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New 80-inch beds may bring higher yields in tomatoes

By Lisa Lieberman

Three years ago, when Aric Barcellos of A-Bar Farms in Los Banos decided to turn some of his 60-inch tomato beds into 80-inch beds, he was looking for easier ways to rotate his tomatoes with melons and cotton, which are also planted on 80-inch beds.

Barcellos wasn't expecting much higher yields since he was planting the same 7,200 plants per acre on his 80-inch beds as he was on his 60-inch beds. But he did get higher yields, which amounted to almost 70 tons per acre on his 80-inch beds, compared to his 60-inch beds, which averaged 55 tons per acre.

Before he began his plantings, Barcellos had been concerned that his tomato plants wouldn't grow large enough to fill in all the space on the 80-inch beds.

"At first we didn't know what would happen," Barcellos said. "But in a spacing like this, the plants have more room to grow so there's more competition to grow bigger."

The results of his 80-inch plantings were so good last year that this year Barcellos is putting 1,100 of his 1,600 tomato acres onto 80-inch beds.

The good thing about the 80-inch plantings was that the plants grew large enough to fill up the beds, but not so large that the vines began spilling into the rows. With the smaller 60-inch plantings, which weren't big enough to contain the plants, the tomato vines spilling into the rows had always been a problem. The vines would get so overgrown that whenever he made tractor passes in the fields, the tires would crush the vines and kill off the fruit, Barcellos said. In order to keep this from happening, Barcellos would do extra tractor passes during the season, trimming off vines that had spilled into the rows so that enough air could get into the tomato plants on the bed and the fruit wouldn't rot.

With the 80-inch beds, Barcellos no longer had to make these additional tractor passes to trim the vines. And, since he had fewer beds per acre, Barcellos was also using less materials in his single drip line fields.

"Conceptually, these 80-inch beds make more sense because you have more planting rotation options and you're using 25 percent less linear feet of plastic in the field," said Scott Stoddard, a University of California Cooperative Extension farm advisor in Madera, who has been experimenting with 80-inch tomato beds for the past year.

In his own trials, Stoddard experimented with double drip lines in the fields, which involved adding more drip tape and higher costs but resulted in 20 percent higher yields than the single drip lines. But because of the extra work and expense involved with double drip lines, Barcellos opted for using single drip lines. He was worried at first that these drip lines wouldn't be able to push the water out far enough from the center of the row to reach the roots of the newly planted transplants. How-

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ever, Barcellos found that if he irrigated his fields in shorter sets more frequently, he could push the water out more horizontally toward the plants' roots.

"We'd push the water and stop it, push it and stop it," Barcellos said.

Instead of putting the water on for 12, 24 or 48 hours, which pushes the water deeper down into the ground, Barcellos would surge water on for three to six hours at a time, which would create a bubble and cause the water to move out more horizontally. When the plants had been rooted for two to three weeks and the water had spread out far enough along the surface past the plants, Barcellos knew he was in good shape.

As the plants grew and the days got hotter, Barcellos increased the duration of the irrigations. From June to August, he was doing up to 10-hour sets every other day.

In total, Barcellos pushed about 23 inches to 30 inches of water per acre on his tomatoes in 100 irrigations during a 140-day season.

The main challenge that Barcellos and other growers are facing now with 80-inch planting beds is that most growers don't have 80-inch harvesters. This means they have to adjust the wheels on their 60- and 66-inch harvesters.

"This is going to be a big issue," Stoddard said. "For one thing, you have to stop the harvester and pull the wheels out, and straddle it over an 80-inch bed instead of a 60-inch or 66-inch bed."

The other problem is that since the cutter bars are only 60 inches wide, the best thing growers can do is to put wings on the ends of the cutters to harvest the tomatoes on wider beds.

Ultimately, though, farmers and processors will be much better off with actual 80-inch harvesters since the standard tomato harvesters don't have wide enough belts to handle all the extra fruit in the wider beds, Barcellos said.

"The canneries usually do the harvesting," Barcellos said. "If they're not going to convert those heads over and have 80-inch machines, then we'll definitely have to get them to slow down."

This year, Barcellos might have even bigger yields to harvest, since he's going to be putting 8,000 plants per acre on about 50 acres of his 80-inch plantings instead of the normal 7,200 plants. It will cost about $44 per acre extra to buy the seed and grow the plants in the greenhouse, but Barcellos said he thinks the extra six to 10 tons per acre he hopes to get will more than offset the cost.

While he looks at the yields, Barcellos will also be looking more closely at water usage.

"We're going to see if more plants are going to use more water. So we'll compare the water from last year to the water we're using this year now that we're planting more plants per acre," Barcellos said.

(Lisa Lieberman is a reporter in Three Rivers. She may be contacted at lisal@thegrid.net.)