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CO 51 Paddy Variety - Profitable Rice Production in Tamil Nadu

Tamil Nadu is the major Paddy grown state in India. The total area under Paddy cultivation is 21.65 lakh hectares in Tamil Nadu. 74.7 % of Paddy cultivation under Samba (Aug- Jan) season. Tamil Nadu is the fourth Major state in Paddy Production. The major Paddy Growing Area in the Tamil Nadu is Villupuram, Nagapattinam, Thiruvarur, Thanjavur and Thiruvannamalai districts. The total Paddy production in Tamil Nadu was 74 lakhs tonnes. The average production per hectare in Tamil Nadu is 3494 kg/ha. There was an urgent need to reduce water consumption and implement the good agricultural practices for rice cultivation while enhancing productivity. CO 51 Paddy variety was shorter duration with 110 days duration with white medium slender grains. Split application of Nitrogenous fertilizer, installation of pheromone traps, Drought mitigation strategies and Integrated Disease management technologies implementation increase the yield. Foliar application of PPFM reduces the rate of evapo transpiration and increase the Shoot growth. These technologies will be a step forward in increase the Paddy yield. The installation of pheromone trap used for monitoring the yellow stem borer incidence and reduce the incidence up to 12 %. Application of methylobacteria reduces the evapotranpiration rate and increases the crop withstand ability. The yield obtained from demonstrated plot was 78 q/ha. This was higher 16 % higher than farmers practice.

INTRODUCTION

Tamil Nadu is the major Paddy grown state in India. The total area under Paddy cultivation is 21.65 lakh hectares in Tamil Nadu. 74.7 %

of Paddy cultivation under Samba (Aug- Jan) season. Tamil Nadu is the fourth Major state in Paddy Production. The major Paddy Growing Area in the Tamil Nadu is Villupuram, Nagapattinam, Thiruvarur, Thanjavur and Thiruvannamalai districts. The total Paddy production in Tamil Nadu was 74 lakhs tonnes. The average production per hectare in Tamil Nadu is 3494 kg/ha. Source: Agriculture season and crop report 2020-2021, Department of Economics) the enhancement of productivity was immediate requirement to achievement future demand. Achievement of higher productivity was declined due to water scarcity and deflections of seasonal monsoons. Lack of adoption of good agricultural practices reduces the productivity of paddy. Adoption of short duration variety and low water consume paddy varieties is must. CO 51 Paddy variety was shorter duration with 110 days duration with white medium slender grains. High milling capacity (69%) and Head rice recovery (63%) with intermediate amylase content (22%). CO 51 paddy has Average yield of 6623 kg/ha it is 11 % increase over ADT 43 with yield potential of 11377 in Tamil Nadu. This variety suitable for cultivation as Transplanted rice throughout Tamil Nadu except Nilgris District.

Figure 1. CO 51 Paddy Variety

INTEGRATED CROP MANAGEMENT PRACTICES FOR HIGHER PRODUCTIVITY

SPLIT APPLICATION OF UREA

Application of excessive Nitrogenous fertilizers Particularly Urea fertilizers increases the greenish colour in plant leaves and its leads to attract the sucking pest. On other hand lodging of was occurred during heavy rainfall season. Due to the incidence of sucking pest the flowering and seed setting also affected. Application of Urea and other Nitrogenous fertilizers at three split doses. Application of 50 % of N at the time of Transplanting. Remaining first 25 % at time of active tillering stage and second 25 % at the time of Panicle emergence stage. This method helps increased the Nitrogen use efficiency and reduces the cost of fertilizers. (Source:P. Pardha-Saradhi).In other hands, Productivity of Paddy is reduced when leaf Nitrogen content < 2% at the time of tillering stage. Foliar application of Urea at 1 % at active tillering stage increase the No. of tillers per hills resulted from high tillering ability.

PHEROMONE TRAPS FOR CONTROLLING YELLOW STEM BORER

Rice yellow stem borer is the major problem identified in paddy growers in Tamil Nadu. Appearance of Symptoms mostly at panicle emergence stage. In this stage unable to implement the control measures with 16 % yield losses. Pheromone traps installation at the rate of 5 No.s / Acre for monitoring the Yellow stem borer incidence in paddy from transplanting onwards. This method helps to farmers for manage the Yellow Stem borer from early Stages onwards.

Figure 2. Demonstration of Pheromone trap Installation

INTEGRATED DISEASE MANAGEMENT

In Tamil Nadu paddy growing areas yield loss due to incidence of Blast and Sheath Blight are the main diseases during Kharif and Rabi Season. Paddy crop was under excess water stagnation during rainfall period leads to spread the *Pyricularia oryzae* during the vegetative stage of the crop. Incidence of blast leads to delay the process of flowering and grain filling. During tillering to milk dough stage, it was serious problem for uptrains higher grain yield. (Source: L. Bastiaans) IDM Practices which comprising seed treatment with Trichiderma at 10g/kg of seeds and Foliar application of Pseudomonas 5g/ litre of water at 15 Days After Transplanting and 15 days after first spray. It is controlling the Blast and Sheath blight in Paddy and reduces the indiscriminate application of fungicide.

