

## Nucleus, Breeder seed production, Mega seed project & Distinctness, uniformity and stability (DUS) - Kharif, 2016-17

Hariprasanna K., Aruna C., B Venkatesh Bhat, Amasiddha Bellundagi, Raghunath Kulakarni and P. Suresh  
coordinating with concerned centers

### Contents

<b>Sorghum breeder seed production 2016-17</b> .....	<b>1</b>
Executive summary .....	1
Total sorghum breeder seed production during 2016-17.....	1
Seed production at IIMR, Hyderabad during 2016-17 .....	1
Nucleus seed production .....	2
Information on participatory seed production.....	2
Nucleus and breeder seed production allocation for the year 2017-18 .....	2
<b>Distinctness, uniformity and stability (DUS) testing of Sorghum – 2016-17</b> .....	<b>11</b>
Technical progress .....	11
Candidate varieties under DUS testing.....	11
Reference varieties under maintenance breeding .....	11
Monitoring of DUS testing trials and recommendations.....	11
DUS Project review meeting - 2017.....	12
Plan for 2017-18 .....	12



### Sorghum breeder seed production 2016-17

#### Executive summary

During 2016-17 a total of 239.27 q breeder seed was produced against BSP-I allocation of 98.11 q. A total of 1247 kg nucleus seed was produced against allocation of 1283 kg. In farmers participatory seed production, a total of 1166q seed was produced. The tentative center wise allocation of sorghum breeder and nucleus seed production has been made for 2017-18 across 14 locations based on DAC indent received for the year 2017-18.

#### Total sorghum breeder seed production during 2016-17

The total breeder seed production during 2016-17 by AICSIP centers was 239.27 which is 141.16q (243%) more than DAC indent (98.11 q) and 137.64 (235%) more than BSP-I allocation (101.63 q). There was surplus production of breeder seed for most of the allocated lines and varieties of sorghum at ten AICSIP centers in Kharif and four centers in Rabi seasons during 2016-17. There was shortfall in production of fodder lines Pratap Chari 1080 from Udaipur, Pusa Chari 23 from IARI, Co (FS) 29 from Coimbatore centers. Whereas Co (FS)31F and SPV 2242MF were not yet notified. The shortfall in the production of CSV 23 and MP Chari, from different centers was abridged by IIMR, Hyderabad with additional production of these cultivars. The centre-wise and variety-wise breeder seed production (quintals) of sorghum during 2016-17 is presented at Table 1A&B (Grain sorghum) and 2A&B (Fodder sorghum).

#### Seed production at IIMR, Hyderabad during 2016-17

At IIMR, Hyderabad, during 2016-17 total breeder seed production under BSP/MSP crops was 123.53 q which is 106.61 (730%) more than DAC indent (16.92q) and 105.66q (691%) more than BSP-I allocation (17.87 q).

**Breeder seed production at IIMR, Hyderabad during 2016-17**

Location & Season	Name of the variety / parental line	DAC Indent	Quantities to be Produced (quintals)-BSP I	Production	Surplus(+)/Deficit (-) over DAC
IIMR, Hyderabad (Rabi)	296A	0.69	0.70	1.00	0.31(+)
	296B	0.40	0.50	0.50	0.10(+)
	CS 3541	0.32	0.35	0.50	0.18(+)
	C 43	0.25	0.30	10.00	9.75(+)
	CSV 15	2.20	2.50	5.00	2.80(+)
	CSV 20	6.40	6.50	30.00	23.60(+)
	CSV 24SS	0.10	0.10	0.50	0.40(+)
	CSV 27	6.20	6.50	10.00	3.80(+)
	38 A	0.01	0.01	0.02	0.01(+)
	38 B	0.01	0.01	0.01	0.00
	415A	0.16	0.20	0.50	0.34(+)
	415B	0.09	0.10	0.20	0.11(+)
	CB 33	0.09	0.10	0.30	0.21(+)
	Revathi	0.00	0.00	17.00	17.00(+)
Co(FS)29	0.00	0.00	1.00	1.00(+)	
<b>A.</b>	<b>Total</b>	<b>16.92</b>	<b>17.87</b>	<b>76.53</b>	<b>59.61(+)</b>
IIMR Hyderabad (Contingency plan to fulfill the deficient from other centers)	CSV 32F	0	0	5.00	5.00(+)
	PMS 28A	0	0	2.00	2.00(+)
	PMS 28B	0	0	1.00	1.00(+)
	CSV 23	0	0	17.00*	17.00(+)
	Phule Revati	0	0	17.00	17.00(+)
	MP Chari	0	0	4.00*	4.00(+)
	Co (FS)29	0	0	1.00	1.00(+)
<b>B.</b>	<b>Total</b>	<b>0</b>	<b>0</b>	<b>47.00</b>	<b>47.00(+)</b>
<b>A+B</b>	<b>Grand Total</b>	<b>16.92</b>	<b>17.87</b>	<b>123.53</b>	<b>106.61(+)</b>

**Nucleus seed production**

The nucleus seed was produced as per the targets by most of the centers (Table 3).

**Information on participatory seed production**

At IIMR, Hyderabad, different classes of seeds are produced in leased farmers' field in Telangana, Andhra Pradesh and at SFCI farm, Jawalagera because of land isolation limitations. Both public and private sector seed producers were involved in seed production. In view of the isolation requirements, we have produced the quality seed of CSV 17, CSV 20, CSV 23, CSV 27, CSV 32F, Phule Revati, Co(FS) 29, , SSV 74 and CSH 22SS and in SFCI, Jawalagera farm and in leased farmers fields under strict quality control of IIMR scientists and officials from Telangana, Andhra Pradesh and Karnataka seed certification agencies. A total of 1166 q of different class of seed was produced under mega seed project and the details are as given in table 4

**Nucleus and breeder seed production allocation for the year 2017-18**

The tentative allocation of sorghum breeder and nucleus seed production for 2017-18 as per BSP I allocation based on DAC Indent (q) for the year 2017-18 is given in Table 5 and 6, respectively.

