

INFLUENCE OF PLANT DENSITY ON YIELD AND QUALITY OF GREENHOUSE GALIA MUSKMELONS GROWN IN PERLITE

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Production of Galia muskmelons (*Cucumis melo* L.) in passive ventilated greenhouses in Florida using soilless culture can result high yields when adequate plant densities are used. Selection of adequate plant densities that make efficient use of available growing space and labor it may be possible to obtain high yields and optimal returns to the investment. Experiments to evaluate the effects of four different plant densities (1.7, 2.5, 3.3 and 4.1 plants · m⁻²) on yield and quality of Galia-type (Gal-152) muskmelon were conducted in fall 2001 and spring 2002 inside a double layer polyethylene passive-ventilated greenhouse. The different plant densities did not have an effect on the early or total number of fruit per plant, but did affect yields per unit area and in some cases the average weight per fruit. Yields per square meter had a linear response to plant density, where in yields per unit area increased with increased plant density. In a fall crop, a reduction in fruit size occurred when a plant density of 4.1 plants · m⁻² was used. Fruit quality, expressed as soluble solids content (SSC) or °Brix was not affected by any of the treatments. The average SSC of 10°Brix coincided with the USDA's standards for good quality of muskmelon fruits.

Despite higher yields at higher plant densities, careful consideration should be given to input costs and labor, since these inputs will increase costs. Labor for important activities like pruning and training increased from about 6,000 hours (3.3 plants · m⁻²) to almost 8,000 hours when a density of 4.1 plants · m⁻² was used. Even though greater total yields of number of fruits · m⁻² and kg · m⁻² a plant density 3.1 · m⁻² may be better than 4.1 plants · m⁻² since fruit number and fruit size were unaffected and labor and costs could be cut slightly.