

9. Front-line Demonstrations - Kharif 2008

B Subbarayudu coordinating with scientists at several SAUs as indicated below

Contents

Executive summary	1
Introduction	2
Methodology	2
Results	2
1. Grain yields	3
2. Stover yield	4
Conclusions	4
Farmer-wise details of FLDs (Kharif 2008)	6

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Executive summary

During *kharif* 2008 the Frontline Demonstrations (FLDs) of sorghum was carried out in 38 villages in three major sorghum growing states viz., Rajasthan, Madhya Pradesh and Karnataka. The programme covered 90 farmers in 47.20 ha area. Farmers were identified in consultation with the local people, State Department of Agriculture, Krishi Vignan Kendras and Non-Governmental Organizations (NGOs) in all villages in these states.

The improved cultivars demonstrated in FLDs were 'CSV 23', 'SPV 1616', 'CSH 23', 'SU 1080', 'CSV 17', 'SPV 1753', 'PJ 1430', 'JJ 1041' and 'JJ 1022'. The farmers of Rajasthan and Madhya Pradesh used local cultivars whereas Karnataka farmers adopted 'CSH 23' on flat-bed sowing in farmer's practice. In FLD plots, farmers followed all agronomic practices to raise the crop successfully.

The national average of the FLDs on *kharif* sorghum grain yield was 2279 kg/ha, and the same with farmers practice was only 1075 kg/ha, representing a grain yield gap of 52.8%. The yield gap with stover was much less (12.6% only). The average of stover yields in FLDs was 8841 kg/ha and that with farmers practice was 7729 kg/ha. In Karnataka and Madhya Pradesh (Zone II), grain yield gap (20.53 %) was comparatively lower than that in Rajasthan (77.40 %), (Zone III). This suggests the need for much improvement in grain sorghums in Rajasthan. Over all, at national level, FLD's on *kharif* sorghum indicated that adoption of improved cultivars resulted in an enhancement of 1204 kg/ha grain, and 1112 kg/ha stover yields.

Front-line Demonstrations Report

Introduction

The Ministry of Agriculture, Government of India, in order to have an effective linkage between the research and technology transfer, launched a project called frontline demonstrations (FLDs) in 1995-96. The project aimed to involve the scientists (developers of the technologies) in demonstration of their technology to the farmers (users of the technology) and to have a first-hand feed-back on its performance and problems in their adoption. The programme was started with an initial coverage of 220 ha area during 1996-97 in 13 sorghum growing states.

Sorghum is the fourth largest cropped area in India after wheat, rice and maize. The efforts made by the All India Coordinated Sorghum Improvement Project (AICSIP) and State Agricultural Universities (SAU's) since its inception during the early seventies has led to technologies for enhancing production and productivity to meet self sufficiency in food, fodder, feed and fuel.

The frontline demonstrations help in popularizing the recently released cultivars of sorghum. The programme was organized through AICSIP centers located in the major sorghum growing states of the country, other ICAR research centers, Government programmes like, Intensive Agricultural District Programme (IADP), High Yielding Varieties Programme (HYVP), Integrated Rural Development Programme (IRDP), National Agricultural Research Project (NARP), National Agricultural Extension Programme (NAEP), first line transfer of technology programmes of ICAR such as Lab to Land, and the Krishi Vignan Kendras (KVK's), Operational Research Projects (ORPs), Institute Village Linkage Programmes (IVLP), National Agricultural Technology Project (NATP) and National Agricultural Innovative Projects (NAIP), etc., to popularize the sorghum cultivation technologies.

The programme was able to demonstrate the production potential of the recently released hybrids and varieties in the farmer's fields. It not only developed the confidence of the farmers to adopt the newly released hybrids and varieties of sorghum, but also gave an effective feed back to modify the research programmes based on the experience obtained during the programme. The programme was also able to identify the new areas for research and development.

