

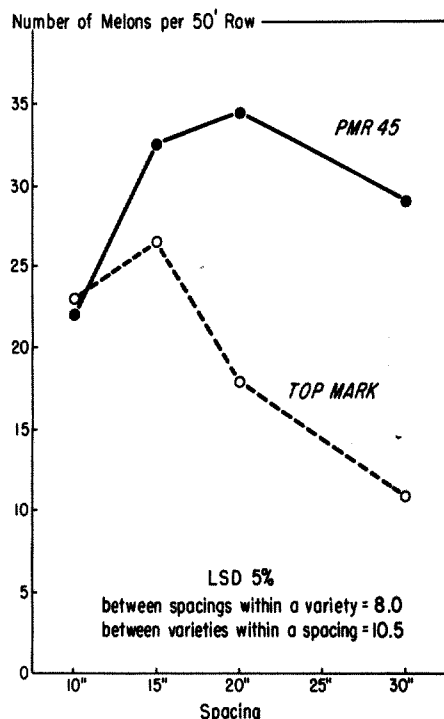
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Effects of plant density on yield and quality of CANTALOUPEs

APPROXIMATELY 68,000 ACRES OF cantaloupes are grown annually in California. The desert areas of Blythe and Imperial Valley grow about 12,000 of the total acreage in the early spring and fall. The largest acreage, 30,000 acres, is grown in Fresno County in the San Joaquin Valley. Generally the number of vines per acre will range from 5,000 to 8,000 with a trend by growers to increase the plant population per acre. This experiment was conducted at Davis to determine the effect of plant density on yield of marketable cantaloupes.

Two varieties, PMR 45 and Top Mark, were planted at four plant densities: 7,000, 16,000, 28,000, and 63,000 plants per acre. The spacings or treatments in inches were: 30 x 30, 20 x 20, 15 x 15 and 10 x 10 on square with four replications per

GRAPH 1. TOTAL MATURE MELONS HARVESTED PER 50 FT OF ROW.



treatment. After the plot was thinned to the desired spacings, a sidedressing of 120 lbs of nitrogen per acre was applied. Sufficient moisture was applied by furrow irrigation throughout the growing season.

Graph 1 shows the total number of mature melons harvested per 50 ft row for the two cultivars. At Davis PMR 45 produces more melons than Top Mark when grown at plant densities of 28,000 plants or less. Top Mark produced less melons but their average size was larger than the PMR 45 melons. This cultivar matured its melons about two weeks later than PMR 45 which may contribute to the decrease in total melons harvested.

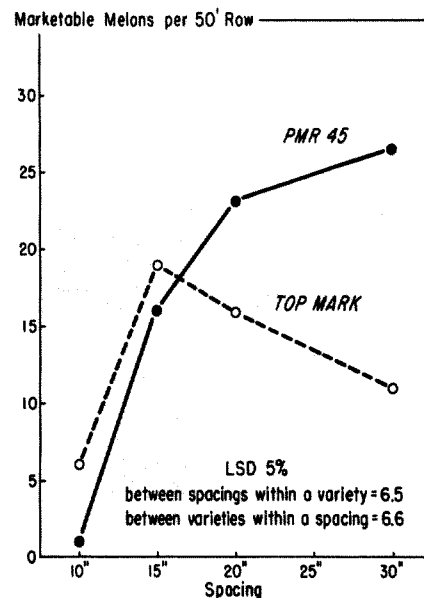
PMR 45 produced more marketable melons at the two wide spacings than Top Mark (graph 2). Top Mark produced very few small melons at the wide spacing but PMR 45 produced a number of small melons at the wider spacings.

Graph 3 indicates the yield in crates per acre for the two cultivars. At the close 10-inch spacing the vines were small and produced mostly small unmarketable melons. These muskmelons required about 1.5 sq ft (15 x 15 inches) of growing space per vine to develop properly and produce melons of marketable size.

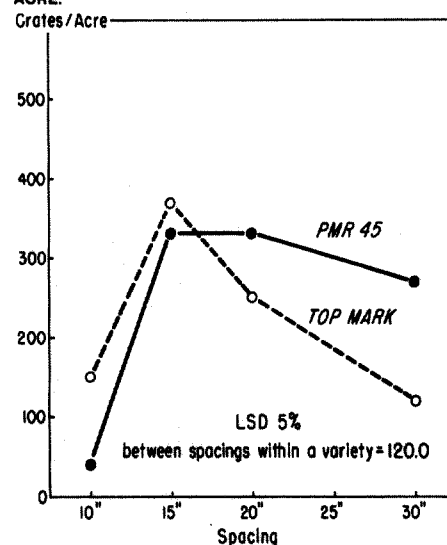
Total leaf area per vine increased with the increase in spacing between plants. The percentage of sucrose in the mature harvested melons increased with the increase spacing (graph 4). A total leaf area of about 6.0 sq ft per vine was required to produce 9% sucrose melons with the two cultivars at Davis.

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GRAPH 2. MARKETABLE MELONS PER 50 FOOT OF ROW.



GRAPH 3. CRATES OF MARKETABLE MELONS PER ACRE.



GRAPH 4. PERCENT SUCROSE IN HARVESTED MATURE MELONS.

