

## PILLOW PACK TOMATOES

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Scheduling greenhouse crops can be difficult, especially when a grower wishes to combine tomatoes with pot plants. In the spring of 1971, a grower in western Connecticut began producing tomatoes in soil mix in polyethylene "pillows."

The grower had a unique situation associated with production. The greenhouse was Dutch ridge and furrow and fully open inside. This was no drawback to the production of various crops but limited activities such as soil sterilization within the confines of the greenhouse. He wanted to include tomato production along with poinsettia, lily, pot mum, and bedding plants in his rotation schedule.

He had an established market for vine-ripened greenhouse tomatoes. However, his last crop, grown in ground beds, was plagued with *Verticillium* which limited yields in some of his plantings. To rid the soil of this disease organism, it must be treated. Chemical treatment is best done in July or August. In this instance, it was impractical as his removable benches were to be set up for pot plants and the chemical fumes would cause some injury while the soil might be recontaminated.

After discussion and research, it was decided to set up an initial experiment in his greenhouse using plastic bags filled with a prepared soil mixture. This would allow him to set up his tomato production by mid-February.

PROCEDURE--During the summer the soil mix for the tomatoes was prepared with equal parts of New Milford sandy loam, sphagnum peat moss, and perlite. It was then treated with methyl bromide according to label directions. After Christmas the final soil mixture was prepared according to soil tests, adding 10 lbs. dolomitic limestone, 5 lbs. calcium nitrate, 10 lbs. of 20% superphosphate, 3 tablespoons of borax, and 5 oz. of trace elements per cubic yard of mix. The soil and nutrients were thoroughly mixed with a clean rototiller and placed in a 6 mil green polyethylene bag measuring 12" x 32". The open ends of the bags were stapled closed. Each bag weighed approximately 50-55 pounds. At planting time the removable benches were taken out, the floor covered with a polyethylene sheet, and the filled bags were laid end to end in rows in the greenhouse (figure 1).



Figure 1. Tomatoes grown in pillow packs showing row spacing and string supports. Note plastic covering on floor for weed control.



Figure 2. Cutting a four-inch hole in the pillow pack with a tin can which was cut to provide a sharp cutting edge.

Tomato varieties Tuck Cross, Vegan, and Michigan-Ohio were planted in 4-inch plastic pots and grown in another part of the range. For this experiment, approximately 600 bags were filled with soil and set in place. Planting was scheduled for the end of February with harvest for retail sales from mid-May to August.

Four-inch holes were cut in the plastic bags (figure 2) with a tin can. The bottom half of the plastic pot was removed and the remaining part with the tomato was planted in the bag (figure 3). The top part of the pot remained as a reservoir for water which was applied via the Chapin watering system.

The plants were grown single stem on a string (figure 4).

Fertilizing as well as watering was accomplished through the watering system. Amounts of water



Figure 3. Planting a tomato in a pillow pack.

and fertilizer were adjusted to plant growth. Bi-weekly soil tests were invaluable as the fertilizer program was adjusted as indicated by the test. The plants grew quite well in response to nutritional and watering practices. Some problems of water-logging occurred due to the uneven soil in the bags but in time this was adjusted to eliminate the problem.

The end result of this experiment was the harvest of tomatoes. An average of 15-18 pounds of tomatoes per plant were picked and sold on the retail market. Harvest began about mid-May and continued in bulk through June and July. This was well in time for an early market.

**CONCLUSIONS**--This grower felt that the added costs in handling, time and plastic were compensated by increasing the flexibility of his greenhouse range, allowing him to grow other crops in addition to production of fresh, vine-ripened tomatoes in Connecti-

cut. For this grower, the flexibility and relative ease for growing this crop prompted him to enlarge on pillow pack culture of tomatoes.



Figure 4. Tomato production in pillow packs.