

EFFECTS OF SOIL PARAMETERS AND FERTILIZERS ON GHERKIN (*Cucumis anguria* L.) VAR. 'TREASURE' CULTIVATION IN HIRIPITIYA, SRI LANKA

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Gherkin (*Cucumis anguria* L.) or pickling cucumber is an important vegetable for fresh consumption and the canning industry. This experiment, arranged in Randomized Complete Block Design with three replicates, was conducted in the Hiripitiya area of Kurunegala to determine the best fertilizer application for the gherkin hybrid var. 'Treasure' based on the growth, reproductive and yield parameters. The changes in soil pH, organic matter content, electrical conductivity, average nitrogen (N), phosphorous (P) and potassium (K) were measured for four different fertilizer applications. The four different fertilizer applications (T1, T2, T3, T4) had varying amounts of Urea, TSP (Triple Super Phosphate) and MOP (Muriate of Potash). The experiment was done with four different fertilizer application points at 2 days before planting and 10, 20, 30 40 and 50 days after planting. In the Basal Dressing, 500 g of compost was applied per plant for all the treatments. Urea was added at 20 g, 20 g and 10 g per plant only for T1, T2 and T3. TSP was added 140 g per plant for T1, T2 and 70 g per plant in T3 and none for T4. MOP fertilizer was added 40 g per plant for T1 and T2, 20 g per plant for T3 and none for T4. Super Basal and Super Micro Mix were only added in T4 with amounts 175 g per plant and 5 g per plant, respectively. Top Dressing (TD) 1 comprised of 40 g, 50 g, 25 g per plant of both Urea and MOP in T1, T2 and T3. Kandurata TDM (Top Dressing Mixture) was added 100 g per plant only in T4. TD 2 comprised of 60 g, 50 g and 25 g per plant of Urea in T1, T2 and T3 and none for T4. MOP fertilizer was mixed with soil at 80 g, 50 g and 25 g per plant respectively in T1, T2 and T3 and none for T4. T4 comprised of 175 g per plant of Kandurata TDM only. TD 3 contained 40 g, 50 g and 25 g per plant of Urea in T1, T2 and T3 only. MOP and Kandurata TDM were applied in same fertilizer levels as TD2. Further, TD 4 contained same Urea levels as TD1 for T1, T2 and T3. Only 60 g, 50 g and 25 g per plant of MOP were mixed to T1, T2 and T3. The same amounts of Kandurata TDM were added to TD4 as TD3. TD 5 consisted of 60 g, 50 g and 25 g per plant of both Urea and MOP in T1, T2 and T3 respectively. Only 175 g per plant of Kandurata TDM was added to T4. Before and after the completion of the experiment, soils were analysed for pH, organic matter, electrical conductivity, average N, average P and average K. The results indicated that fertilizer levels had significant influence on the number of fruits per vine, fruit length, fruit diameter, yield and total yield. Among treatments, T1 showed the highest number of fruits per vine (25), fruit length (11.03 cm), fruit diameter (38.22 mm), yield per vine (2.51 kg) and total yield (45.61 tons/ha) than other fertilizer levels and it was significant.

However, with the T1 fertilizer application, the excess amount of average P (18 ppm) and K (512 ppm) were recorded after the cropping season causing a nutrient imbalance in the soil.

Keywords: *Cucumis anguria* L, Gherkin, Hybrid Variety ‘Treasure’

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