Methodology

The FLD's on sorghum during *kharif* 2008 covered 47.20 ha area in three major sorghum growing states *viz.*, Madhya Pradesh and Karnataka (Zone II) and Rajasthan (Zone III). The programme covered 90 farmers from 38 villages of these three states. Farmers were identified in consultation with the local people, State Department of Agriculture, Krishi Vignan Kendras and Non-Governmental Organizations (NGO's). The improved cultivars demonstrated in FLDs were, 'CSV 23', 'SPV 1616', 'CSH 23', 'SU 1080', 'CSV 17', 'SPV 1753', 'PJ 1430', 'JJ 1041' and 'JJ 1022'. The farmers of Rajasthan and Madhya Pradesh used local cultivars whereas Karnataka farmers used 'CSH 23' in flat-bed sowing in farmer's practice. Farmers followed recommended agronomic practices to raise the crop successfully. The detailed technical programme of FLD's on sorghum for the *kharif* 2008 is given in Table 1.

Results

In *kharif* 2008, 77 farmers were benefited by adoption of improved sorghum cultivars in FLDs. The highest number of farmers (45) conducted FLDs in Rajasthan whereas the least number of farmers (5) conducted the programme in Karnataka. Details are given in Table 2.

1. Grain yields

Out of three states, maximum grain yield under FLDs was recorded with farmers of Karnataka (2516 kg/ha) followed by Madhya Pradesh (2345 kg/ha) and Rajasthan (2213 kg/ha). Overall, the national average of the FLDs on sorghum grain yield was 2279 kg/ha and that of farmer's practice was 1075 kg/ha. The lowest grain yield gap (3.17%) between FLDs and farmer's practice was observed in Karnataka followed by Madhya Pradesh (24%). The maximum yield gap (77.13%) was observed in Rajasthan, indicating a greater scope of yield improvement as compared to Karnataka.

Based on zonal mean data (Table 3), it is clear that the grain yield of sorghum are much lower (1075 kg/ha) under farmer's practice as compared to FLD's (2279 kg/ha), indicating a wider yield gap (52.83%). The yield gap was larger (77.4%) in zone III (Rajasthan) as compared to zone II (20.53%) (Karnataka and Madhya Pradesh). The lowest yield gap (3.17%) in Karnataka (Zone II) was due to adoption of hybrid sorghum cultivar 'CSH 23' by the farmers.

Table 1 : Technical program of FLDs on sorghum in *kharif* 2008

State	Centre	No. of demonstrations	Area (ha)	Cultivars adopted in <i>Kharif</i> (2008)	Cultivars adopted during <i>Kharif</i> (1996-2007)
Karnataka	Dharwad	5	4.0	CSH 23	CSH Nos.13, 14, 16, 17 & 18, CSV 15, SPV 1616, DSH 3, DSV 2 & DSV 6
Madhya Pradesh	Indore	40	33.0 *	JJ 1041 & JJ 1022	CSH Nos.13, 14, 16, 17 & 18; CSV 15, SPV 1616, JJ 938, JJ 1022 & JJ 1041
Rajasthan	Udaipur	45	57.40	CSV 23, SPV 1616, CSH 23, SU 1080, CSV 17, SPV 1753 & PJ 1430	CSH Nos.13, 14, 17 & 18; CSV 15, CSV 17, SPV 1616 & Pratap Jowar.
Total		90	47.20	10	28

* Indicates that 13 FLD's failed at Indore Centre

Table 2: State-wise grain yield gap between FLD's and farmer's practice during *kharif* 2008

States	Grain yield (kg/ha)				Stover yield (kg/ha)		
	FLDs	Farmer's Practice	Difference (kg/ha)	Yield gap (%)	FLDs	Farmer's Practice	Yield gap (%)
Karnataka	25.16	24.36	80	3.17	75.92	68.80	9.37
Madhya Pradesh	23.45	17.82	563	24.00	77.08	57.14	25.86
Rajasthan	22.13	5.00	1713	77.13	96.60	90.33	6.49
Mean	22.79	10.75	1204	52.83	88.41	77.29	12.57

Table 3 : Zone-wise grain yields (kg/ha) of sorghum under FLDs and farmer's practice in *kharif* 2008.

