

Fertilizer Usage and Brinjal Cultivation in Thenmaradchi Area of the Jaffna District, Sri Lanka

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Brinjal cultivation in Thenmaradchi area of Jaffna district involves indiscriminate application of large quantities of fertilizers and pesticides. The overuse of fertilizer pollutes the water bodies in Thenmaradchi. It leads to health problems and also reduces the net profit of the farmers. The objective of this study was to determine the fertilizer requirement for maximum yield of brinjal cultivation in Thenmaradchi through field survey and examine the extent of overuse of fertilizer. For this study, data were collected from randomly selected 228 brinjal cultivators in this area. A quadratic form of multiple regression model for brinjal yield were developed using inorganic, organic fertilizers and interaction term of these fertilizers. Results of this study indicated that amounts of N, P and K significantly contribute to the brinjal production and also it showed that there is a significant interaction effect of organic manure and chemical fertilizer on the brinjal production. Farmers are averagely getting 1072 kg of brinjal from one lacham. Brinjal farmers in this division are applying 3.7 kg of N, 2.4 kg of P, 2 kg of K and 0.4 load of organic manure per lacham on average. When farmer applies one more load of organic manure per lacham, while applying the average level of inorganic fertilizer, brinjal production per lacham will averagely increase by 796 kg. When farmer applies one more kg of N per lacham, while applying the average level of organic manure and other inorganic fertilizer, brinjal production per lacham will increase by 195 kg. There is a significant negative interaction effect of inorganic N fertilizer and organic manure on yield. When farmer applies one more kg of K, while applying the average level of organic manure and other inorganic fertilizer, brinjal production per lacham will increase by 104 kg. There is a significant positive interaction effect of inorganic K fertilizer and organic manure on yield. The negative effect of inorganic P fertilizer indicates that most of the farmers apply P more than the optimal level.

Keywords: Inorganic fertilizer, interaction effect, multiple regression, organic manure