

## **Diversification of Rice-Based Cropping Systems under Irrigated Condition**

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**Abstract :** In India, Agriculture is largely in rice- based cropping system. It has indicated decline in factor productivity along with emergence of multi - nutrient deficiency, buildup of soil pathogen and weed flora because it operates and removes nutrients from the same rooting depth. In designing alternative cropping systems, the common approaches are crop intensification, crop diversification and cultivar options. The intensification leads to the diversification of the cropping system. Intensification is achieved by introducing an additional component crop in a pre-dominant sequential system by desirable adjustments in cultivars of one or all the component crops. Invariably, this results in higher land use efficiency and productivity per unit time Crop Diversification through such crop and inclusion of fodder crops help to improve the economic situation of small and marginal farmers because of higher income. Inclusion of crops in sequential and intercropping systems reduces some obnoxious weeds through formation of canopies due to competitive planting pattern and thus provides an opportunity to utilize cropping systems as a tool of weed management with non-chemical means. Use of organic source not only acts as supplement for fertilizer (nitrogen) but also improve the physico-chemical properties of soils. Production and use of nitrogen rich biomass offer better prospect for supplementing chemical fertilizers on regular basis. Such biological diversity brings yield and economic stability because of its potential for compensation among components of the system. In a particular agro-climatic and resource condition, the identification of most suitable crop sequence is based on its productivity, stability, land use efficiency as well as production efficiency and its performance is chiefly judged in terms of productivity and net return.

**Keywords :** integrated farming systems, sustainable intensification, system of crop intensification, wheat

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