Sl. No.	State	Grain yield (kg/ha)		Yield gap (%)
		FLD	Farmer's Practice	
Zone-II				
1.	Karnataka	2371	1884	20.53
2.	Madhya Pradesh			
Zone-III				
1.	Rajasthan	2213	500	77.40
	All India*	2279	1075	52.83

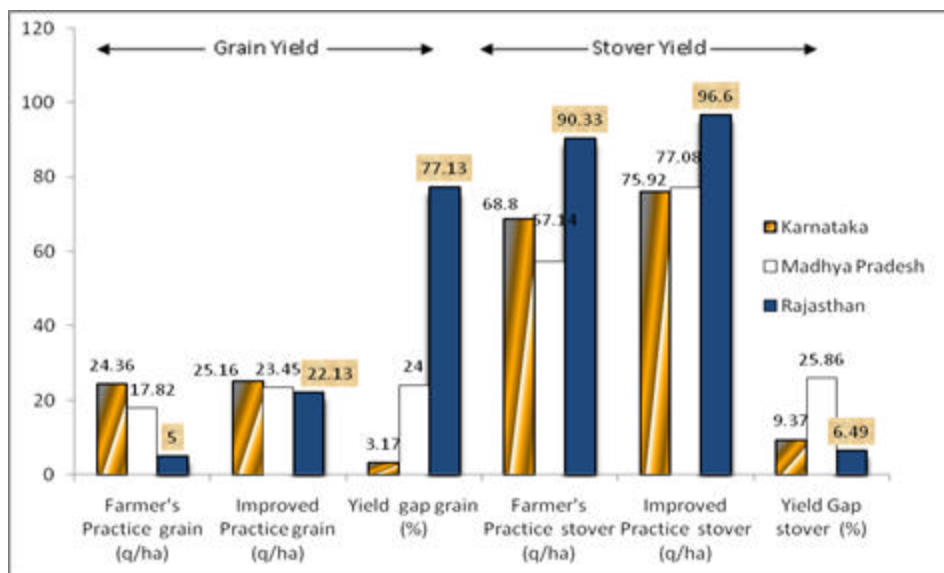


Fig.1: State-wise grain yield gap between FLD's and farmer's practice in kharif 2008

2. Stover yield

The national average of stover yields of FLDs was 8841 kg/ha where as it was 7729 kg/ha with farmer's practice with yield gap of 12.57%. In Zone II (Karnataka and Madhya Pradesh) the average stover yield of improved cultivars was 7690 kg/ha in FLDs and 5896 kg/ha with farmer's practice, with a yield gap of 23.32%. In Zone III (Rajasthan), the average stover yield of improved cultivars was 9660 kg/ha in FLDs while that of 9033 kg/ha with farmer's practice.

The list of cultivars used during *kharif* in FLDs from 1996 to 2007 has been shown in Table 2. The impact of the programme also indicated by the fact that in spite of decrease in the area under sorghum from 10.8 m ha in 1997-98 to 9.09 m ha in 2004-05; there has been an increase in the productivity of sorghum from 697 kg/ha to 807 kg/ha. This increase was mainly due to the adoption of the improved production technologies by the farmers at all India levels.

