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Phule Samadhan (NIAW-1994) -A Promising Wheat Variety to Enhanced Productivity and Profitability

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Situation Analysis

Wheat is one of the most important cereals crop and occupies a major position among cereals in Maharashtra state. Wheat is primarily preferred cereal crop in irrigated block of Malegaon, Baglan and Deola of Nashik district having annual average rainfall of 1050.9mm (2016-17). It is cultivated after harvesting of kharif crop like maize, bajra. In Nashik, Wheat was cultivated in an area of 79200 ha which is 6.22 % under total wheat cropped area in state of Maharashtra (2016-17). The productivity of Wheat in Nashik district (2119 kg/ha) which was higher than state average yield (1740 kg/ha). Farmers generally cultivated wheat using their own seed of old varieties (Lok-1, GW-496) infested by seed borne diseases. Also old varieties were prone to diseases, pest attack and there was lodging and shattering problems. In blocks like Malegaon, Nandgaon and Baglan, broadcasting of seed and two ways sowing is traditional practice followed by farmers. This practice causes poor aeration which leads to development of diseases like rust in wheat. Farmers were unaware about latest technologies like seed treatment, recommended dose of nutrients etc. also farmers are reluctant to apply plant protection measures in wheat. Heavy incidence of weed species *Phalaris minor* observed during early stages of crop growth which resulted in poor tillering and reduction in yield.

Technology, Implementation and Support

KVK Malegaon had done PRA survey in village Walvade of Malegaon block, analyzed problems and prioritized them for on farm testing. Old varieties used by farmers were major cause for low productivity. Considering above factors of low productivity and with the objectives to enhance productivity, to impart latest wheat production technology among farmers, on farm trial for varietal evaluation of wheat variety Phule Samadhan (NIAW-1994) was finalised.Total 13 farmers were selected from village Walvade of Malegaon block**.** Farmers were trained on the package and practices for wheat cultivation as recommended by the State Agricultural Universities. Seed of Phule Samadhan variety @ 15 kg provided to each farmer as need based input. Farmers followed traditional practices with existing varieties like Lok-1, GW-496, local seed in control plot**.** The farmer's fields were regularly monitored by the KVK scientists for applications of suitable technologies accurately. Total 5-6 irrigations applied to both trial and control plots. To aware about improved technology, trial plot exposure visit was organized where farmers observed variety Phule Samadhan, its earhead, number of seeds per plant, uniformity of crop stand etc. The yield data were collected from both trial and farmers practice plot (local check) and compiled.

Yield, economics and horizontal spread of wheat variety Phule Samadhan (NIAW-1994)

Treatment	Yield (q/ha)	Gross Cost (Rs./ha)	GMR (Rs./ha)	NMR (Rs./ha)	B:C ratio	Horizontal spread (ha)
Farmers practice	29.02	25526	49338	23812	1.78	-
Improved Wheat variety- Phule Samadhan (NIAW-1994)	**35.78**	**27262**	**61122**	**33860**	**2.24**	**32**

Uptake, Spread and Benefits

It was observed that highest yield 35.78q/ha found in improved variety NIAW-1994 whereas in control plot it was merely 29.02q/ha. There was 23.29 % increase in yield observed over farmers practice. The same trend found in case of gross monetary return, net monetary return which was Rs. 61122 & 33860 and for control 49338 & 23812 Rs./ha respectively. Benefit cost ratio for demonstration and control was 2.24 & 1.78 respectively. Application of proven technology like seed treatment, proper and timely nutrients management, timely weed & water management practices resulted in good yield and economic returns. Scientists conveyed farmers to store seed for next year and provide it to other farmers. Last year stored seed (30q) by beneficiary farmers distributed to other farmers of nearby villages. Thus in year 2017-18 total 32

ha increased in wheat area was observed. Due to its bold seed size, higher yield, good *Chapati* quality, farmers fetched extra Rs.100-150 and demand increasing among farmers. Farmers realized about its purity, crop stand and response to chemical fertilizers.. Farmer's feedback was much positive about this new variety with application of latest technology. This intervention showed that Phule Samadhan is promising and high yielding variety which fulfills farmers demand of good return and consumers for its best quality.