

## Effect of Drip Fertigation on Growth, Yield and Quality of Ridge Gourd (*Luffa acutangula* L. Roxb)

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A field experiment was carried out at College Orchard, Department of Vegetable Crops, Horticultural College and Research Institute, Tamil Nadu Agricultural University, Coimbatore. To standardize drip fertigation for ridge gourd hybrid COH 1 (*Luffa acutangula* L. Roxb). The trials were conducted with a view to improve growth, yield and quality to compare the efficacy of water soluble and straight fertilizers for ridge gourd. A fertilizer dosage of 250:100:100 kg NPK ha<sup>-1</sup> was adopted for ridge gourd hybrid (COH1). The treatment consisted of seven levels of fertilizers consisting of three levels in straight fertilizers (125, 100 and 75 % of 250:100:100 kg NPK ha<sup>-1</sup>) and three levels in Water-Soluble Fertilizers (WSF) (125, 100 and 75 % of 250:100:100 kg NPK ha<sup>-1</sup>) and a control (100 % soil application of straight fertilizers) replicated thrice in Randomized Block Design. Water soluble fertilizers and straight fertilizers contain NPK only but WSF are in water soluble form which makes difference of nutrient availability to the plants. The irrigation water used was same for all the treatments with a pH 7.7 and EC of 2.2. From the study, it was found that fertigation treatments were significantly superior over the soil application of fertilizers (control). The fertigation treatment with 125 per cent WSF (T<sub>5</sub>) recorded the highest values for growth and physiological characters viz., vine length (9.65 m), stem girth (5.47 cm) and total chlorophyll content (2.59 mg/100 g). In case of yield parameters, the highest values were registered for fruit length (38.89 cm), fruit girth (19.65 cm), fruit weight (391.11 g), yield per vine (6.05 kg), number of harvests (14.10) and number of fruits/vine (17.84) in 125 per cent Recommended Dose of Fertilizers (RDF) (250:100:100 kg ha<sup>-1</sup>) through WSF (T<sub>5</sub>) followed by 100 per cent RDF through WSF. The quality parameters like calcium (15.54 mg/100 g), ascorbic acid (8.14 mg/100 g) and phosphorus (0.66 mg/100 g) content were found to be the highest with 125 per cent RDF through water soluble fertilizers. Therefore (T<sub>5</sub>) 125 per cent RDF through WSF can be recommended for getting increased growth, yield and quality in ridge gourd hybrid COH1. The benefit cost ratio of the treatment T<sub>5</sub> is 1.65.

**Keywords:** Drip fertigation, Growth, Quality, Ridge gourd, Water soluble fertilizers, Yield