**Table 1A: Centre-wise breeder seed production (quintals) of grain sorghum during 2016-17**
*(in quintals)*

S. No.	Name of the Producing state/centre	Name of the variety / parental line	DAC indent	Allotment BSP I	Production	Surplus/Deficit over DAC Indent	
1.	Maharashtra	Dr. PDKV, Akola	AKMS 30A	0.25	0.30	0.37	0.12(+)
		30B	0.15	0.20	0.41	0.26(+)	
		AKR 504	0.15	0.20	0.21	0.06(+)	
		AKMS 14A	0.10	0.12	0.22	0.12(+)	
		14B	0.07	0.10	0.16	0.09(+)	
		AKR 150	0.07	0.10	0.32	0.25(+)	
		AKMS 30A	0.07	0.10	0.14	0.07(+)	
		30B	0.05	0.05	0.12	0.07(+)	
		AKR 456	0.05	0.05	0.19	0.14(+)	
		PKV Ashwini	0.04	0.05	0.21	0.17(+)	
		PKV Kranti	6.60	6.80	7.00	0.40(+)	
		<b>Total</b>	<b>7.60</b>	<b>8.07</b>	<b>9.35</b>	<b>1.75(+)</b>	
		VNMKV, Parbhani	PMS 28A	0.05	0.05	0.07	0.02(+)
			PMS 28B	0.03	0.05	0.05	0.02(+)
PVK 809	0.04		0.05	0.10	0.06(+)		

S. No.	Name of the Producing state/centre	Name of the variety / parental line	DAC Indent	Allotment BSP I	Production	Surplus/Deficit over DAC Indent
		CSV 18	1.60	1.80	20.00	18.40(+)
		Parbhani Moti	10.50	11.00	70.00	59.50(+)
		<b>Total</b>	<b>12.12</b>	<b>12.95</b>	<b>90.22</b>	<b>78.00(+)</b>
	MPKV, Rahuri	RSSH 50 A line	0.50	0.50	0.50	0.00
		RSSH 50 B line	0.25	0.25	0.25	0.00
		RSSH 50 R line	0.25	0.25	0.25	0.00
		Phule Rohini	1.00	1.00	1.00	0.00
		Phule Madhur	1.00	1.00	1.00	0.00
		Phule Suchitra	1.10	1.10	1.10	0.00
		Phule Revati	4.00	4.00	4.00	0.00
		Phule Anuradha	1.20	1.20	1.20	0.00
		Vasudha	1.45	1.50	1.50	0.05(+)
		Phule Chitra	0.90	1.00	1.00	0.10(+)
		Phule Maulee	0.01	0.01	0.01	0.00
		CSV 216R	0.10	0.15	0.15	0.05(+)
		<b>Total</b>	<b>11.76</b>	<b>11.96</b>	<b>11.96</b>	<b>0.20(+)</b>
	CRS, Solapur	CSV 26	0.30	0.30	0.30	0.00
		<b>Sub total</b>	<b>31.88</b>	<b>33.28</b>	<b>111.83</b>	<b>79.95(+)</b>
2.	<b>Rajasthan</b>					
	MPUA&T, Udaipur	CSV 17	0.20	0.30	0.30	0.10(+)
		CSV 23	5.36	5.50	0.23+17.00*	11.87(+)
		<b>Total</b>	<b>5.56</b>	<b>5.80</b>	<b>17.53</b>	<b>11.97(+)</b>
	<b>Telangana</b>					
	IIMR, Hyderabad	296A	0.69	0.70	1.00	0.31(+)
		296B	0.40	0.50	0.50	0.10(+)
		CS 3541	0.32	0.35	0.50	0.18(+)
		C 43	0.25	0.30	10.00	9.75(+)
		CSV 15	2.20	2.50	5.00	2.80(+)
		CSV 20	6.40	6.50	30.00	23.60(+)
		CSV 24SS	0.10	0.10	0.50	0.40(+)
		CSV 27	6.20	6.50	10.00	3.80(+)
		38 A	0.01	0.01	0.02	0.01(+)
		38 B	0.01	0.01	0.01	0.00
		415A	0.16	0.20	0.50	0.34(+)
		415B	0.09	0.10	0.20	0.11(+)
		CB 33	0.09	0.10	0.30	0.21(+)
		Revathi	0.00	0.00	17.00	17.00(+)
		Co(FS)29	0.00	0.00	1.00	1.00(+)
		<b>Total</b>	<b>16.92</b>	<b>17.87</b>	<b>76.53</b>	<b>59.61(+)</b>
	<b>Karnataka</b>					
	RARS, Bijapur	M 35-1	2.95	3.00	3.00	0.05(+)
		<b>Total</b>	<b>2.95</b>	<b>3.00</b>	<b>3.00</b>	<b>0.05(+)</b>
		<b>Grand total</b>	<b>57.31</b>	<b>59.95</b>	<b>208.89</b>	<b>151.58(+)</b>

Table 1B: variety-wise breeder seed production (quintals) of grain sorghum during 2016-17

(in quintals)

S.No.	Hybrids/Varieties	Year of Notification	DAC Indent	Allocation BSP I	Production	Surplus/Deficit over DAC Indent
	Sorghum Grain					
	Hybrids					
	CSH 9	1982				
	296A		0.69	0.70	1.00	0.31(+)
	296B		0.40	0.50	0.50	0.10(+)
	CS 3541		0.32	0.35	0.50	0.18(+)
I.	CSH 14	1992				
	AKMS 14A		0.10	0.12	0.22	0.12(+)
	14B		0.07	0.10	0.16	0.09(+)
	AKR 150		0.07	0.10	0.32	0.25(+)
	CSH 16	1997				
	C 43		0.25	0.30	10.00	9.75(+)
	CSH 22SS	2005				
	38 A		0.01	0.01	0.02	0.01(+)
	38 B		0.01	0.01	0.01	0.00
II.	CSH 25	2008				

