

Promoting Climate Resilient Agriculture

Journey of 51 Climate Smart Villages



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period, four KVKs of Punjab and Haryana (Bathinda, Fatehgarh Sahib, Faridkot and Yamunanagar) conducted demonstrations on Sunhemp/dhaincha as green manuring crops at the farmer's fields. After harvesting of the preceding crop, pre-sowing irrigation (rauni) is given and 20 kg dhaincha seed is sown which is pre-soaked in water for 8 hours up to the first week of May. Six to eight weeks old dhaincha is buried in soil one day before transplanting of paddy. Dhaincha is preferred in kallar and recently reclaimed soils. This practice results in saving of 25 kg of N (55 kg urea) per acre. KVK, Bathinda provided seed of dhaincha to farmers of the adopted villages for green manuring. Every year 30 demonstrations on green manuring of Jantar variety of dhaincha is organized in 20 ha area of 30 farmers of the NICRA village.

In Faridkot, the KVK has conducted demonstration on cultivating dhaincha on area of 98 ha at 68 farmers' fields of the operational villages. Viewing the benefits of dhaincha demonstrations, farmers of the operational villages and other nearby villages have taken up dhaincha as green manuring on area of more than 250 ha at their own levels, which was practiced by very few progressive farmers in these villages before the commencement of NICRA Project. In Ropar, total 90 demonstrations were conducted on green manuring in which 56 farmers participated. These demonstrations, in 2016-17 and 2017-18, were laid in 36 ha area. Similarly, in Badauchi village of Fatehgarh Sahib, cultivation of sunhemp as a green manuring crop was demonstrated in 52 ha with 55 farmers, which was reported to save 1/3rd nitrogen in cultivation of rice and 1/2 nitrogen in basmati rice.

Moreover, in Yamunanagar, demonstrations were organized on green manuring with dhaincha to improve soil health & fertility before cultivating paddy.

Table 13: Performance of demonstrations of effect of green manuring

Variety	No. of Farmers	Area (ha)	Yield (q/ha)		% increase	Economics of demonstration (Rs./ha)			
			Demo	Check		Gross Cost	Gross Return	Net Return	BCR
PB- (Paddy)	10	36	54.25	53.89	0.6	36662	111212	74550	3.03

Leaf Colour Chart for application Nitrogenous fertilizer:

Nitrogen (N) is the most important nutrient which is essential for photosynthesis and the yield. Leaf Colour Chart (LCC) is a cheap, fast, and handy field instrument to measure green color intensity of



leaf, which is related to the plant's nitrogen content and N can be managed effectively at real time during all the stages of crop growth by using LCC. The demonstrations were conducted at the farmer's field in Faridkot. Total 58 farmers participated in the demonstrations covering 25.6 ha area.

Table 14: Performance of demonstrations on N application using Leaf colour chart

Crop and Variety	Year	No. of Farmers	Area (ha)	Yield (q/ha)		% increase	Economics of demonstration (Rs/ha)			
				Demo	Check		Gross Cost	Gross Return	Net Return	BCR
Wheat (PBW-1)	2016-17	4	1.6	52.4	52.2	0.4	34875	96416	61541	2.76
Wheat (Unnat PBW-343)	2017-18	2	0.8	51.8	50.9	1.8	34875	95312	60437	2.73
Wheat (HD-3086)	2018-19	39	15.6	55.8	54.2	2.95	35480	104512	69032	2.94
Paddy (PR-114)	2016-17	5	2	75.6	74.4	1.60	38250	109620	71370	2.86
	2017-18	8	5.6	55.4	53.2	4.14	31500	96119	64619	3.0

Table 15: Results of application of urea with Leaf Colour Chart (LCC)

Technology demonstrated	Urea (kg/ha)	% Saving of Urea	Yield (q/ha)
Fertilizer application using Leaf Colour Chart in Paddy	250	9.1	72.4
Without use of Leaf Colour Chart in paddy	275	--	62.0

Tensiometer for scheduling irrigation in paddy:

Use of Tensiometer was demonstrated for scheduling irrigation to the paddy (PR-114) crop in the farmers' fields of NICRA village of Faridkot. The demonstration fields reported saving of 4-6 irrigations during 2016-17 and 2017-18 and 3-4 irrigations in 2018-19.