PPFM (METHYLOBACTERIA) FOR DROUGHT MITIGATION

Theni district farmers are mainly depends on Mullai periyar River. After transplanting of paddy sometimes water deficit during 7-15 days. When water deficit occurs tillering stage leads to poor yield due low tillering capacity. For overcome this water demand ICAR KVK, Theni foliar application of PPFM at the ratio of 1000 mL/acre to reduce the evapotranspiration rate. It is not permanent measure against drought. It works 7- 15 days water deficit only. It is also works as a plant growth regulator to increase the growth of Paddy.

Figure 3. Foliar Application of PPFM

RESULT

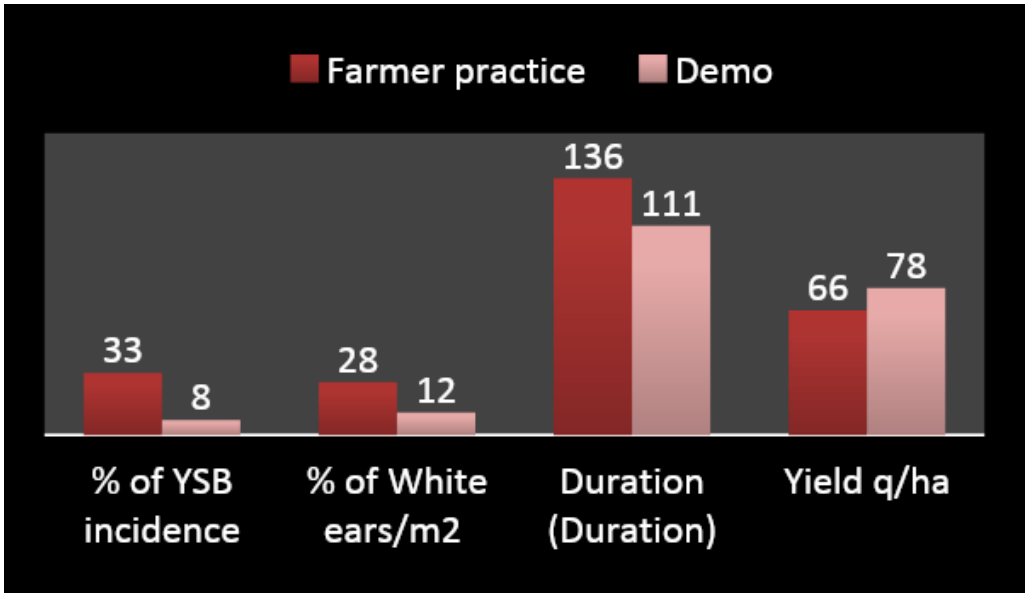

Figure 4. RESULT ON PARAMETER

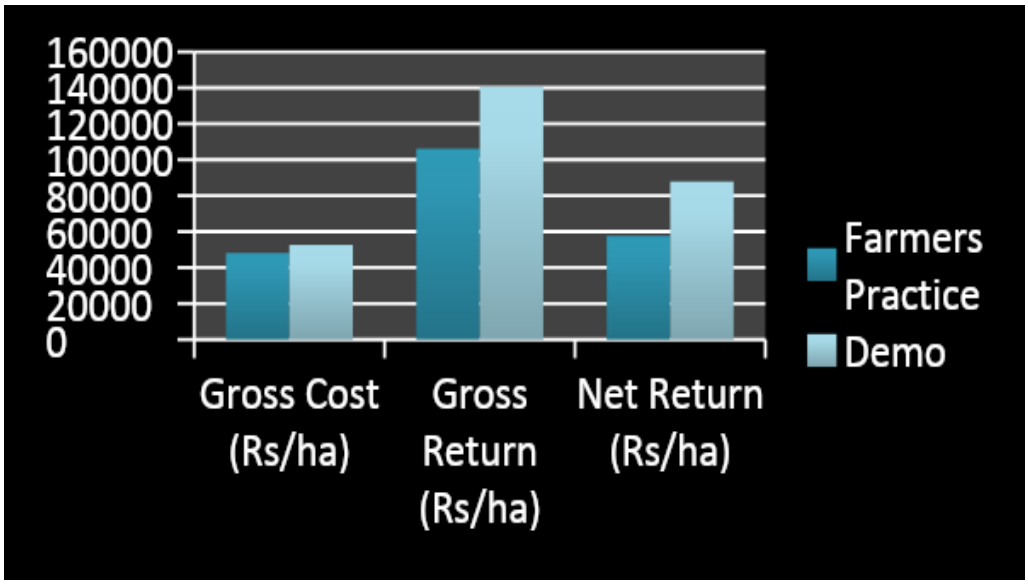

Figure 5. ECONOMIC PARAMETER

CONCLUSION

Yield obtained from CO-51 Paddy field is 78q/ha over he got net return of 87710 with 2.96 BC ratio. This is more profit than farmers practice. The paddy variety CO 51 with Integrated Crop Management Practices helps higher production when water deficit during maturity stage. Practice of Split application of urea reduces the nitrogen losses and increases the Nitrogen use efficiency lead to high tillering capacity. Growing Azolla in paddy field fix the atmospheric Nitrogen. Pest management strategies with Pheromone traps reduces the pesticides cost. Foliar application of PPFM reduces the rate of evapotranspiration and increase the Shoot growth. This will be a step forward in doubling the Paddy growers' income as target for our country.

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