

Research Article

Effect of irrigation and fertigation levels on cabbage

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Summary

The experiment was conducted in *Rabi* season during the year 2007-08 at Horticultural Research Farm, IGKV, Raipur (C.G.). There were 25 treatment combinations involving 5 irrigation levels (Furrow irrigation at 1.2 IW/CPE, drip irrigation at 100, 80, 60 and 40 % PE) and 5 nitrogen levels (50, 75, 100, 125 and 150 % of recommended dose of nitrogen) through fertigation. Results indicate that all the growth parameters were significantly influenced by irrigation and fertigation with nitrogen levels. Higher plant height and more number of leaves plant⁻¹ were observed with drip irrigation at 100 per cent PE and fertigation applied @ 150 per cent of recommended dose of nitrogen. Increasing the irrigation and nitrogen levels increased the yield significantly and highest yield (30.60 ton ha⁻¹) was obtained with drip irrigation at 100 per cent PE and fertigation with 150 per cent of recommended dose of nitrogen (29.71 ton ha⁻¹). Total uptake of nitrogen (287.93 kg ha⁻¹), phosphorus (25.30 kg ha⁻¹) and potassium (297.11 kg ha⁻¹) were maximum at drip irrigation at 100 per cent PE. Similarly the maximum uptake of nitrogen (296.22 kg ha⁻¹), phosphorus (26.90 kg ha⁻¹) and potassium (309.74 kg ha⁻¹) were observed at fertigation with 150 per cent of recommended dose of nitrogen. Water use efficiency (WUE) was found higher under drip irrigation at 40 per cent PE (9.80 q ha⁻¹ cm⁻¹) over furrow irrigation at 1.2 IW/CPE (8.08 q ha⁻¹ cm⁻¹).

Key words : Cabbage, Drip irrigation, Fertigation, Nutrient uptake, WUE, Soil fertility

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