EFFECT OF FRONT LINE DEMONSTRATIONS ON PULSES YIELD DURING DIFFERENT SEASONS IN UTTAR PRADESH

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The Division of Agricultural Extension of ICAR took the responsibility of coordination Front Line Demonstration of Pulses in selected areas of eight Agor climatic zones, through, its TOT projects (KVK) full functioning with State Agricultural Universities, IVAR Institutes and Non-Government Organizations (NGOs) with an aim of enhancing the production potential of pulses in the country. The responsibility of coordinating and monitoring the front line demonstration on pulses in of Uttar Pradesh is given to Zonal Coordination Unit, Zone-IV (U.P.), involving all KVKs functioning in the state by suing newly released varieties as well as technologies, to exploit their maximum potential in the existing farming situation and getting feed back for research system.

METHODOLOGY

The KVKs/Zonal Coordination Unit (ICAR) have conducted demonstrations an area of 1982 ha under pulses with their yielding varieties of pigeon pea, urdbean in kharif, chickpea, fieldpea and lentil in rabi and mungbean an urdbean in summer season during 1994 to 1998 respectively (Fig. 1). The demonstration were carried out by twenty eight KVKs in eight argo climatic zones of U.P. The front line demonstrations were conducted on pigeonpea (Bahar, UPAS-120, ICPL-8501, 87, 151, Pusa-33 & MWT-2) and urdbean (PU-19, 30, 35, T-9 & PDU-88) in 271.1 ha area during kharif season; chickpea (Radhey, Pusa-256, Awrodhi, K-850, K-950, Pusa-252, Udia & K-4), fieldpea (Aparna, Rachana and M-2 & P-1) and lentil (K-75, PL-406, PL-234, Malika, L-4076, PL-639) on 1409.4 ha erea during rabi season and mungbean (T-44, NDM-1, PS-16, K-851 and PM-2) and Urdbean on 301.34 ha area during summer season from 1994 to 1998 in Uttar Pradesh. These demonstrations were conducted at farmers' filed in selected villages by the respective KVKs. During the period under report, the demonstrations were conducted on 691, 3692 and 681 farmers' field in kharif, rabi and summer season respectively. The other agronomic practices were followed as per the recommendations of pulse corps. The data were collected and analysed by using simple statistical tools like mean and percentage.

RESULTS AND DISCUSSION

The data shows (Table-1) that the front line demonstrations on pigeon pea resulted an average grain yield of 11.67 q/ha under demonstrated plot as compared to local check (7.40q/ha). In case o urdbean grain yield was higher (7.41 q/ha) in demonstrated plot as compared to local check (4.83 q/ha). Whereas, during rabi season chickpea provided higher grain yield o 18.70 q/ha in demonstrated plots over the local check of 11.21 q/ha. In case of lentil grain yield was recorded 14.49 q/ha than the local check 8.37 q/ha. During summer season mungbean has resulted 9.42q/ha grain yield as compared to local check 5.46 q/ha. The similar higher results on urdbean was also obtained. The grain yield was to the tune of 8.33 q/ha over local check 4.82 q/ha. These crops in general provided higher grain yield in all the seasons over the years because of improved varieties as well as package of practices as compared to the local checks. The similar results reported by all KVKs and findings are in agreement of Annynomus (1994-95, 1995-96, 1996, 1997 and 1998).

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Table 1. Result of Front Line Demonstrations of KVSs (U.P.) in different seasons on Pulses for the year 1994 to 1998