	PMS 28A		0.05	0.05	0.07	0.02(+)
	PMS 28B		0.03	0.05	0.05	0.02(+)
	<b>CSH 30</b>	2013				
	415A		0.16	0.20	0.50	0.34(+)
	415B		0.09	0.10	0.20	0.11(+)
	CB 33		0.09	0.10	0.30	0.21(+)
<b>III.</b>	<b>SPH 1635</b>	201				
	AKMS 30A		0.07	0.10	0.14	0.07(+)
	30B		0.05	0.05	0.12	0.07(+)
	AKR 456		0.05	0.05	0.19	0.14(+)
<b>IV.</b>	<b>SPH 1705</b>	201				
	AKMS 30A		0.25	0.30	0.37	0.12(+)
	30B		0.15	0.20	0.41	0.26(+)
	AKR 504		0.15	0.20	0.21	0.06(+)
	<b>RSSH 50</b>					
	RSSH 50 A line		0.50	0.50	0.50	0.00
	RSSH 50 B line		0.25	0.25	0.25	0.00
	RSSH 50 R line		0.25	0.25	0.25	0.00
	<b>Varieties</b>					
1	CSV 15	1996	2.20	2.50	5.00	2.80(+)
2	CSV 17	2009	0.20	0.30	0.30	0.10(+)
3	CSV 18	2009	1.60	1.80	20.00	18.40(+)
4	CSV 20	2009	6.40	6.50	30.00	23.60(+)
5	CSV 23	2008	5.36	5.50	0.23+17.00*	11.87(+)
6	CSV 24SS	2011	0.10	0.10	0.50	0.40(+)
7	CSV 26	2012	0.30	0.30	0.30	0.00
8	CSV 27	2012	6.20	6.50	10.00	3.80(+)
9	M 35-1	1984	2.95	3.00	3.00	0.05(+)
1	Parbhani Moti	1984	10.50	11.00	70.00	59.50(+)
1	Phule Rohini		1.00	1.00	1.00	0.00
1	Phule Madhur		1.00	1.00	1.00	0.00
1	Phule Suchitra	2015	1.10	1.10	1.10	0.00
1	Phule Revati	2012	4.00	4.00	21.00	17.00(+)
1	Phule Anuradha	2010	1.20	1.20	1.20	0.00
1	Vasudha	2008	1.45	1.50	1.50	0.05(+)
1	Phule Chitra	2008	0.90	1.00	1.00	0.10(+)
1	Phule Maulee	2000	0.01	0.01	0.01	0.00
1	CSV 216R	2000	0.10	0.15	0.15	0.05(+)
2	Co (FS) 29	2001	0.00	0.00	1.00	1.00(+)
2	PKV Kranti	2008	6.60	6.80	7.00	0.40(+)
2	PKV Ashwini	2013	0.04	0.05	0.21	0.17(+)
2	PVK 809	2004	0.04	0.05	0.10	0.06(+)
	<b>Total</b>		<b>57.31</b>	<b>59.95</b>	<b>208.89</b>	<b>151.58(+)</b>

Table 2A: Centre-wise breeder seed production (quintals) of fodder sorghum during 2016-17  
(in quintals)

S. No.	Name of the Producing state/centre	Name of the variety / parental line	DAC indent	Allotment BSP I	Production	Surplus/Deficit over DAC Indent
1.	<b>Madhyapradesh</b>					
	JNKVV, Indore	MP Chari	4.40	4.50	2.00+4.00*	1.60(+)
		<b>Total</b>	<b>4.40</b>	<b>4.50</b>	<b>6.00</b>	<b>1.60(+)</b>
2.	<b>Rajasthan</b>					
	MPUA&T, Udaipur	Pratp Chari 1080	10.00	10.00	7.10	2.90(-)
		<b>Total</b>	<b>10.00</b>	<b>10.00</b>	<b>7.10</b>	<b>2.90(-)</b>
3.	<b>New Delhi</b>					
	IARI, Regional station, Karnal	Pusa Chari 9	0.50	0.60	1.00	0.5(+)
		Pusa Chari 23	7.00	7.00	3.85	3.15(-)
		Pusa Chari 6	0.00	0.00	0.41	0.41(+)
		<b>Total</b>	<b>7.50</b>	<b>7.60</b>	<b>5.26</b>	<b>2.24(-)</b>
4.	<b>Uttarakhand</b>					
	GBPU&AT, Pantnagar	467 A	0.41	0.42	0.45	0.04(+)
		467 B	0.23	0.24	0.25	0.02(+)
		UPMC 503	1.18	1.20	2.50	1.32(+)
		2219A	0.01	0.01	0.01**	0.00
		2219B	0.01	0.01	0.01**	0.00
		Pant Chari 5	2.50	2.50	3.00	0.50(+)
		<b>Total</b>	<b>4.34</b>	<b>4.38</b>	<b>6.22</b>	<b>1.88(+)</b>
5.	<b>Haryana</b>					

S. No.	Name of the Producing state/centre	Name of the variety / parental line	DAC indent	Allotment BSP I	Production	Surplus/Deficit over DAC Indent
	CCS&HAU, Hisar	Haryana Jawar 513	0.80	1.00	1.50	0.70(+)
		HC 136	0.50	0.50	0.50	0.00
		SSG 59-3	0.06	0.10	0.20	0.14(+)
		<b>Total</b>	<b>1.36</b>	<b>1.60</b>	<b>2.20</b>	<b>0.84(+)</b>
<b>6.</b>	<b>Punjab</b>					
	PAU, Ludhiana	2077A	0.30	0.30	0.30	0.00
		2077B	0.15	0.15	0.15	0.00
		SGL 87	0.15	0.15	0.15	0.00
		<b>Total</b>	<b>0.60</b>	<b>0.60</b>	<b>0.60</b>	<b>0.00</b>
<b>7.</b>	<b>Tamilnadu</b>					
	TNAU, Coimbatore	CO(FS) 29	5.80	6.00	3.00	2.80(-)
		Co(FS) 31	1.00	1.00	***	1.00(-)
		SPV 2242MF	5.80	6.00	***	5.80(-)
		<b>Total</b>	<b>12.6</b>	<b>13.00</b>	<b>3.00</b>	<b>9.60(-)</b>
		<b>Grand Total</b>	<b>40.80</b>	<b>41.68</b>	<b>30.38</b>	<b>10.42(-)</b>

