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Performance of bell pepper (*Capsicum annuum* L.) and its economics with different irrigation regimes and nutrient scheduling under protected structure in Island ecosystem

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ABSTRACT : An experiment was conducted to evaluate the effect of irrigation and nutrient scheduling on the yield and economics of bell pepper (*Capsicum annuum* L.) under protected structure during 2014 and 2015 at Calicut village, Andaman and Nicobar Islands. Four regimes of irrigation based on IW/CPE ratio (I₁-0.25; I₂-0.50; I₃- 0.75 and I₄-1.0) and nutrient levels consisted of five different composition of fertilizers to supplement the nutrient requirement of crop was used to find out the best treatment (N₁-100% recommended dose of NPK (inorganic form); N₂-50% of inorganic NPK + 50% organic manure; N₃- 75% of inorganic NPK + 25% organic manure; N₄- 25% of inorganic NPK + 75% organic manure; N₅- 100% organic manure). Combined variance analysis indicated that experimental seasons were not significantly different, but irrigation intervals and nutrient level both significantly influenced the performance and the total capsicum yield. Highest yield was recorded from the combination of irrigation at 0.75 IW/CPE ratio and nutrient application of 100 per cent recommended dose of NPK (inorganic form) (I₃N₁) treatments at par with the treatment of irrigation at 1.0 IW/CPE ratio and nutrient application of 100 per cent recommended dose of NPK (I₄N₁). However, with the lower irrigation frequency (I₁), lower yields were obtained with all nutrient levels. Both I and N significantly influenced the fruit weight, number of fruits per plant branches, quality of fruit and the total yield. The cost benefit ratio of 2.2:1 was recorded in the I₃N₁ (irrigation at 0.75 IW/CPE ratio and nutrient application of 100% recommended dose of NPK). Therefore, the conclusion, I₃N₁ treatment is recommended for naturally ventilated polyhouse grown bell pepper in this Island ecosystem in order to attain higher yields with improved quality.

KEY WORDS : Bell pepper, IW/CPE ratio, Nutrient scheduling, Benefit cost ratio

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