RESIDUAL, DIRECT AND CUMULATIVE EFFECT OF ORGANIC MANURES AND BIOFERTILIZERS ON YIELD, NUTRIENT UPTAKE, GRAIN QUALITY AND ECONOMICS OF WHEAT UNDER ORGANIC FARMING OF RICE-WHEAT CROPPING SYSTEM

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Abstract: The field experiments carried out at the Indian Agricultural Research Institute, New Delhi during *Rabi* season of 2002-2003 and 2003-2004 to study the effect of different combination of organic manures and biofertilizers on growth, yield,nutrient uptake and economics of wheat under organic farming. The results indicated that the cumulative effects of farmyard manure (FYM) and green manuring (GM) were more effective than its direct and residual effects and GM was significantly effective to FYM for increasing the productivity, nutrient uptake and economics of wheat. The inoculation of biofertilizers (B) with GM was better than GM alone in its cumulative effect. The combination of GM+FYM was still better than GM or FYM alone in its direct and cumulative effects for increasing productivity and gross return but net return was significantly reduced due to the higher cost of GM+FYM compared to FYM and GM alone. However, the residual effect of GM+FYM was similar to the cumulative effect of GM or FYM alone. The maximum improves the productivity and nutrient uptake was recorded with the use of GM+FYM+Biofertilizers. However, net return was significantly reduced due to higher cost of sources in combination of GM+FYM+B. It was concluded that the cumulative effect of GM+FYM+B for higher productivity and the cumulative effect of GM+B for higher net return were suitable for wheat in organic farming of rice-wheat cropping system.

Keywords: Organic farming, Wheat, Green manuring, Yield, NPK uptake, Economics

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