



Opinion

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Paira Chickpea under Rice Fallow in Lowland Ecosystem of West Bengal, India



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Abstract

Paira crop is sown before harvesting of the main crops. *Paira* cropping is followed where rice is harvested in late with high soil moisture and water is scarcity to save the chickpea at later stage. To avoid these unavoidable circumstances agronomic strategies is urgent need for increasing cultivated area in fallow areas of West Bengal which was not followed earlier. There have ample scope horizontal expansion of fallow area with chickpea to maintain soil health, less use of water, sustainability and profitability.

Keywords: *Paira* chickpea; Rice fallow; Agronomic strategies; Production

Opinion

Paira cropping is sowing of second crop before harvesting of the main crops (Rice). *Paira* (Relay) cropping is followed where late transplanting long duration rice harvested in late with high soil saturation and water is scarcity to save the second crop at a later stage. Due to high soil saturation during rice harvesting, fields take another 15 to 20 days for proper soil moisture for sowing of second crop in low to medium land ecosystem of West Bengal. The strategies have to adopt for utilization of vast fallow land in low to medium land. In conventional agriculture, farmers keep fallow the land instead of second crop. In some areas *Paira* cropping of grass pea and lentil is followed under rice fallow situation after harvesting of rice in residual soil moisture but chickpea also possible in low to medium land ecosystem [1].

The strategies for cultivation of *Paira* chickpea have to understand in new dimension for higher production. From starting to harvesting and before sowing of chickpea crop in standing crop is very much crucial for germination of the seed. In standing rice crop, soil moisture has to check for proper germination. The rice crop field should be well levelled for maintaining soil moisture in uniform mode in which uniform

soil moisture can obtained, it facilitates uniform germination of seed. The planting geometry of rice crop also plays an important role for higher production of succeeding *Paira* chickpea crop. Machine transplanting or line transplanting rice crops gives higher yield itself rather it also gives higher yield of second crop. During sowing of chickpea it facilitates to germination, proper establishment and minimal disturbance of chickpea crop during harvesting of rice crop [2]. In *Paira* cropping system land are not prepared only under wet soil seed are sown. For any deviation in maintaining levelled land and uniform soil moisture germination of the crop may hamper. In low to medium land soil characterised by clay loam soil with high water holding capacity is suitable for chickpea crop period. The residual soil moisture of this soil is sufficient for chickpea plant growth and development [3].

Before sowing, seed should be treated with fungicides followed by rhizobium and trichoderma inoculation for disease free plant and better nodulation. The seed should be treated with fungicides bavistin @2g/kg seed at least seven days before rhizobium and trichoderma inoculation @20g/kg seed with suitable strain. The disease-resistant varieties of chickpea are

more suitable to control root rot and blight in *Paira* cropping situation. The seed is broadcast at the rate of 100 to 120kg/ha, 20-25% higher seed rate of recommended seed rate. To control soil borne pathogen liquid formulation of trichoderma may spray in wet soil. Manual one or two hand weeding is followed at 25 to 30 days or 45 to 50 days after sowing depending upon weed seed bank to control broad spectrum of weed.

Fertilization is not possible under *Paira* cropping system. Under nutrient stress condition nutrient solution like urea and DAP at the rate 2% is foliar sprayed at vegetative stage or before flowering. Insect-pests are control through application of pesticides according to types of pest for effectiveness. Mostly pod borer (*Helicoverpa armigera*) at branching and pod development stage is infested more.

Therefore, these agronomic strategies are very much urgent now a day because slogan like "More Crop per Drop" is giving

message to us that use less water for production of crop. With this light residual soil moisture utilization in second crop and time bound agronomic management for proper natural resource utilization.

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