Conclusions

1. The national average of the Front-line Demonstrations on *kharif* sorghum grain yield was 2279 kg/ha; and with farmer's practice, only 1075 kg/ha with the grain yield gap of 52.8 %. The national average of stover yields of FLDs on sorghum was 8841 kg/ha (vs. 7729 kg/ha with farmer's practice) with yield gap of 12.57%.
2. The grain yield gap (20.53%) in Zone II (Karnataka and Madhya Pradesh) was comparatively lower than that of Zone III (Rajasthan) (77.4%) indicating the need of much improvement in the productivity of grain sorghum in Rajasthan.
3. Over all, at national level FLDs on *kharif* sorghum indicated that adoption of improved cultivars resulted in an enhancement in grain yield by 1204 kg/ha and stover yield by 1112 kg/ha.
4. By bridging the yield gap in grain (52.83%) and stover (12.57 %) through all improved technologies, *kharif* sorghum farmers could able to produce the maximum grain and stover yields

5. The FLDs are only on a pilot scale on the farmer's fields. These results indicate that there is a possibility of increasing the yields of sorghum and thereby the income of sorghum farmer with the introduction and adoption of the improved cultivars on a large scale in the state clubbed with timely transfer of technology and availability of inputs for following the recommended package of practice by the farmers. The yield gap analysis indicated the gap between possible yields and that obtained by the farmers can be bridged through seed replacement of the existing cultivars with improved cultivars. The lesser the yield gap, the higher is the chance for acceptability of the technology by the farmers.

Table 4: Details of front-line demonstrations conducted since its inception (2002-03)

Year	Targets	No. of demo conducted	Number of beneficiaries				Cultivars	Demonstrated
			<i>Kharif</i>	<i>Rabi</i>	Summer	Total		
2002-03	356 (356 <i>Kharif</i> only)	402	402	0	0	402	CSH16,17,18, CSV 15 and State rel	-
2003-04	1700 (925 <i>Kharif</i> and 775 <i>Rabi</i>)	1595.4	1303	989	0	2292	CSH16,17, and 18 and CSV 15 and State rel	CSH15R,19R, CSV 216R, and State rel
2004-05	500 (300 <i>Kharif</i> and 775 <i>Rabi</i>)	643.8	838	350	0	1188	CSH16,17, and 18 and CSV 15 and State rel	CSH15R,19R, CSV 216R, and State rel
2005-06	400	393.5	265	235	0	500	CSV15, CSH16, SPV1629, and State	CSV216R, 18R, and State rel.
2006-07	200	207.5	498	0	0	498	SPV1626, CSV17 and State rel	--
2007-08				625		625	-	CSV 216, CSV 18, Vasudha, PKV Kranti, DSV 5, Maulee and state release cultivars
2008-09	90	90	77	-	-	77	CSH Nos.13, 14, 16, 17, 18 & 23; CSV 15, SPV 1616, JJ 938, JJ 1022, JJ 1041, CSV 23, SU 1080, CSV 17, SPV 1753 & PJ 1430.	-
Total		3332.2	3383	2199	0	5582		

(Source: Report of Front Line Demonstrations on Sorghum, National Research Centre for Sorghum, Hyderabad: 2006-07)

Farmer-wise details of FLDs (Kharif 2008)

