CUCUMBER (*Cucumis sativus*)
    Downy mildew; *Pseudoperonospora*
    cubensis

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Evaluation of host resistance for control of downy mildew on cucumber, 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; 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 sweet potato. Cucumber was direct seeded on 21 Jul (2-ft in row spacing, 2 seeds/hill) into raised beds and then thinned to one plant per hill after emergence (7 plants/plot). Irrigation and fertilization (4-0-8, N-P-K) were applied via drip tape on 9 Aug and weekly thereafter depending on field conditions. The eight non-treated cucumber cultivars were randomized into four complete blocks. Disease severity was assessed on 8, 14, 22 and 29 Sep as percent leaf area with necrosis per plot. Fruit were harvested on 8, 14, 21 and 27 Sep and marketable yield was recorded. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) 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. PI 605996 and PI 330628 developed significantly less downy mildew than the other cultivars, while Peacemaker and Citadel had the highest yield. In the table, cultivars are sorted by disease severity on 22 Sep.

	Disease Severity (%)[z]		
Cultivar	14-Sep	22-Sep	Mkt yield (lb/plot)
PI 605996	46.3 c [y]	57.5 c	9.1 bc
PI 330628	38.5 c	57.4 c	11.5 b
Peacemaker	68.8 b	73.8 b	32.4 a
Poinsett 76	71.3 b	77.5 b	10.8 b
PI 197088	68.8 b	73.8 b	10.0 b
Citadel	67.5 b	78.8 b	27.0 a
Vlaspik	91.3 a	96.3 a	17.1 b
Arabian	93.8 a	97.3 a	15.5 b

[z] Disease severity was assessed as the percent necrotic leaf area per plot caused by *P. cubensis.*
[y] Treatments followed by the same letter(s) within a column are not statistically different (P=0.05, Fisher's Protected LSD).