Table 2 B: variety-wise breeder seed production (quintals) of fodder sorghum during 2016-17  
(in quintals)

S.No.	Hybrids/Varieties	Year of Notification	DAC Indent	Allocation BSP I	Production	Surplus/Deficit over DAC Indent
	<b>Sorghum Fodder</b>					
	<b>Hybrids</b>					
I.	<b>CSH 20MF</b>	<b>2005</b>				
	2219A		0.01	0.01	0.01**	0.00
	2219B		0.01	0.01	0.01**	0.00
II.	<b>CSH 24MF</b>	<b>2009</b>				
	467 A		0.41	0.42	0.45	0.04(+)
	467 B		0.23	0.24	0.25	0.02(+)
	UPMC 503		1.18	1.20	2.50	1.32(+)
III.	<b>Punjab Sudex Chari 1</b>	<b>1995</b>				
	2077A		0.30	0.30	0.30	0.00
	2077B		0.15	0.15	0.15	0.00
	SGL 87		0.15	0.15	0.15	0.00
	<b>Varieties</b>					
1.	MP Chari	1978	4.40	4.50	2.00+4.00*	1.60(+)
2.	Pratap Chari 1080	2011	10.00	10.00	7.10	2.90(-)
3.	Pusa Chari 9	1985	0.50	0.60	1.00	0.5(+)
4.	Pusa Chari 23	1985	7.00	7.00	3.85	3.15(-)
5.	Pusa Chari 6	1980	0.00	0.00	0.41	0.41(+)
6.	Pant Chari 5	1999	2.50	2.50	3.00	0.50(+)
7.	Haryana Jawar 513	2007	0.80	1.00	1.50	0.70(+)
8.	HC 136	1982	0.50	0.50	0.50	0.00
9.	SSG 59-3		0.06	0.10	0.20	0.14(+)
10.	CO(FS) 29	2001	5.80	6.00	3.00	2.80(-)
11.	Co(FS) 31		1.00	1.00	***	1.00(-)
12.	SPV 2242MF		5.80	6.00	***	5.80(-)
	<b>Total</b>		<b>40.80</b>	<b>41.68</b>	<b>30.38</b>	<b>10.42(-)</b>

\*\*\* Variety yet to be notified; \*\* Sufficient nucleus seed is available; \* Surplus seed produced by IIMR, Hyderabad to compensate deficit in production at other centers

Table 3: Centre-wise nucleus seed production (kg) of sorghum during 2016-17

S. No.	Centre	Parental line / variety	Allocation	Actual production	Production surplus (+) Deficit (-)
1.	MPKV, Rahuri	Phule Rohini	5	5	0
2.		Phule Madhur	5	7	2(+)
3.		185A	10	20	10(+)
4.		185B	5	10	5(+)
5.		RSSV 260	5	5	0
6.		RSV 9R/ Swathi	10	10	0
7.		Selection 3	5	5	0
8.		CSV 216R	10	10	0
9.		CSV 19SS	15	15	0
10.		SSV 84	15	15	0
11.		CSV 22	15	15	0
12.		Phule Revati	15	15	0
13.		Phule Anuradha	15	15	0
14.		Phule Vasudha	15	15	0
15.		Phule Chitra	15	15	0



16.		Phule Panchami	10	10	0
17.	PDKV, Akola	AKMS 30A	20	20	0
18.		AKMS 30B	10	10	0
19.		AKR 456	10	10	0
20.		AKR 504	10	10	0
21.		AKMS 14A	20	20	0
22.		AKMS 14B	10	10	0
23.		AKR 150	10	10	0
24.		AKR 73	10	10	0
25.		R 354	10	10	0
26.		AK 70A	10	10	0
27.		AK 70B	5	5	0
28.		AKSV 13R	10	10	0
29.		VNMKV, Parbhani	PVK 400	5	5
30.	CSV 18		5	5	0
31.	PMS 28 A		15	15	0
32.	PMS 28 B		10	10	0
33.	C-43		10	10	0
34.	Parbhani Moti		15	15	0
35.	Parbhani Swetha		15	15	0
36.	JNKVV, Indore	IMS 9A	15	15	0
37.		IMS 9B	15	15	0
38.		Indore 12	15	15	0
39.		M.P.Chari	50	50	0
40.		CSV 13	10	10	0
41.		CSV 15	10	10	0
42.		Bundela	5	5	0
43.	VNMKVA&T, Udaipur	AKMS 14A	10	10	0
44.		AKMS 14B	5	5	0
45.		AKR 150	5	5	0
46.		CSV 10	5	5	0
47.		CSV 15	10	10	0
48.		CSV 17	10	10	0
49.		SU 556 (SPV 1430)	5	5	0
50.		CSV 23	20	20	0
51.		Pratap Chari 1080	10	10	0
52.	GBPUA&T, Pantnagar	2219A	10	10	0
53.		2219B	5	5	0
54.		UPMC 503 (PC 6)	20	20	0
55.		ICS467A	10	10	0
56.		ICS467B	5	5	0
57.		Pant Chari 7	5	5	0
58.		Pant Chari 8	5	5	0
59.	IIMR, Hyderabad	2077A	10	10	0
60.		2077B	5	5	0
61.		2219A	10	10	0
62.		2219B	5	5	0
63.		CS 3541	5	5	0
64.		296A	10	10	0
65.		296B	5	5	0
66.		RS 29	5	5	0
67.		27A	10	10	0
68.		27B	5	5	0
69.	C 43	5	5	0	
70.	RS 673	5	5	0	
71.	CSV 14R	5	5	0	
72.	CSV 15	15	15	0	
73.	CSV 20 (SPV 1616)	15	15	0	
74.	ICSA 38	10	10	0	
75.	ICSB 38	5	5	0	
76.	SSV 84	10	10	0	
77.	MS 7A	10	10	0	
78.	MS 7B	5	5	0	
79.	RS 627	5	5	0	
80.	CSV 32F	10	20	10(+)	
81.	CSV 27	10	10	0	
82.	CSV 24SS	5	5	0	
83.	415 A	5	5	0	
84.	415 B	5	5	0	
85.	CB 33	5	5	0	
86.	279 A	5	5	0	
87.	279B	5	5	0	

