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Development of production and plant protection modules for natural farming for different crops of north Karnataka

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Abstract

Although Green Revolution has made India food self-sufficient state, these agricultural practices caused long-term ill effects. Considering these aspects Government of India is now promoting natural farming, a form of ecological farming practice, as an alternative to chemical farming system. Hence, the experiment entitled “Evaluation and Development of Production and Plant Protection Modules for Natural Farming,” sponsored by GIZ India is being implemented at the Institute of Organic Farming, under UAS, Dharwad during 2024–2027 to develop scientifically validated natural farming modules for northern Karnataka. The study aims to develop production modules for cropping systems, evaluate plant protection strategies, standardise bio-inputs and prepare extension materials. Field experiments were conducted in RCBD with six treatments: Natural Farming (T1), Integrated Natural Farming (T2), Organic Farming (T3), Integrated Organic Farming (T4), Recommended Package of Practices (T5) and Chemical Farming (T6), replicated four times. Major crops included green gram, soybean and groundnut (Kharif) and chickpea, Rabi sorghum and wheat (Rabi). Results indicated that among non-chemical treatments, T2 performed better, with reduced chickpea wilt (15.66 %) compared to T1 (20.79 %) and lower disease severity in sorghum and wheat also with higher yield levels. Yield performance followed a similar trend, with T5 recording the highest yields across crops, while T2 showed improvement over T1. In green gram yield has increased from 1172 kg/ha (T1) to 2756 kg/ha (T2) by integrating the natural farming practices. Similarly in groundnut also yield has increased from 4446 to 6192 kg/ha. Although chemical farming and Recommended Package of Practices showed superiority wrt to productivity, integrated natural farming was equally good and emerging as a promising sustainable alternative, with % reduction yield with good soil health and ecological stability. Still this project is ongoing, research on standardisation production of bio-inputs and plant protection Schedules aim at proper management of pest and diseases under natural farming conditions thereby reducing the yield gap comparable to conventional farming.

Keywords: Bio-inputs, natural farming, organic farming