

SUSCEPTIBILITY OF PUMPKIN VARIETIES AND EXPERIMENTALS TO PHYTOPHTHORA FRUIT ROT, 1998: The objective of this experiment was to re-evaluate four pumpkins, two of which have hard, gourd-like rinds (HMX 4696 and HMX 5682), and were less susceptible than pumpkins with standard rinds when this experiment was conducted in 1997 (B&C Tests 13:175). All pumpkins evaluated produce 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, 1996 and 1997. Fertilizer (1000 lb/A of 10-10-10) was broadcast over the entire field and incorporated on 23 Jun. Seventeen-day-old seedlings were transplanted on 2 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 Asana XL (9.6 oz/A) on 30 Jul, 12 Aug and 21 Aug. Powdery mildew was controlled by applying Bravo WeatherStik (2-2.5 pt/A) + Nova 40W (4 oz/A) on 12 and 21 Aug. Plants were sidedressed with ammonium nitrate at a rate of 30 lb N/A on 5 Aug. Average monthly high and low temperatures (F) were 85/66 in Jul, 86/66 in Aug, 79/61 in Sep, and 65/51 in Oct. Rainfall (in.) was 3.16, 2.28, 3.03, and 2.35 for these months, respectively. The field was irrigated (approx. 1.0 in. water) on 22 Jul, 11 Aug and 25 Aug when soil was dry due to inadequate rainfall. The field was irrigated frequently and often excessively (0.5-1.75 in.) beginning in late Aug 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 31 Aug, 1 Sep, 16 Sep, 24 Oct and 25 Oct. Fruit were examined weekly from 21 Aug through 30 Oct for symptoms of *Phytophthora* fruit rot and other diseases.

Substantial differences in susceptibility to *Phytophthora* were detected. The two pumpkins with hard rinds (HMX 4696 and HMX 5682) were less susceptible than the other two pumpkins with standard rinds. Immature fruit of the hard-rinded pumpkins seemed to be as susceptible as those of standard-rinded pumpkins; however, *Phytophthora* fruit rot is more often a problem late in the growing season when few immature fruit are present. When mature fruit of the hard-rinded pumpkins became infected, sporangial production by the pathogen was greatly reduced, often to the point of not being visible to the unaided eye. Infected tissue looked water-soaked. In contrast, *Phytophthora* infecting fruit with a standard rind usually produced enough sporangia to cover the infected tissue with a white mass. This reduction in inoculum should slow disease development within a field of hard-rinded pumpkins. Significantly more fruit of HMX 5682 still appeared healthy on 23 Oct compared to the other pumpkins.

Experimental/Variety	First symptoms	Fruit with <i>Phytophthora</i> (%)	
		25 Aug – 23 Oct *	Healthy fruit (%)
HMX 5682	18 Sep	12 b **	48.1 a
Lil' Ironsides (HMX 4696)	18 Sep	29 b	20.5 b
Lil' Goblin (HMX 4695)	25 Aug	56 a	3.7 bc
HMX 2692	8 Sep	71 a	0.5 c
P-value		0.0007	0.0006

* 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).