Name of crop/verities	Year	No. of Demons.	Area (ha)	Yield (q/ha)		Increase in Yield (%)
				Dem Avg	Check Local	
			KHARIF			
Pegonpea	1994	110	40.00	18.40	11.08	66.70
Bahar, UPAS-120	1995	155	63.10	15.37	9.93	54.70
87, 151, 8501, Pusa-33 &	1996	54	30.00	14.50	9.30	58.20
MWT-2	1997	37	20.00	10.10	6.70	52.30
	1998	232	92.50	13.53	8.01	73.09
Total/Avg		**356**	**153.1**	**11.67**	**7.40**	**46.38**
Urdbean	1194	48	16.20	8.77	5.69	55.11
PU-19,30,35, T-9 &	1995	128	35.00	10.25	4.39	133.40
PDU-88	1996	63	29.20	9.82	9.46	64.14
	1997	96	37.60	8.20	4.60	80.10
	1998	112	47.60	7.20	4.71	77.88
Total/Avg		**335**	**118**	**7.41**	**4.43**	**66.55**
			RABI			
Chickpea	**1994**	**404**	**140.93**	**19.33**	**0.00**	**74.04**
Radhey, Pusa-256, 252	1995	492	183.00	17.03	10.64	62.00
Awarodhi, K-850, 950,	1996	492	183.00	17.03	10.64	62.00
Udai & K-4	1997	418	156.00	18.80	14.30	70.00
	1998	333	123.00	19.20	11.15	73.40
Total/Avg		**2139**	**785.93**	**18.28**	**9.35**	**68.29**
Fieldpea	1994	180	49.66	18.90	10.58	78.58
Aparna, Rachan, M-2 &	1995	233	110.14	18.85	11.03	70.89
P-1	1996	233	110.14	18.85	11.03	70.89
	1997	245	94.60	18.00	11.40	73.00
	1998	211	74.00	18.90	12.00	57.00
Total/Avg		**1102**	**438.54**	**18.70**	**11.21**	**70.17**
Lentil	1994	79	25.00	15.47	8.76	76.50
K-65, PL-234, 406, 639,	1995	64	35.00	13.83	8.39	64.83
L-4076 & Malika	1996	64	35.00	13.83	8.39	64.83
	1997	105	40.00	14.20	7.50	89.00
	1998	139	50.00	15.10	8.80	71.60
Total/Avg		**451**	**185**	**14.49**	**8.37**	**73.35**
			SUMMER			
Mungbean	1994	27	15.00	9.15	5.30	73.00
T-44, NDM-1, PS-16, K-	1995	56	29.72	9.63	5.21	84.80
851 & PM-2	1996	56	29.72	9.63	5.21	84.80
	1997	92	34.00	9.70	6.20	56.20
	1998	111	43.00	9.00	5.40	67.00
Total/Avg		**342**	**151.44**	**9.42**	**5.46**	**73.16**
Urdbean	1994	18	10.00	7.95	3.50	127.00
PU-19,30,35, T-9 &	1995	42	24.95	7.80	3.95	97.46
PDU-88	1996	42	24.95	7.80	3.95	97.46
	1997	132	50.00	9.10	6.20	47.30
	1998	105	40.00	9.00	6.50	38.00
Total/Avg		**339**	**149.9**	**8.33**	**4.82**	**81.44**

Pulses yield increase in percentage–It reveals from the Table 1. that in kharif season pulses, yield increase was ranging from 46.38% in pigeon pea in urdbean, whereas, whereas, year wise variation percentage yield increase was obtained to the tune of 52.30 to 133.40% in rabi season pulses viz., chickpea, fieldpea and lentil showed the percentage increase in yield variation raging from 68.29 to 73.16% over local check. Hence, Hence, year wise increase in yield ranging from 57.50 to 89.00% over the local check. Where as, in summer season, yield increase was 73.16% in mungbean

and 8144% in urdbean over local check. The year wise increase in yield ranged from 38.0 to 127.0% over all the years of demonstration form 1994 to 1998 respectively. Therefore, it has been that increase in yield over local checks in higher in all the demonstration on pulses during kharif, rabi and summer season. Thus, this enhanced yield percentage confirm the results for filling the gap between demand and supply. The similar findings have been reported by Anonymous 1994-95, 1995-96, 1996, 1997 and 1998 respectively.

Extension Activities–The extension activities under taken during the all three seasons have been presented in Table-2. KVK organised 486 kisan gostheis involving 13944 participatnts, 241 field days including 10646 participants and 40 kisan melas with 26433 participants, KVKs also organized 2000 training programmes, where a total number of 71353 beneficiaries were participated on improved package of practices. KVK also organised 220 training programmes for Extension functionaries, where 8791 participants were benefited during all the 5 years of demonstration programme in U.P. (1994-1998).

Table 2. Details of Extension Activites carried out by KVKs of U.P. under FLD on Pulses

Activities organized	Year					Total
	1994	1995	1996	1997	1998	
1. Kisan Gosthies	96	93	100	102	95	486
Participants	2800	2805	2490	2714	3135	13944
2. Field days	45	49	52	47	48	241
Participants	2154	2109	2180	2097	2106	10646
3. Kisan Melas	08	9	7	9	07	40
Participants	5112	6531	4049	4975	5414	26433
4. Trg. Prog. for formers	402	400	380	407	411	2000
Participants	14500	14666	14350	13987	13850	71353
5. Trg. Programmes for extension workers	42	45	47	41	45	220
Participants	1750	1791	1802	1690	1758	8791

Feedback :

- Wilt resistant and short duration varieties of pigeon pea are needed.
- Short duration pigeon pea cultivars have great scope for double cropping due to early harvest.
- Yellow mosaic resistant varieties of urdbean and mungbean are needed by the farmers.
- Suitable bold seeded and pod borer resistant varieties of chickpea are needed.
- Wilt resistant varieties of chickpaea for eastern U.P. conditions are required.
- Seed village concept may be popularised for rapid seed multiplication and spread of newly released varieties.

CONCLUSION

It is concluded that conduction of front line demonstrations with full package of practices viz introduction of high yielding varieties, balance use fertilizer (NPK) along with micro nutrients like Zn, S, Bo; Bioferfilizer; integrated insect and pest management enhanced the yield. Therefore, there is a great scope for popularizing pulses production technologies for accelerating the producation in the Uttar Pradesh. The possibility leads to doubled the production and productivity. The extension agencies can play an important role to transfer the improved technologies at farmers field.

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