

Research Article

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Effect of humic acid and inorganic fertilizers on productivity, profitability, nutrient uptake and soil fertility in brinjal (*Solanum melongena* L.) var. KKM1 in Alfisol of Tamil Nadu

■ M. PARAMASIVAN, V. ARUNKUMAR AND T. PRABHU

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MEMBERS OF RESEARCH FORUM:

Corresponding author :

M. PARAMASIVAN, Department of Soil Science and Agricultural Chemistry, Agricultural College and Research Institute, Tamil Nadu Agricultural University, Killikulam, Vallanad, THOOTHUKUDI (T.N.) INDIA
Email: paramusoil@gmail.com

Co-authors :

V. ARUN KUMAR AND T. PRABHU, Department of Soil Science and Agricultural Chemistry, Agricultural College and Research Institute, Tamil Nadu Agricultural University, Killikulam, Vallanad, THOOTHUKUDI (T.N.) INDIA

Summary

A three year field experiment was conducted during September – March of 2010-2011 to 2012-2013 at Agricultural College and Research Institute, Killikulam to study the influence of humic acid with graded levels of inorganic fertilizers on productivity, nutrient uptake, economic and soil fertility of brinjal var KKM1. The experiment was carried out in Randomized Block Design replicated thrice with 11 treatments. Humic acid was applied through both in soil and foliar spray with 75 per cent RDF ($N_{75} P_{37.5} K_{22.5}$). Application of 75 per cent RDF ($N_{75} P_{37.5} K_{22.5}$) + 10 kg HA (SA) + 0.2 per cent HA (FS) /ha produced significantly higher plant height (112.0 cm), days to 50 per cent flowering (56.4), number of branches/plant (9.4), number of fruits /plant (25.3), single fruit weight (69.9 g), fruit yield (33.4 t/ha), total dry matter production (10.08 t/ha), net return (Rs. 1,33,131 /ha) and B:C ratio (4.29), N, P and K (143.1, 33.3 and 148.6 kg/ha, respectively) uptake compared to control. However, 75 per cent RDF ($N_{75} P_{37.5} K_{22.5}$) + 10 kg HA (SA) + 0.1 per cent HA (FS) /ha had higher plant height, number of branches, days to 50 per cent flowering, number of fruits per plant, single fruit weight, fruit yield, total dry matter production, net return, B:C ratio, N,P and K uptake. Significant built up of organic carbon (0.92 %), available N (291.5 kg/ha), available P (25.4 kg / ha) and available K (293.7 kg / ha) was registered with 75 per cent RDF + 10 kg HA (SA) + 0.2 per cent HA (FS) /ha. The maximum balance of N, P and K (25.5, 8.6 and 25.2 kg/ha, respectively) were recorded under the treatment with application of 75 per cent RDF + 10 kg HA (SA) + 0.2 per cent HA (FS) /ha.

Key words : Alfisol, Available nutrients, Brinjal fruit yield, Humic acid, Nutrient content and uptake

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