

**SUSCEPTIBILITY OF PUMPKIN EXPERIMENTALS TO PHYTOPHTHORA FRUIT ROT IN PUMPKIN, 1997:** This experiment was undertaken to evaluate an experimental pumpkin with a hard, gourd-like rind (HMX 4696) that seemed to be less susceptible than adjacent squash in an observational study in 1996 (B&C Tests 12:170). Four experimental pumpkins were evaluated which produced mini-sized fruit. The experiment was conducted at the Long Island Horticultural Research Laboratory in Riverhead, NY, in a field (Haven loam soil) where *Phytophthora* fruit rot of pumpkin had developed in 1994 and 1996. Fertilizer (1000 lb/A of 10-10-10) was broadcast over the entire field and incorporated on 15 May. Four-wk-old seedlings were transplanted on 11 Jul at 24-in. plant spacing and 68-in. row spacing. Plots consisted of two rows with seven plants each. A randomized complete block design with five replications was used. A row of yellow summer squash was planted through the center of the field to serve as a source of inoculum. Cucumber beetles were managed by applying Metasystox R (1 qt/A) on 18 Jul and Asana XL (9.6 oz/A) on 31 Jul and 25 Aug. Powdery mildew was controlled by applying Bayleton 50DF (4 oz/A) on 25 Aug and Bravo Ultrex (2.7 lb/A) on 25 Aug, and 5 and 16 Sep. Plants were sidedressed with ammonium nitrate at a rate of 30 lb N/A on 6 Aug. The field was irrigated (approx. 1.0 in.) when soil was dry due to inadequate rainfall on 30 Jun - 2 Jul, 8-11 Jul, 14-17 Jul, 1 Aug, 11-13 Aug, 3-4 Sep, and 8-9 Sep (7 times total). The field was irrigated frequently and often excessively (0.5-2.7 in.) during late Sep and Oct to create conditions favorable for *Phytophthora* fruit rot development by saturating the soil and providing opportunity for splash dispersal from infected fruit. Irrigation dates were 17, 19, 23, 24, 25 Sep; and 2, 7, 9, 14, 15, 16, and 17 Oct. Fruit were examined weekly from 8 Sep through 5 Nov for symptoms of *Phytophthora* fruit rot and other diseases. Fruit were classified as being infected by *Phytophthora* only when sporangia were visible. Two healthy fruit of each experimental were removed from each plot on 22 Oct. They were challenged with inoculum by putting them in enclosed plastic containers, misting them with water, then putting *Phytophthora* sporangia from a naturally infected pumpkin fruit on each one. Fruit that remained asymptomatic were re-challenged on 31 Oct and 5 Nov.

Substantial differences in susceptibility to *Phytophthora* were detected. The two experimentals with hard rinds (HMX 4696 and HMX 5682) were much less susceptible than the other two experimentals tested. Symptoms were first observed on 15 Sep in HMX 4695 and on 22 Sep in HMX 2692, but not until 5 Nov in HMX 4696 and HMX 5682. HMX 4696 and HMX 5682 also appeared to be less susceptible when challenged with inoculum.

Experimental	Fruit with <i>Phytophthora</i> (%)	Healthy fruit (%)	Fruit with <i>Phytophthora</i> rot from inoculation (%)
	15 Sep - 5 Nov *	5 Nov	
HMX 4696 .....	2 b **	97 a	0
HMX 5682 .....	2 b	93 a	33
HMX 4695 .....	25 a	64 b	78
HMX 2692 .....	42 a	50 b	100
P-value	0.0004	0.0001	

\* Total observed with *Phytophthora* over this time period.

\*\* Numbers in a column with a letter in common are not significantly different according to Fisher's Protected LSD (P=0.05).