88.		CB 11	5	5	0
89.	ANGRAU, Hyderabad	SPV 462	10	10	0
90.		NTJ 2	10	10	0
91.		Kinnera	5	5	0
92.		Srisaila	5	5	0
93.	ICRISAT, Patancheru	MR 750	3	3	0
94.		ICSV 745	3	3	0
95.		CSV 13	6	6	0
96.		ICSA 38	10	10	0
97.		ICSB 38	5	5	0
98.	RARS, Bijapur	M 35-1	30	30	0
99.		CSV 29R (SPV 2033)	20	22	2(+)
100.	CRS, Solapur	104A	5	5	0
101.		104B	5	5	0
102.		RS 585	5	5	0
103.		CSV 26	15	15	0
104.	UAS, Dharwad	M 148-138	5	5	0
105.		SSV 74	10	10	0
106.		DSV 4	15	15	0
107.		DSV 6	5	5	0
108.	PAU, Ludhiana	2077A	15	15	0
109.		2077B	10	10	0
110.		SGL 87	10	10	0
111.	CCSHAU, Hisar	SSG 59-3	25	25	0
112.		HJ 513	25	25	0
113.		HC 136	10	10	0
114.		HC 171	10	10	0
115.		HC 308	25	25	0
116.	TNAU, Coimbatore	CO FS 29	25	25	0
117.		CO FS 31	25	25	0
118.		SPV 2242	25	32	7(+)
119.		K 11	15	15	0

**Table: 4 Certified, labeled, foundation and breeder and seed target and achievements under participatory seed production programme of ICAR Seed Project**

S.No.	Varieties	Quantity (Quintals)
1.	CSV 17	33
2.	CSV 20	100
3.	CSV 27	72
4.	CSV 32F	5
5.	Phule Revathi	17
6.	MPCcahri	9
7.	Co (FS) 29	1
8.	PMS 28A	5
9.	PMS 28B	1
10.	SSV 74	20
11.	CSH 22SS	3
12.	CSH 24MF	900
	<b>Total</b>	<b>1166</b>

**Table :5 National (DAC) Tentative Indent for Sorghum Breeder Seed Production and BSP-I Allocation for 2017-18**  
(www.seednet.gov.in)

S. No.	Location & Season	Name of the Nodal Officer	Name of the variety / parental line	DAC Indent	Quantities to be Produced (quintals)-BSP I	Organization for whom seed is to be produced	Member of monitoring team
1.	Dr. PDKV, Akola (Kharif)	Dr.RB Gharode Sr. Sorghum Breeder	30A	0.15	0.15	Mah(0.10), Kar(0.05),	Dr.RB Ghorade, PDKV, Akola, * Dr Usha Saxena, AICSIP, Indore. Seed Cert.Officer,MSSCA, Akola. Regional Manager,NSC, Akola
			30B	0.10	0.10	Mah(0.05), Kar(0.05),	
			AKR 456	0.10	0.10	Mah(0.05)	
			AKR 504	0.10	0.10	Mah(0.05)	
			AKMS 14A	0.16	0.20	Mah(0.05)	
			14B	0.10	0.15	Mah(0.07),Kar(0.03)	
			AKR 150	0.10	0.15	Mah(0.07),Kar(0.03)	
			PKV Kranti	0.20	0.25	Mah(0.20)	
2.	MAU, Parbhani (Kharif)	Dr. H V Kalpande Sr. Sorghum Breeder	PKV Ashwini	0.05	0.10	Mah(0.05)	Dr. Kalpande, MAU, Parbhani. *Dr. Parusuram P, CRS, Solapur Seed Cert.Officer,MSSCA, Akola.
			MS 6937A	0.10	0.10	Mah(0.10)	
			MS 6937B	0.05	0.05	Mah(0.05)	
			KR 196	0.05	0.05	Mah(0.05)	
			PMS 28A	0.50	0.60	Mah(0.50)	
			PMS 28B	0.25	0.30	Mah(0.25)	
			C 43	0.25	0.30	Mah(0.25)	



