

**Evaluation of host resistance for control of downy mildew on squash, Kinston 2017.**

The experiment was conducted at the Cunningham Research Station in Kinston, NC (N35°18.331’; W077°34.884’). Plots were single raised beds on 5-ft centers covered with white plastic mulch; rows were 14-ft long with 5-ft fallow borders on each end and non-treated guard rows on each side. The previous year the field was planted with sweetpotato. Squash varieties commonly grown in NC were direct-seeded on 21 Jul (2-ft in-row spacing, 2 seed/hill) in raised beds and were thinned to one plant per hill after emergence (7 plants/plot). Irrigation and fertilizer (4-0-8, N-P-K) were applied via drip tape on 9 Aug and weekly thereafter depending on field conditions. The nine non-treated squash cultivars were randomized into four complete blocks. Disease severity was assessed on 8, 14, 22, and 29 Sep as percent leaf area with necrosis caused by *P. cubensis* per plot. Fruit were harvested on 29 Sep, and marketable yield was determined. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (ANOVA) and Fisher’s Protected LSD test to separate means.

Downy mildew was first detected on 22 Aug at approximately 2% disease severity in the field and advanced throughout the course of the trial. At the 22 Sep rating, Table Queen had significantly less downy mildew compared to the other varieties, although Ace of Spades exhibited the largest yields.

Variety	Disease Severity (%) <sup>*</sup>		
	14 Sep	22 Sep	Mkt yield (lb/plot)
Table Queen	42.5 d <sup>**</sup>	72.5 d	7.9 de
Sweet Mama	67.5 c	82.5 c	13.9 cd
Waltham Butternut	88.8 a	90.0 abc	15.9 abc
Taybelle PM	80.0 b	90.0 abc	15.0 bcd
Turk’s Turban	70.0 c	86.3 bc	0.6 f
Vegetable Spaghetti	88.8 a	93.0 ab	5.7 ef
Primavera	85.0 ab	95.5 a	21.4 ab
Spaghetti Squash	87.5 ab	93.0 ab	10.6 cde
Ace of Spades	80.0 b	93.8 ab	22.7 a

<sup>\*</sup>Disease severity was assessed as the percent necrotic leaf area per plot caused by *P. cubensis*

<sup>\*\*</sup>Treatments followed by the same letter(s) within a column are not statistically different ( $P=0.05$ , Fisher’s Protected LSD).