CUCUMBER (*Cucumis sativus*, Multiple varieties)
Downy mildew; *Pseudoperonospora cubensis*

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Evaluation of varieties for control of downy mildew on cucumber, Clinton, NC 2021.

The experiment was conducted at the Horticultural Crops Research Station in Clinton, NC. 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 this field was also planted to cucumbers. Cucumber was directly seeded on 11 Aug (2-ft in-row spacing, 2 seed/hill) and 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. Cucumber varieties were randomized into four complete blocks. Disease severity was assessed on 14, 23 and 29 Sep 6 and 13 Oct as percent leaf area with necrosis per plot. Fruits were harvested 4 times through the season; marketable fruits are regular shape fruits with no physical imperfections longer than 3 inches. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's protected least significant difference (LSD) test to separate the means.

Downy mildew was first detected on 31 Aug at approximately 1% disease severity in the field and progressed throughout the course of the trial. PI-197088 had the lowest level of disease. All varieties were significantly better than the standard (Lizst) besides the Gy14. For the total marketable weight, the variety PI-197088 had the highest weight. For the total unmarketable, the variety Jumbo G/L had the most weight.

Variety	Disease Severity (%)[z] 14 Sep (Week 6)	Disease Severity (%)[y] 6 Oct (Week 9)	Total Marketable[x] (lbs/treatment)	Total Unmarketable (lbs/treatment)
PI-197088	5.0 g[w]	18.5 e	33.33 a	20.23 ab
Encounter	12.0 de	57.0 d	23.58 abc	12.6 bcd
Chaperon	9.5 ef	72.5 bc	22.5 a-d	14.4 a-d
Hyper C	16.5 c	57.0 d	28.95 ab	15.33 abc
Citadel	9.8 def	71.0 bc	21.55 a-e	13.28 a-d
Zircon	12.3 d	62.5 cd	18.98 b-e	13.1 a-d
Peacemaker	8.8 f	74.0 bc	18.13 b-e	14.28 a-d
Gy14Q2	16.8 c	71.5 bc	8.65 de	9.05 cd
Gy14	17.3 c	91.3 a	7.85 e	5.05 d
7204Q3	29.3 a	80.8 ab	9.9 cde	9.48 cd
Jumbo G/L	16.5 c	53.5 d	18.2 b-e	22.1 a
Liszt	20.3 b	86.0 a	13.05 cde	5.73 d

[z]Disease rating scale based on percent necrotic foliage caused by *P. cubensis*. / Data point 14 Sep (Week 6).
[y]Disease rating scale based on percent necrotic foliage caused by *P. cubensis*. / Data point 6 Oct (Week 9).
[x]Marketable and non-marketable total yields (lbs./treatment).
[w]Treatments followed by the same letter(s) within a column are not statistically different (P=0.05, Fisher's Protected LSD).