			CSV 18	0.20	0.25	Mah(0.20)	Regional Manager,NSC, Akola			
			Parbhani Moti	2.05	2.20	Mah(1.00), NSC (0.05), NSAI(1.00)				
			PVK 809	0.05	0.10	Mah(0.05)				
3.	JNKVV, Indore (Kharif)	Dr Kataria / Dr Usha Saxena / Sr. Sorghum Breeder	MP Chari	0.10	0.20	NSC(0.10)	Dr Usha Saxena, AICSIP, Indore. *DR. NS dodiya, MPUA&T, Udaipur Seed Cert.Officer,MPSSCA. Regional Manager,NSC, Indore			
			JJ 938	0.60	0.80	MP (0.60)				
			JJ 1041	2.60	2.80	MP (2.60)				
						Bundela	0.20	0.25	UP(0.10),MP (0.10)	
						RVJ 1862				
						RVICSH 28 A line				
						RVICSH 28 B				
			RVICSH 28 R							
4.	MPUAT, Udaipur (Kharif)	DR.NS Dodiya Sr. Sorghum Breeder	Pratp Chari 1080	5.25	5.50	Raj(5.00), NSAI(0.25)	DR. NS Dodiya MPUAT, Udaipur *Dr Usha saxena, Indore. Seed Cert.Officer,RSSCA, Jaipur. Regional Manager, NSC, Karasthan			
			CSV 17	5.20	5.50	Raj(5.00) , NSAI(0.20)				
			CSV 23	5.28	5.50	Raj(5.00), NSC(0.10), UP(0.10), MP (0.08)				
5.	IIMR, Hyderabad (Rabi)	Dr.B.Venkatesh Bhat Principal Scientist	296A	0.60	0.80	Mah(0.60)	Dr. B Venkatesh Bhat, IIMR, Hyderabad, Dr Umakanth, IIMR, Hyd ICAR Nominee Seed Cert. Officer, APSSCA, Hyd Regional Manager, NSC, Secunderabd			
			296B	0.40	0.50	Mah(0.40)				
			CS 3541	0.30	0.40	Mah(0.20), Mah(0.10),				
			C 43	0.23	0.30	Mah(0.23)				
			CSV 15	2.80	3.00	Raj (2.00)MP(0.70), NSAI(0.10)				
			CSV 20	5.37	5.50	Raj(5.00), MPO(0.08), TN(0.09).UP(0.10),NSAI(0.10)				
			CSV 24SS	5.10	5.50	Raj(5.00), MP(0.10)				
			CSV 27	0.10	0.15	NSC(0.10)				
			38 A	0.30	0.30	NDDDB(0.30)				
			38 B	0.10	0.10	NDDDB(0.10)				
			SSV 84	0.10	0.20	NDDDB(0.10)				
			279A	0.05	0.10	Mah(0.05)				
			279B	0.03	0.03	Mah(0.03)				
			CB 11	0.03	0.05	Mah(0.03)				
415A	0.05	0.10	Mah(0.05)							
415B	0.02	0.05	Mah(0.02)							
CB 33	0.01	0.05	Mah(0.01)							
6.	CRS,Solapur	Dr KK Sharma	CSV 26	0.20	0.30	Mah(0.20)	Dr.KK Sharma, CRS, Solapur, * Dr B Venkatesh Bhat.IIMR ,Hyderabad Seed Cert.Officer, MSSCA, Solapur. Regional Manager,NSC, Solapur			
7.	PJTSAU Palem/Hyderabad (Rabi)	Director (Seeds). PJTSAU	CSV 31	0.30	0.50	AP (0.30)	Director (Seeds). PJTSAU, Dr. BV Bhat, IIMR, Hyderabad Seed Cert. Officer, TSSCA, Hyd Regional Manager, NSC, Secunderabd			
8.	RARS, Bijapur (Rabi)	Dr. S. G. Parameshwarappa Sr. Sorghum Breeder	M 35-1	5.05	5.50	Kar (0.95), Mah(2.50), NSC(0.10), NSAI(1.50)	Dr. S. G. Parameshwarappa, RARS,Bijapur *Dr. SR Gadakh, MPKV, Rahuri. Seed Cert. Officer, KSSCA, Bangalore Regional Manager, NSC, Bangalore			
			CSV 29R	0.60	0.80	Kar (0.30), Mah(0.30)				
9.	IARI, Regional station, Karnal (Kharif)	Dr. SS Atwal. Principal Scientist & Head	Pusa Chari 9	0.50	0.60	NDDDB(0.50)	Dr VK Pandita, IARI, Regional Station,Karnal Dr. NK Thakral, CCS&HAU, Hisar Seed Cert.Officer,New Delhi. Regional Manager,NSC, New Delhi			
10	GBPU&AT, Pantnagar (Kharif)	Dr. PK Shrotria Sr. Sorghum Breeder	467 A	0.30	0.40	Mah(0.10),NSC (0.20)	Dr. PK Shrotria, GBPUA&T, Pantnagar *Dr. Dr NK Thakral, Hisar; Seed Cert. Officer, Uttaranchal seed corporation, Pantnagar; Regional Manager, NSC, Pantnagar			
			467 B	0.17	0.20	Mah(0.07),NSC (0.10)				
			UPMC 503	4.80	5.00	NDDDB (4.65), Mha(0.05), NSC(0.10)				
			Pant Chari 5	0.50	0.60	NDDDB(0.40),NSC(0.10)				





11	CCS&HAU, Hisar (Kharif)	Dr. NK Thakral Sr. Sorghum Breeder	Haryana Jawar 513	1.15	1.25	NDDDB(1.15)	Dr NK Thakral, Sorghum Breeder, Hisar, *Dr. PK Shrotria, GBPUA&T, Pantnagar Seed Cert. Officer, Haryana seed corporation; Regional Manager, NSC, Hisar	
			HC 136	0.25	0.30	NDDDB(0.25)		
12	PAU, Ludhiana (Kharif)	Dr. R S Sohu, Forages and Millets section Incharge	Punjab Sudex Chari-4	A	0.40	0.50	NSC(0.10),Mah(0.30)	Dr. RS Sohu, Forages and Millets section Incharge, PAU, Ludhiana * Dr NK Thakral, Sorghum Breeder, Hisar Seed Cert. Officer, Punjab seed corporation; Regional Manager, NSC, Ludhiana
				B	0.15	0.1520	NSC(0.05), Mah(0.10)	
				R	0.05	0.10	NSC(0.05)	
13	MPKV, Rahuri (Rabi)	Dr. SR Gadakh Sr. Sorghum Breeder	CSV 22	0.20	0.30	Mah(0.20)	Dr. SR Gadakh, MPKV, Rahuri. *Dr. Parushuram P, CRS, Solapur. Seed Cert. Officer, MSSCA, Pune. Regional Manager, NSC, Pune	
			Phule Revati	4.10	4.50	Mah(4.10)		
			Phule Anuradha	0.50	0.60	Mah(0.50)		
			Vasudha	3.75	4.00	Mah(3.75)		
			SSV 84	0.20	0.30	NSAI (0.20)		
14	TNAU, Coimbatore (Kharif)	Head Dept. Millets	SPV 2242MF	2.00	2.20	Raj(2.00)	Dr Sumati ,Head, Dept of millets. TNAU, Coimbatore; * Dr Selvi, Sorghum breeder, TNAU, Seed Certification Officer, TSSCA, Chennai/Coimbatore; Regional Manager, NSC, Chennai	

