

SENSITIVITY OF *CUCURBITA PEPO* EXPERIMENTALS AND VARIETIES TO PHYTOPHTHORA CROWN ROT AND FRUIT ROT, 1996: The objectives of this experiment were to identify potential sources of resistance and to re-evaluate previously screened material for sensitivity to *Phytophthora capsici* in FL and in NY (Biological and Cultural Tests 9:26, 10:147 and 11:116). Sensitivity was determined in an infested field of Haven loam/Riverhead sandy loam, a well-drained soil, at the Long Island Horticultural Research Laboratory in Riverhead, NY. *Phytophthora* fruit rot had developed on pumpkin in this field in 1994. On 16 Jun 95, 1000 lb/A of 10-10-10 fertilizer was broadcast and incorporated. Seed were planted on 21 Jun. Seedlings were grown in a greenhouse, then acclimated to outdoor conditions for several days before transplanting on 16-17 Jul. There were five replications in a randomized block design. Replication five was nearest the end of the field where soil drainage was slowest and where *Phytophthora* fruit rot was slightly more severe in 1994. Each plot consisted of a row of ten plants spaced 24 in. apart. The spacing between rows was 68 in. Supersett was included as a known susceptible variety for comparison. An observational planting of pumpkin experimental HMX4696 was included next to replication five. Plants were sidedressed with ammonium nitrate (34-0-0) at a rate of 30 lb N/A on 22 Aug. Weeds were controlled by mechanically cultivating and hand-weeding. The field was irrigated (approx. 1.0 in.) on 17 Jul; 27 Aug; 3, 6, and 10 Sep. Powdery mildew was managed by applying Bravo Ultrex (2.7 lb/A) and Benlate (8 oz/A) on 23 Aug and Reach F (4.25 pt/A) on 6 Sep. Cucumber beetles and aphids were managed by applying the following insecticides: Admire 2F (8 oz/100 gal as a preplant drench) on 15 Jul, Metasystox R (1 qt/A) on 23 Aug, and Lannate LV (3 pt/A) on 1 Sep. Average monthly high and low temperatures (F) and total rainfall (in.) were 80, 63, and 4.78 in Jul; 82, 63, and 2.8 in Aug; 75, 58, and 4.74 in Sep, respectively. Fruit were removed from plants when they reached marketable size and left on the ground next to the plants. Plants and fruit (both on plants and detached) were examined periodically for symptoms.

Symptoms were first observed on 25 Sep, 1 wk after 2.7 in. of rain fell over two days. Symptoms were observed in all replications. No symptoms were observed on 27 Sep on Aladdin, Moctezuma, SSXP210, SSXP288, or HMX5729 in replication 1, where disease pressure was lowest. Necrosis of growing tips was the most common stem symptom. Stem symptoms progressed rapidly on Supersett: most affected plants were collapsing by 4 Oct and dead by 11 Oct. Percentage of plants collapsing or dead on 4 Oct was 78% for Supersett; 51% for Zucchini Elite; 0-9% for SSXP210, HMX1708, Moctezuma, and HMX5729; and 15-33% for the other varieties and experimentals. Leaf spots developed on all experimentals and varieties. Supersett and Zucchini Elite were the most susceptible; they did not differ significantly in any of the variables analyzed. Aladdin was the least susceptible; it was the only one with significantly lower incidence of *Phytophthora* fruit rot and stem symptoms compared with Supersett for all six variables in the table. This variety also performed well in 1994 (B&C Tests 10:147) and in 1995 (B&C Tests 11:116). Incidence of *Phytophthora* fruit rot on detached fruit and incidence of stem symptoms was low for SSXP210; however, incidence of fruit rot on plants was not significantly different from Supersett. By 6 Nov, only 4% of 347 fruit of HMX4696 (6 orange and 8 green fruit) had developed symptoms of *Phytophthora* fruit rot. There were questionable symptoms on 13 other fruit.

Variety or experimental	Fruit with <i>Phytophthora</i> fruit rot (%)				Plants with stem symptoms (%)	
	On plants		Detached		27 Sep	Total **
	27 Sep	Total **	27 Sep	Total **		
Aladdin (middle eastern type)	16.7 c*	18.1 d	35.3 c	43.3 de	13.9 e	64.5 c
SSXP210 (grey zucchini)	42.1 abc	56.5 abc	14.9 d	26.7 e	12.0 e	32.4 e
HMX1708 (grey zucchini)	22.5 bc	42.8 bcd	39.2 c	62.8 bc	14.7 de	31.7 e
Moctezuma (grey zucchini)	28.8 bc	34.9 cd	32.9 cd	52.5 cd	26.9 bcde	37.9 de
SSXP211 (striped zucchini)	18.1 c	40.0 bcd	45.4 bc	64.4 bc	25.8 cde	46.7 cde
SSXP288 (striped zucchini)	27.0 bc	37.7 cd	38.3 c	53.0 cd	37.4 bc	66.8 bc
HMX5729 (grey zucchini)	23.3 bc	40.3 bcd	36.6 c	53.0 cd	25.0 cde	43.1 de
Jason (striped zucchini)	20.8 bc	35.8 cd	36.7 c	61.7 bc	36.4 bcd	56.7 cd
Zucchini Elite (zucchini)	46.1 ab	64.9 ab	65.8 a	81.6 a	48.6 ab	87.3 ab
Supersett (yellow crookneck squash)	62.4 a	79.2 a	60.8 ab	74.9 ab	69.7 a	100.0 a
P-value	0.0361	0.0023	0.0008	0.0001	0.0001	0.0001

* Means followed by the same letter in a column are not significantly different according to Fisher's protected LSD.
** Totals are for 27 Sep - 11 Oct.