RealStrong Tricho Acti-Plus (Trichoderma koningii) for Enhanced Plant Growth and Yield of Chili

ABSTRACT

Tricho Acti-Plus (produced by Sabah Softwoods Hybrid Fertilizer Sdn. Bhd.) is a powder-based microbial inoculant containing the active ingredient of Trichoderma koningii, designed to control fungal diseases as a biocontrol agent in plants and indirectly support plant growth and yield. Chili producers are habituated to apply environmentally damaging chemical-based inorganic fertilizers for the better production and yield of chili. Which is one of the major causes of damaging soil productivity. Trichoderma koningiiis mainly well-known to be used against fungal diseases of plants but its potential use for chili growth and yield is still unknown. With this purpose in mind in this experiment different concentrations of Tricho Acti-Plus solution were prepared as treatments; 0.0 ml (T1, control), 200 ml (T2), 400 ml (T3) and 600 ml (T4) and applied two (2)times to the chili plants as foliar spray; at the time of seedling transplanting till 35 days after transplanting, aiming to investigate Tricho Acti-Plus effectiveness on the growth and yield of local chili bara (Variety-1) and chili kulai 461 (Variety-2). From the findings it was observed that application of Tricho Acti-Plus significantly boosted up the vegetative growth and yield of both chili varieties, but rarely a positive effect was observed on yield parameters of Variety-1. Based on overall performance among 4 treatments T3 exhibited significantly ($p \leq 0.05$) the highest effectiveness for both vegetative growth and yield parameters; on plant height (55.64 cm), numbers of branches (61.2), numbers of leaves (341), numbers of fruits (125 at week 10; 77.2 at week 12), fruit length (4.3 cm at week 10; 4.08 cm at week 12), fruit weight (1.4 g) and total yield (0.11 kg at week 10; 0.068 kg at week 12). Meanwhile, the similar results were also achieved for Variety-2 under T3 for numbers of branches (51.8), numbers of leaves (213.6), fruit length (14.4 at week 10, 13.9 at week 12) and total yield (0.171 Kg at week 10). Only for few of the parameters T4 and T1 (control) also exhibited best performance. Therefore, based on the top performance T3 is recommended for the best vegetative growth and yield of both chili varieties. From the overall results of this experiment, it can be decided that the RealStrong Tricho Acti-Plus is suitable to be used as a biofertilizer for the growth, yield and quality of chili besides the commonly known capability to prevent from fungal diseases.