\* Representing Project coordinator (Sorghum)

Table 6: Center wise allocation for nucleus seed production (kg) of sorghum during 2017-18

S. No.	Centre	Parental line / variety	Allocation
1.	MPKV, Rahuri	Phule Rohini	5
2.		Phule Madhur	5
3.		185A	10
4.		185B	5
5.		RSSV 260	5
6.		RSV 9R/ Swathi	10
7.		Selection 3	5
8.		CSV 216R	10
9.		CSV 19SS	15
10.		SSV 84	15
11.		CSV 22	15
12.		Phule Revati	15
13.		Phule Anuradha	15
14.		Phule Vasudha	15
15.		Phule Chitra	15
16.		Phule Panchami	10
17.	PDKV, Akola	AKMS 30A	20
18.		AKMS 30B	10
19.		AKR 456	10
20.		AKR 504	10
21.		AKMS 14A	20
22.		AKMS 14B	10
23.		AKR 150	10
24.		AKR 73	10
25.		R 354	10
26.		AK 70A	10
27.		AK 70B	5
28.		AKSV 13R	10
29.	VNMKV, Parbhani	PVK 400	5
30.		CSV 18	5
31.		PMS 28 A	15
32.		PMS 28 B	10
33.		C-43	10
34.		Parbhani Moti	15
35.		Parbhani Swetha	15
36.		MS 6937A	10
37.		MS 6937B	5
38.		KR 196	5



39.	JNKVV, Indore	IMS 9A	15
40.		IMS 9B	15
41.		Indore 12	15
42.		M.P.Chari	50
43.		CSV 13	10
44.		CSV 15	10
45.		Bundela	5
46.		RVJ 1862	
47.		RVICSH 28 A line	
48.		RVICSH 28 B	
49.	RVICSH 28 R		
50.	VNMKVA&T, Udaipur	AKMS 14A	10
51.		AKMS 14B	5
52.		AKR 150	5
53.		CSV 10	5
54.		CSV 15	10
55.		CSV 17	10
56.		SU 556 (SPV 1430)	5
57.		CSV 23	20
58.		Pratap Chari 1080	10
59.	GBPUA&T, Pantnagar	2219A	10
60.		2219B	5
61.		UPMC 503 (PC 6)	20
62.		ICS467A	10
63.		ICS467B	5
64.		Pant Chari 7	5
65.		Pant Chari 8	5
66.	IIMR, Hyderabad	2077A	10
67.		2077B	5
68.		2219A	10
69.		2219B	5
70.		CS 3541	5
71.		296A	10
72.		296B	5
73.		RS 29	5
74.		27A	10
75.		27B	5
76.		C 43	5
77.		RS 673	5
78.		CSV 14R	5
79.		CSV 15	15
80.		CSV 20 (SPV 1616)	15
81.		ICSA 38	10
82.		ICSB 38	5
83.		SSV 84	10
84.		MS 7A	10
85.		MS 7B	5
86.		RS 627	5
87.		CSV 32F	10
88.		CSV 27	10
89.		CSV 24SS	5
90.		415 A	5
91.		415 B	5
92.		CB 33	5
93.		279 A	5
94.		279B	5
95.		CB 11	5
96.	PJ TSAU, Hyderabad	SPV 462	10
97.		NTJ 2	10
98.		Kinnera	5
99.		Srisalla	5
100.	ICRISAT, Patancheru	CSV 31	10
101.		MR 750	3
102.		ICSV 745	3
103.		CSV 13	6
104.		ICSA 38	10
105.	ICSB 38	5	
106.	RARS, Bijapur	M 35-1	30
107.		CSV 29R (SPV 2033)	20
108.	CRS, Solapur	104A	5
109.		104B	5
110.		RS 585	5

111.		CSV 26	15
112.	UAS, Dharwad	M 148-138	5
113.		SSV 74	10
114.		DSV 4	15
115.		DSV 6	5
116.	PAU, Ludhiana	PSC -4 A line	15
117.		B	10
118.		R	10
119.	CCSHAU, Hisar	SSG 59-3	25
120.		HJ 513	25
121.		HC 136	10
122.		HC 171	10
123.		HC 308	25
124.	TNAU, Coimbatore	CO FS 29	25
125.		CO FS 31	25
126.		SPV 2242	25
127.		K 11	15

### Distinctness, uniformity and stability (DUS) testing of Sorghum – 2016-17

#### Technical progress

During the period under report, two field trials were conducted during Kharif 2016 and one field trial during Rabi 2016-17 seasons for examining the DUS in candidate varieties of sorghum as per the PPV&FRA test guidelines. A total of 24 candidate varieties were tested for DUS traits in the kharif season and nine candidate varieties were tested in the rabi season along with the corresponding reference varieties. Maintenance breeding was undertaken for a total of 50 reference varieties (OPVs/parental lines/hybrids) during rabi 2016-17 season under enforced selfing/controlled pollination.