S. No	Name	Area (ha)	Village	Name of the gram panchayat	State	Details of technology	Grain yield (q/ha)	Stover yield (q/ha)	Check	Grain yield (q/ha)	Stover yield (q/ha)
1	Shri Manoj Ji S/o Banshi Lal Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	CSV 23	17.50	92.00	Local	4.00	70.00
2	Smt Rami Devi W/o Ram Chander Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	CSV 23	19.20	96.00	Local	5.80	86.00
3	Shri Mohan Lal ji S/o Har Lal Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	CSV 23	19.00	95.00	Local	5.30	71.00
4	Shri Ganesh Lal S/o Har Lal Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	CSV 23	21.50	100.00	Local	6.00	71.00
5	Shri Hira Lal ji S/o Shankar Lal Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	SPV 1616	17.30	88.00	Local	4.80	62.00
6	Smt Kusum Bai w/o Shanker Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	SPV 1616	16.50	90.00	Local	3.50	50.00
7	Shri Ganesh S/o Bana Ji Village & Post: Changeri	0.40	Changeri	Changeri	Rajasthan	SPV 1616	20.00	96.00	Local	6.00	80.00
8	Shri Udairam S/o Navala Ji Village & Post: Changeri	0.20	Changeri	Changeri	Rajasthan	SPV 1616	22.50	108.00	Local	6.50	85.00
9	Shri Mangi Lal S/o Lashaman Ji Village & Post: Changeri	0.25	Changeri	Changeri	Rajasthan	CSH 23	24.00	110.00	Local	6.00	80.00
10	Shri Dhanna Ji S/o Teja Ji Gadari Village & Post: Changeri	0.25	Changeri	Changeri	Rajasthan	CSH 23	20.50	106.00	Local	5.20	90.00
11	Shri Heera Lal S/o Lashaman Ji Gadari Village & Post: Changeri	0.25	Changeri	Changeri	Rajasthan	CSH 23	21.00	100.00	Local	7.00	88.00
12	Shri Bhagwan Ji S/o Bheru Ji Village & Post: Changeri	0.25	Changeri	Changeri	Rajasthan	CSH 23	24.00	112.00	Local	7.20	95.00
13	Shri Ratan Lal S/o Bhuru Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	CSH 23	27.50	120.00	Local	6.80	92.00
14	Shri Sawairam S/o Jalam Singh Ji Jat Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	SPV 1616	15.50	90.00	Local	4.60	70.00
15	Shri Bhagwan Ji S/o Bhairu Ji Jat Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	SPV 1616	16.50	92.00	Local	5.20	75.00
16	Shri Chenaram S/o Kishan Ji Meghawal Village & Post: Changeri	0.20	Changeri	Changeri	Rajasthan	SPV 1616	16.50	90.00	Local	6.00	72.00

S. No	Name	Area (ha)	Village	Name of the gram panchayat	State	Details of technology	Grain yield (q/ha)	Stover yield (q/ha)	Check	Grain yield (q/ha)	Stover yield (q/ha)
17	Shri Sohan Lal S/o Amar Chand Ji Jat Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	CSV 23	18.00	96.00	Local	5.50	75.00
18	Smt Laximi Bai W/o Banshi Ji Village & Post: Changeri	0.50	Changeri	Changeri	Rajasthan	SU 1080	22.00	110.00	Local	5.50	95.00
19	Shri Debu Ji S/o Bhura Ji Village & Post: Vishanpura	0.50	Vishanpura	Vishanpura	Rajasthan	SPV 1616	22.50	100.00	Local	4.50	100.00
20	Shri Gattu Bai S/o Bhura Ji Village & Post: Vishanpura	0.50	Vishanpura	Vishanpura	Rajasthan	SPV 1616	24.00	100.00	Local	5.00	90.00
21	Shri MADan Ji S/o Devi Lal Ji Village & Post: Vishanpura	0.50	Vishanpura	Vishanpura	Rajasthan	SU 1080	24.00	120.00	Local	4.80	88.00
22	Shri RAtan Ji S/o Devi Lal Ji Village & Post: Vishanpura	0.50	Vishanpura	Vishanpura	Rajasthan	SU 1080	21.00	118.00	Local	5.30	110.00
23	Shri Madho Ji S/o Gokul Ji Village & Post: Vishanpura	0.50	Vishanpura	Vishanpura	Rajasthan	SU 1080	25.00	124.00	Local	4.00	110.00
24	Shri Kishan Ji S/o Ganesh Ji Bunkar Village & Post: Vishanpura	0.40	Vishanpura	Vishanpura	Rajasthan	CSV 23	27.00	114.00	Local	6.00	110.00
25	Smt Ramti Devi W/o Heera ji Village & Post: Makadwali	1.00	Makadwali	Makadwali	Rajasthan	CSV 17	23.50	70.50	Local	4.50	90.00
26	Shri Vikram Singh S/o Gopal Singh ji Village & Post: Gothiyana	1.00	Gothiyana	Gothiyana	Rajasthan	CSV 17	23.70	68.00	Local	4.00	94.00
27	Shri Raghuvveer Singh S/o Sujan Singh Ji Village & Post: Mandawara	1.00	Mandawara	Mandawara	Rajasthan	CSV 17	24.00	65.00	Local	4.30	92.00
28	Shri Deva Ram S/o Village & Post: Dev Naar	1.00	Dev Naar	Dev Naar	Rajasthan	CSV 17	21.00	62.50	Local	4.00	88.00
29	Shri Narpat Singh S/o Mohan Singh Ji Village & Post: Narwar	1.00	Narwar	Narwar	Rajasthan	CSV 17	22.00	66.00	Local	4.50	98.00
30	Shri Ganga Ram S/o Kalyan Ji Village & Post: Padam Pura	1.00	Padam Pura	Padam Pura	Rajasthan	CSV 17	22.75	70.00	Local	4.75	100.50
31	Smt. Laxmi Devi W/o B.L. Verma Village & Post: Padam Pura	1.00	Padam Pura	Padam Pura	Rajasthan	CSV 17	24.00	72.00	Local	4.75	100.50
32	Shri HArdayal Siyb S/o Bhawani Singh Village & Post: Bhawani Khera	1.00	Bhawani Khera	Bhawani Khera	Rajasthan	CSV 17	23.15	64.00	Local	4.75	94.00
33	Shri Amar Singh S/o Nanak ji Chamar Village & Post: Banseli	1.00	Banseli	Banseli	Rajasthan	CSV 17	23.50	60.00	Local	5.00	96.00

