

## Effect of different spacing on growth, yield, quality and relation to citrus canker of acid lime (*Citrus aurantifolia* Swingle)

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### ABSTRACT

Effect of different spacings viz., 6 x 6m, 6 x 4.5m, and 4.5 x 4.5m and 6 x 3m on growth behaviour, fruit yield and reaction to diseases in acid lime was studied during 1999-2002. Plant growth expressed as tree volume and stem girth of the plants increased under wider spacing, however a reverse trend was observed in the height of plants. The fruit yield/tree and weight of fruit increased under wider spacing. The closest spacing of 6 x 3m resulted in high intensity of canker. It is therefore concluded that the 6 x 6m spacing is optimum for acid lime under Western Maharashtra conditions.

**Key words :** Growth, Yield, Quality, Canker, Acid lime. Maharashtra.

**A**cid lime (*Citrus aurantifolia* Swingle) is one of the most important citrus fruit crop grown in India. The fruit is valued for high acid content and rich flavour. However, its production in North India is limited because of susceptibility to frost and citrus canker. Improper spacing may be one of the reasons for lower production in per unit area. Richardson and Jotic (1975) have given an excellent account of plant densities and systems of management for a variety of fruit crops including citrus. Phillips (1974) obtained considerable higher returns of quality fruits from closer spacing at 20' x 15' than the one at 25' x 20' and 15' x 10' in pineapple orange. In order to find out optimum spacing for acid lime under Western Maharashtra condition, a spacing trial was laid out in 1990 at All India Co-ordinated Research Project on citrus, Mahatma Phule Krishi Vidyapeeth, Rahuri,

### MATERIALS AND METHODS

The experiment was conducted on Kagzi lime cultivar of acid lime with four spacing viz., 6 x 6m, 6 x 4.5m, 4.5 x 4.5m and 3 x 3 m in a Randomized Block Design having five replications. The size of the plot was 60 x 60 cm accommodating 9, 12, 16 and 18 plants, respectively or 277, 370, 495 and 555 plants/ha respectively. The data on growth parameters, yield, quality and reaction to canker and tristeza were recorded from 1999-2002.

### RESULTS AND DISCUSSION

#### Effect of plant growth:

The data revealed that stem girth did not differ significantly under different spacing (Table 1). However, it was more (40.54 cm) under wider spacing. A reverse trend in height of plants was observed indicating the

Table 1 : Effect of different spacing on stem girth, plant height and tree volume of acid lime

Spacing (m)	Stem girth (cm) Pooled mean 1998-2002	Plant height (m) Pooled mean 1998-2002	Volume (m <sup>3</sup> ) Pooled mean 1998-2002
6.0 x 6.0 (277 plant/ha)	40.54	3.10	30.77
6.0 x 4.5 (370 plant/ha)	37.86	3.09	26.12
4.5 x 4.5 (494 plant/ha)	37.28	3.06	25.96
6.0 x 3.0 (555 plant/ha)	36.79	3.15	24.79
S.E.±	0.55	0.04	1.05
CD at 5%	1.57	NS	2.89