WATERMELON, SUMMER (*Citrullus lanatus* 'Various')
Powdery mildew: *Podosphaera xanthii*

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Evaluation of watermelon cultivars for powdery mildew management, Goldsboro 2022.

The experiment was performed at the Cherry Farm Research Station in Goldsboro, NC. Research plots were single raised beds on 5-ft centers covered with white plastic mulch; 14-ft long with 10-ft fallow borders on each end. Watermelon was seeded on 5 Jun in the greenhouse, thinned to one plant per cell after emergence (2 seed/cell), and transplanted to the field on 15 Jun (2-ft in-row spacing, 7 plants/plot). Irrigation and fertilization (4-0-8, N-P-K) were applied via drip tape. Thirteen cultivars were evaluated in a randomized complete block design with four repetitions. Disease severity per plot was assessed on 7, 14, 19, 25 July and 2, 9, 19 and 25 Aug. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's protected least significant differences (LSD) test to separate means.

Powdery mildew was first detected on 19 Jun at approximately 1% disease severity in the field. At the disease severity data obtained on 25 Aug the varieties Embasy and 50036 were statistically different from the varieties Mickey Lee and USVL677-PMS (susceptible checks). All varieties were statistically better than the susceptible check. The disease summary for the season (AUDPC) showed that all the varieties were statistically different from the susceptible checks (Mickey Lee and USVL677-PMS).

Varieties	Disease Severity[z] (%) 25 Aug	AUDPC[y]
Embasy	0.8 d[y]	39.25 c
7197 HQ	10.5 bc	123.00 c
Excite	16.8 bc	288.00 c
Expert	12.3 bc	191.25 c
Endless Summer	13.1 bc	200.25 c
Summerlicious	19.4 b	287.00 c
SP-6	15.0 bc	143.25 c
USVL677-PMS	93.7 a	1845.00 a
Mickey Lee	59.5 a	646.50 b
USVL608-PMR	13.8 bc	268.00 c
ORS6406A	6.1 c	90.00 c
Essence	22.2 b	286.75 c
50036	0.3 d	13.00 c

[z] Disease rating scale based on percent necrotic foliage caused by *P. xanthii*. / 25 Aug.

[y] Area under disease progress curve for total of all the foliar diseases present. AUDPC $= \sum_{i=1}^{n-1} \frac{y_i+y_{i+1}}{2} x(t_{i+1} - t_i)$

[x] Treatments followed by the same letter(s) within a column are not statistically different (*P*=0.05, Fisher's Protected LSD).