S. No	Name	Area (ha)	Village	Name of the gram panchayat	State	Details of technology	Grain yield (q/ha)	Stover yield (q/ha)	Check	Grain yield (q/ha)	Stover yield (q/ha)
34	Shri Surendra Singh S/o Gopal Singh ji Village & Post: Gothiyana	1.00	Gothiyana	Gothiyana	Rajasthan	CSV 17	23.50	65.50	Local	5.25	95.00
35	Shri Naru Ji S/o Bajja Ram Jat Village: Bamania Khurd & Post: Railmagara	0.25	Bamania Khurd	Bamania Khurd	Rajasthan	SU 1080	22.00	125.00	Local	4.00	101.00
36	Shri Shanker Lal S/o Jawaharmal Jat Village: Bamania Khurd & Post: Railmagara	0.50	Bamania Khurd	Bamania Khurd	Rajasthan	SPV 1753	24.50	118.00	Local	4.50	102.50
37	Shri Chunni Lal S/o Nangi Ram Jat Village: Bamania Khurd & Post: Railmagara	0.50	Bamania Khurd	Bamania Khurd	Rajasthan	SPV 1616	25.00	110.00	Local	5.00	95.00
38	Smt Gaiind Kunwar W/o Jhunjhar Singh Village: Bamania Khurd & Post: Railmagara	1.00	Bamania Khurd	Bamania Khurd	Rajasthan	SPV 1616	25.00	110.00	Local	4.75	98.00
39	Shri Mahesh Chandra S/o Mangi Lal Paliwal Village : Pachamata & Post: Railmagara	1.00	Pachamata	Pachamata	Rajasthan	SPV 1753	25.00	115.00	Local	4.00	100.10
40	Shri Sohan Bai W/o Bhagwan Ji Village : Ganesh Pura & Post: Railmagara	0.25	Ganesh Pura	Ganesh Pura	Rajasthan	PJ 1430	23.00	110.50	Local	4.00	100.50
41	Shri Mangi Lal S/o Chagan Ji Jat Village : Ganesh Pura & Post: Railmagara	1.00	Ganesh Pura	Ganesh Pura	Rajasthan	PJ 1430	24.50	108.00	Local	4.50	110.75
42	Shri Shambhu Lal S/o Debu Ji Village : Ganesh Pura & Post: Railmagara	1.00	Ganesh Pura	Ganesh Pura	Rajasthan	PJ 1430	24.00	109.50	Local	4.75	100.50
43	Shri Laxi Bai W/o Badri Lal Village : Manohar Khedi & Post: Railmagara	1.00	Manohar Khedi	Manohar Khedi	Rajasthan	PJ 1430	23.00	110.50	Local	4.50	98.00
44	Shri Ganesh Ji S/o CHoga Ji Jat Village : Manohar Khedi & Post: Railmagara	1.00	Manohar Khedi	Manohar Khedi	Rajasthan	PJ 1430	23.50	100.00	Local	5.00	95.00
45	Shri Debu Ji S/o Chogga Ji Jat Village : Manohar Khedi & Post: Railmagara	1.00	Manohar Khedi	Manohar Khedi	Rajasthan	PJ 1430	23.00	100.00	Local	4.00	100.50
		28.70					996.10	4347.00		225.30	4064.85

