMD) programs and other export pro-

grams, Boutwell said as he addressed farmer cooperative leaders from across the country at the organization's 67th annual meeting here.

NCFC has strongly supported MPP, which has come under attack in both the House and Senate.

"At the same time, MPP has done more to help expand exports across agriculture, especially value-added, than any single program," he said. "It's a documented fact."

Boutwell explained that all agricultural cooperatives—marketing, supply, and farm credit banks—have a vested interest in helping expand exports. Therefore, with cooperatives' continued

support, NCFC hopes to maintain funding for these important export programs.

In looking ahead, Boutwell said this year's driving force will be the Presidential and Congressional elections in November.

"We believe the debate this year will be on a more macro scale," he said. "As a result of this macro debate, we don't see much being done on specific programs beyond the normal appropriations process dealing with the funding of authorized programs. Hopefully, progress can be made on a number of key issues such as clean water, pesticide reform, and safe drinking water. However, it is unlikely that action will be completed in 1996."