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Each cultural system plot included 3 rows that were 30 feet long with a total of 30 plants within each 3-row plot. Fungicides and insecticides were applied weekly until Sept. 16 with once-over harvest on Oct. 19. All pumpkins were cut from the vine, weighed and graded. Field rots were also counted just before harvest. At harvest, each pumpkin was weighed and length and width measured and handle length and width measured, too.

The IPM Scout

Pumpkin Field Spacing and Fertility Study

Robert J. Dufault, Ahmet Korkmaz, and Brian Ward
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The 1998 pumpkin spacing/fertility trial at Clemson University's Coastal Research and Education Center contrasted nine cultural systems with varying row spacings and nitrogen-phosphorus-potassium fertility. The objective of the study was to determine an ideal spacing and fertility regime that would maximize numbers of marketable pumpkins per acre and pumpkin quality (shape, size, color, weight and density).

The distance between rows was 6, 9, or 12 feet apart with plants spaced 3 feet apart within all rows. Plant populations ranged from as few as 1210 to 2,420 plants/acre. The fertility rates were 2000, 3000, and 4000 lbs of 10-10-10 per acre. All of the fertilizer was applied to the bedded rows before planting. Drip irrigation was installed and all beds were fumigated¹ and mulched with black plastic.

The hybrid variety Tallman was selected because it usually produces a tall, uniform, cylindrical pumpkin that is good for carving. Transplants were seeded in the greenhouse June 23rd and field planted July 9th.

(Continued on page 3.)

Pumpkin Fertility

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After choosing the right cultivar for your market, the next step is setting up the right fertility program to get the maximum marketable fruit set.

Always test your soil to see what you might already have in your soil or what it is lacking. Then talk it over with your extension agent or state specialist. As a general rule, when the crop is grown on sandy or sandy loam soil, 60 to 80 lb. of nitrogen along with 150-200 lb. of phosphorus and potassium are needed. Less fertilizer is needed with heavier soil. As a general rule, the potash level can be cut in half with heavier soils. If the pumpkin crop is grown in rotation with a legume or another green manure crop, a smaller quality of fertilizer is needed.

Nitrogen seems to play a key role in fruit size and number. With low levels of nitrogen, one fruit on a plant checked vegetative growth and further fruit set until seeds were developed within the fruit. When seeds are forming, they are a heavy draw on the nitrogen supply. This can be a serious concern, especially when heavy rains have occurred prior to fruit set, leaching nitrogen from the soil profile. This is also the time when heavy vine growth has occurred and the option of side dressing cannot be considered due to heavy plant foliage.

¹Editor's note: Methyl bromide is not labeled for commercial use on pumpkin.

If you are using drip irrigation, you can easily inject additional amounts of nitrogen through the drip lines and ensure greater fruit quality and higher total marketable yields. If drip irrigation is not an option, you could broadcast calcium nitrate and receive the benefits of the additional nitrogen. This is safe but costly. Do not use ammonia-based nitrogen, such as ammonium nitrate, or you are sure to burn the plants and cause serious plant loss. Having the right amount of fertilizer available to the plant during key periods of growth is essential for a successful crop.

Cultivar Corner

Novartis Seed, Inc. - Rogers Brand has introduced two new pumpkin cultivars for 1999. Contact Curt Pollard, Eastern Business Manager, 912-245-9457.

'RWS 5668' is an extra-large pumpkin with fruit that weigh 30 to 50 pounds. The fruit are deep orange with "heavy, distinct ribbing." The large, strong handles are dark green. The plants have large vines and fruit mature in 105 days.

'RWS 6260-VP' is a small pumpkin, 3 to 5 pounds, with tolerance (but not resistance) to powdery mildew. It "will hold up to powdery mildew until close to maturity." The ribbed fruit are medium orange with long handles. It has a compact vine and matures in 95 days. This cultivar is designed for home gardens and farm markets.

Market Window

Proceedings of the Mid-Atlantic Pumpkin School held in March are available for \$10. Topics include: disease control, new fungicide products, pumpkin pollination and fruit set, insect controls, yield improvements through spacing, fertilizer and irrigation, the costs of pumpkin production, variety updates, update from the Wye Research Center in Maryland on pumpkin research including no-till, post harvest techniques, and crop rotations. Send a check made payable to: N.J. COOPERATIVE EXTENSION, COOK COLLEGE to: Pumpkin Proceedings, Rutgers Cooperative Extension of Gloucester County, 1200 N. Delsea Drive, Clayton, NJ 08312.