S. No	Name	Area (ha)	Village	Name of the gram panchayat	State	Details of technology	Grain yield (q/ha)	Stover yield (q/ha)	Check	Grain yield (q/ha)	Stover yield (q/ha)
Centre : Indore											
46	Shri Bhagwan Das Pal S/o Loksman Pal	0.40	Udaipur	Udaipur	Madhya Pradesh	JJ 1041	30.60	100.00	Local	24.50	81.00
47	Shri Ram Deen Kushwaha S/o Fodal Singh Kushwaha	0.40	Udaipur	Udaipur	Madhya Pradesh	JJ 1041	28.50	90.00	Local	22.00	65.00
48	Sri Kedar Singh Bagel, Chhotelal	0.40	Udaipur	Udaipur	Madhya Pradesh	JJ 1041	25.50	90.00	Local	20.60	75.00
49	Rajendra Bagel / Ramnath bagel	0.40	Hiri	Hiri	Madhya Pradesh	JJ 1041	27.50	98.50	Local	21.50	80.00
50	Devki Prasad Shrivastava / Munga Ram Badrali	0.40	Bhandrali	Bhandrali	Madhya Pradesh	JJ 1041	28.50	102.00	Local	19.80	75.00
51	Prasad Bagel Sukdev	0.40	Udaipur	Udaipur	Madhya Pradesh	JJ 1041	34.50	120.00	Local	24.60	90.60
52	Laxmi Narayan / Mansha Ram Prapati,	0.40	Udaipur	Udaipur	Madhya Pradesh	JJ 1041	26.00	95.60	Local	18.80	70.50
53	Suresh Prajapati / Chhokhelal	0.40	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ 1041	26.00	100.00	Local	19.60	75.00
54	Bherulal / Sukhlal	0.40	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ 1022	16.10	65.50	Local	15.00	45.00
55	Ramesh Chand /Devilal	0.40	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ 1022	17.7-	56.40	Local	15.40	47.50
56	Umesh Singh/ Raghunath	0.40	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ 1022	16.50	51.00	Local	15.10	46.00
57	Shrilalji /Gopilal	0.40	Sukwa	Sukwa	Madhya Pradesh	JJ 1022	17.90	54.20	Local	15.60	47.50
58	Umar Singh / Prabhulal	0.40	Satagaon	Satagaon	Madhya Pradesh	JJ 1022	16.30	49.00	Local	14.80	43.40
59	Satendra Singh	0.40	Genera	Genera	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
60	Smt Malti Singh	0.40	Genera	Genera	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
61	Smt Rammurti	0.40	Genera	Genera	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
62	Dwarika Prasad Pateria	0.40	Genera	Genera	Madhya Pradesh	JJ 1022	12.00	38.00	Local	9.00	30.00
63	Tiju Kori	0.40	Karari	Karari	Madhya Pradesh	JJ 1022	Failed	0.00-	Local	0.00	0.00
64	Jugulkishore	0.40	Baghera	Baghera	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
65	Harnarayan Sachan	0.40	Bamitha	Bamitha	Madhya Pradesh	JJ 1022	15.00	46.00	Local	11.00	34.00
66	Nathuram Dixit	0.50	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ 1022	30.00	91.00	Local	20.00	54.00
67	M.S.Bhando	0.50	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ 1022	28.25	73.00	Local	25.00	70.00
68	Eliyas Ahmad	0.50	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ1022	25.33	76.00	Local	16.00	52.00
69	Omprakash Vishkarma	0.50	Mausahaniya	Mausahaniya	Madhya Pradesh	JJ 1022	28.65	84.00	Local	18.00	55.00
70	Akchyal Ahirwal	0.50	Sukwa	Sukwa	Madhya Pradesh	JJ 1022	29.00	85.00	Local	20.00	61.00
71	RamKishan Yadav	0.40	Rajpur	Rajpur	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
72	Ramratan Yadav	0.40	Rajpur	Rajpur	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
73	Narayani	0.40	Daverdchi	Daverdchi	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
74	Bhagirath	0.40	Sanora	Sanora	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
75	Raju Sharma	0.40	Sanora	Sanora	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
76	Chhatrapal Pateria	0.40	Sanora	Sanora	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
77	Vanmali /Vanshankar	0.40	Sanora	Sanora	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00