#### Candidate varieties under DUS testing

##### a. Kharif 2016

1 <sup>st</sup> year testing		2 <sup>nd</sup> year testing	
Candidate: New (11)	Reference (15)	Candidate: New (13)	Reference (19)
GK 4060, GK 4063, SYN-SR-DJ 2233, SYN-SR-MLR 0210, SYN-SR-MLB 0092, SYN-SR-STAR, SYN-SR-DAIRY GREEN, SYN-SR-MLSFR 0300, SYN-SR-MLSFR 0179, SYN-SR-MLB 0052, NICSSH 145	CSH 14, CSH 16, CSH 18, CSH 23, C 43, 296B, RS 29, ICSB 467, 2077B, CSH 20MF, CSH 24MF, Pantchari 6, CSV 15, CSV 20, CSH 22SS	279 B, 279 A, CSH 30, CB 33, CSV 27, CB 11, 415B, 415A, DGJ 022, GK 950, GK 952, GK 951, HTJH 3206	27 B, 27 A, AKMS 14B, AKMS 14A, 2219B, C 43, AKR 150, CS 3541, RS 29, CSV 15, CSV 20, CSV 23, APK 1, BSR 1, GJ 40, PVK 400, CO-S-28, CSH 14, CSH 23

##### b. Rabi 2016-17

1 <sup>st</sup> year testing		
Candidate: New (2)	Candidate: FV (7)	Reference (4)
SYN-SR-MLR 1172, SYN-SR-DJ 4062	Nagavi Maldandi, Bedra, Chikni Lal (Loose Panicle), Mothi Mani Juwar, Lahan Mani Juwar, Mothi Safed Juwar, Chikni Lal Juwar	M 35-1, RS 585, RS 29, CSH 15

#### Reference varieties under maintenance breeding

Source of varieties	Name of reference varieties
ICAR & State Agricultural Universities	2077A, 2077B, 2219A, 2219B, 27A, 27B, 296A, 296B, IMS 9A, IMS 9B, AKMS 14A, AKMS 14B, 7A, 7B, 7A, RS 627, Afzapur local, AKR 150, APK 1, C 43, CO-S-28, CS 3541, CSV 12 (SPV 462), CSV 15, CSV 20, CSV 24SS, CSV 27, CSV 28, CSV 29R, CSV 7R, CSV 8R, DSV 5, GJ 40, M 35-1, Parbhani Moti, Phule Anuradha, P. Rohini, P. Suchitra, P. Uttara, PVK 400, PVK 801, PVK 809, RS 29, RS 585, SPV 2018, SSG 59-3, SSV 74, Swathi, ICSB 467 and Pantchari 6

#### Monitoring of DUS testing trials and recommendations

The kharif 2016 sorghum DUS testing trials conducted at IIMR were monitored on 21st September 2016 by the Monitoring Team under the Chairmanship of Dr. D Raji Reddy, Director of Research, PJTSAU as per the guidelines of PPV&FR Authority. From IIMR, Dr. Vilas A Tonapi, Director; Dr. Aruna C, Principal Scientist and Co-nodal Officer; Dr. C Deepika, Scientist and Dr. Elangovan M, Principal Scientist attended the monitoring. The DUS testing trials conducted at MPKV, Rahuri, the Co-nodal centre were monitored on 7th October 2016 by Dr. Hariprasanna K, Nodal Officer, IIMR. Dr. Vijay R Shelar, Nodal Officer & Seed Research Officer, MPKV and Dr.

R S Shaikh, Co-Nodal Officer, MPKV coordinated the monitoring. Drs. G N Gharade and Vishnu Ameta from Syngenta India Ltd. participated in the monitoring.

The following were some of the observations and suggestions/recommendations of the DUS Monitoring team:

- The layout and maintenance of the trials is good and as per the PPV&FRA sorghum DUS test guidelines.
- The trials were sown on right time, as per the recommended sowing time for the region, and plant stand was maintained satisfactorily. Proper care has been taken to conduct the trials by following recommended package of practices and fields are maintained weed free. Incidences of shoot fly and stem borer damage, and grain mold have been observed in some of entries due to aberrant weather conditions.
- The overall crop growth and expression of morphological characters are satisfactory in almost all of the candidate varieties. All the data till flowering/physiological maturity stage have been recorded and up-to-date.
- In some of the candidate varieties like GK 4060 (2), DJ 2233 (1), STAR (2), MLSFR 0300 (1), MLSFR 0179 (1), MLR 0210 (2), MLB 0092 (2) and MLB 0052 (2) (All 1st year entries); DGJ 022 (3), GK 950 (3), GK 952 (5), GK 951 (4) and CB 11 (1) (All 2nd year entries) there are slight differences in the observed state and claimed state of the traits. The monitoring committee agreed with these observations.
- Incidence of foliar disease and downy mildew was severe in forage sorghum candidate varieties SYN-SR-STAR and SYN-SR-MLSFR 0300.
- The candidate variety MLB 0052 was nearly similar to reference variety 296B for the claimed traits till monitoring, and hence remaining claimed traits may be observed for distinctness.
- All the Farmers' Varieties grown are found to be of Rabi type, and hence, they have to be tested in ensuing Rabi season.
- The sweet sorghum candidate variety NICSSH 145 (Brahma 061) is still in vegetative/booting stage and hence, only one claimed trait has been observed till monitoring, while another candidate variety NICSSH 723 (Brahma 051) has not germinated.

### DUS Project review meeting - 2017

The PPV&FRA, New Delhi organized the 11th DUS Project Review Meeting during 27-28 February 2017 at Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur. During the meeting Dr. Hariprasanna K, Principal Scientist and Nodal Officer, Sorghum DUS Testing presented the proposed amendments and new descriptors for Sorghum apart from the progress in DUS testing so far. The amendments proposed in the quantity of seed required for DUS testing, test plot design, grouping traits, characteristics deleted, new characteristics added, additional characteristics in case of forage and sweet sorghum, amendments with respect to states/notes in case of 13 characteristics, etc. were presented in detail. Dr. RR Hanchinal, Chairperson, PPV&FRA, New Delhi commended the overall DUS testing in sorghum and the efforts put in for revision of test guidelines, and informed the house that the draft guidelines will be published in the Plant Variety Journal soon for comments and suggestions before finalizing and notifying in the Gazette.

### Plan for 2017-18

- Testing of candidate varieties for DUS traits in kharif 2017  
2nd year: 11 CV + 15 RV; 1st year: as received from PPV&FRA
- Testing of candidate varieties for DUS traits in rabi 2017-18  
2nd year: 2 CV + 4 RV; 1st year: as received from PPV&FRA
- Maintenance breeding of selected reference varieties (A/B/R lines, Hybrids and varieties)