

Effect of irrigation regimes and fertility levels on growth, yield, water use efficiency and economics of Brinjal (*Solanum melongena* L.)

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ABSTRACT : Field experiment was conducted to study the effect of irrigation regimes and fertility levels on growth, yield, water use efficiency and economics of brinjal in Gird Zone of Madhya Pradesh. The soil of the experimental field was sandy loam. The experiment was laid out in RBD factorial design with three irrigation schedules (0.6, 0.8 and 1.0 IW:CPE ratio) and four fertility levels (20t FYM, 100% RDF, 75% RDF + 5t FYM and 50% RDF + 10t FYM). The growth, yield and quality attributes of brinjal were significantly influenced with irrigation regimes and fertility levels. Amongst the various irrigation regimes, application of irrigation on 0.8 IW/CPE ratio produced significantly higher growth, yield and fruit quality. With respect to fertility levels, it was found that application of 75% RDF + 5t FYM recorded significantly higher growth and yield parameters, yield and B:C ratio. However, higher quality parameters were recorded with the application of 20t FYM only. Among the treatment combinations, combination of irrigation on 0.8 IW:CPE ratios with 75% RDF + 5t FYM was found best for obtaining the higher growth, yield and quality as well as monetary return.

Key Words: Brinjal, egg plant, (*Solanum melongena* L.), irrigation regimes, IW:CPE ratios, RDF, FYM, fertility levels, crop yield, fruit quality, water use efficiency (WUE), B:C ratio.