S. No	Name	Area (ha)	Village	Name of the gram panchayat	State	Details of technology	Grain yield (q/ha)	Stover yield (q/ha)	Check	Grain yield (q/ha)	Stover yield (q/ha)
78	Chhotelal	0.40	Sanora	Sanora	Madhya Pradesh	JJ 1022	Failed	0.00	Local	0.00	0.00
79	Bheem Jhadav (Lasudia)	0.40	Sanwrer	Sanwrer	Madhya Pradesh	JJ 1022	25.00	76.00	Local	17.00	52.00
80	Rajesh Paliwal	0.40	Bhopal	Bhopal	Madhya Pradesh	JJ 1022	26.00	82.00	Local	16.50	49.00
81	Vimal Bhandari	0.40	Indore	Indore	Madhya Pradesh	JJ 1022	19.50	62.00	Local	12.50	37.00
82	Lakshman /Narayan	0.40	Indore	Indore	Madhya Pradesh	JJ 1022	23.00	68.00	Local	15.00	46.00
83	Nimal Bhandari	0.40	Indore	Indore	Madhya Pradesh	JJ 1022	28.00	76.00	Local	18.00	53.00
84	Sunil /Narayan	0.40	Indore	Indore	Madhya Pradesh	JJ 1022	26.00	81.00	Local	19.00	56.00
85	Ramchand /Ramsingh	0.40	Sanwrer	Sanwrer	Madhya Pradesh	JJ 1022	23.60	71.00	Local	17.00	52.50
		16.50					633.23	2081.20		481.30	1543.00
Centre : Dharwad											
86	Sri Sharanappa, Amminabhavi	0.4	Marewad	Marewad	Karnataka	CSH 23 *	26.2	75.6	CSH 23 **	25.8	68
87	Sri Ramesh Doddawad	0.4	Madhanabhavi	Madhanabhavi	Karnataka	CSH 23 *	24.8	70	CSH 23 **	23.2	68
88	Sri Prakash Sangolli	0.4	Garag	Garag	Karnataka	CSH 23 *	25.6	78	CSH 23 **	25.3	70
89	Sri Shivanagonda Patil	0.4	Jogellapur	Jogellapur	Karnataka	CSH 23 *	25.4	76	CSH 23 **	23	67
90	Sri Nagesh Bairannavar	0.4	Narendra	Narendra	Karnataka	CSH 23 *	23.8	80	CSH 23 **	24.5	71
		2					125.8	379.6		121.8	344

CSH 23 * Indicates that improved practice in which sowing was done at 45 cm rows and opening furrow at 21 Days after sowing Dharwad; CSH 23 ** Indicates that Farmer's practice at Dharwad