Include your full mailing address and phone number on the check or on an insert. This fee will cover the cost of the proceedings and postage. Call 609-863-0110 for more information.

Veldsma & Sons, Inc. markets Halloween and Christmas products and supplies wholesale for direct marketers, farm markets, and gift shops. They stock a large selection of Halloween novelties. Contact them at 160 Andrew Drive, Suite 100, Stockbridge, GA 30281; 1-800-458-7919 or 770 389-8814 (8:30 a.m. to 6:00 p.m.. ET); FAX 770 389-1751.



Ask the Great Pumpkin

Q: Why is seed of Magic Lantern more expensive than other cultivars? Is it worth it?

GP: Right now, Magic Lantern and Merlin are the only large, jack-o-lantern type, powdery mildew resistant cultivars on the market. Seed supplies have been limited and demand has been good. According to the "law" of supply and demand, price of seed will be higher than average.

For growers who must battle powdery mildew most of the growing season or for growers who have had difficulty controlling powdery mildew with Benlate or Bayleton, a powdery mildew-resistant cultivar should increase yields and profits. However, if powdery mildew does not affect your pumpkins until late in the season after fruit is set, then powdery mildew resistance may not be worth the added cost. Try a small planting of Magic Lantern this season and compare its yield under your growing conditions to your favorite cultivar. Better yet, plant two blocks of Magic Lantern and spray one block only half as often for powdery mildew as the other. At the end of the season, see if the money you saved on fungicide sprays more than paid for the extra cost of the seed.

Next issue (July '99): Pollination; Quadris.

Yield and quality of 'Tallman' pumpkins grown using different row spacing and fertility									
Ft. between rows	10-10-10 per acre	Plants/acre	Number per acre				Marketable Pumpkins		
			Market	Cull	Field rots	Total	Wt. (lbs.)	Volume (in ³)	Density (oz/in ³)
6	2000	2420	525	161	807	1493	9.0	473	.30
6	3000	2420	545	141	282	968	7.8	430	.29
6	4000	2420	464	61	484	1009	8.3	466	.28
9	2000	1614	363	309	753	1426	8.3	450	.30
9	3000	1614	377	256	373	1305	7.2	413	.28
9	4000	1614	242	282	605	1130	8.7	494	.28
12	2000	1210	373	50	443	866	10.4	520	.32
12	3000	1210	292	151	484	927	10.4	557	.32
12	4000	1210	282	191	534	1008	9.9	522	.30

Plant spacing did not significantly affect color, shape or volume of the marketable pumpkins. Handle length was shortest with the 12 foot spacing and longer with 6 to 9 foot spacings. Density of the pumpkins tended to be greater at the 12 foot spacing and equal with the closer spacings, yet these differences were rather small. Orange color intensified to a darker orange (more desirable) at the lowest fertility rate (at all spacings) with lighter orange pumpkins at the highest nitrogen rate. The heaviest, densest pumpkins averaged 10.4 lbs, and occurred at the 12' x 3' spacing with 2000 to 3000 pounds 10-10-10/acre. However, in the long run, the greatest number of marketable pumpkins per acre were produced at the 6 foot row spacing with 2000 to 3000 lbs 10-10-10/acre.

Commercially, the greatest number of marketable pumpkins per acre of acceptable weight and quality commands the best profits. With the hybrid cultivar Tallman, a 6-foot row spacing at 2,500 pounds 10-10-10/acre produced the best yield. This spacing/fertility combination also produced the most field rots. It is possible that manually placing the developing fruit on plastic mulch off the bare ground or even placing a "pillow of hay" under the pumpkin may prevent rotting and increase the yield potential of this system. If each pumpkin has a value of \$4 on average, this operation may well be warranted to

increase profit margins.

Editor's note #2: There is a difference of opinion in how much nitrogen pumpkins require. Follow recommendations for your growing area and soil type. Extra nitrogen for tighter spacing may be beneficial.

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