ANMOL

Conservation of Traditional Seeds of Rainfed Crops

Analysis and Results of Kharif 2008 Evaluation Trials of Traditional Seeds

ANMOL

Satvik : Promoting Ecological Farming

Collaborating Partners

Bhachau Taluka Setus, Samakhiyali
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Vivekanand Research and Training Institute, Naliya
Arid Communities and Technologies, Bhuj
Kutch Fruit, Fodder and Forest Development Trust, Bhuj
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Pachham Setus, Pachham
Bhuj Taluka Setus, Boladi
Yuva, Rapar
Cohesion Foundation, Rapar
Shrujan, Bhujodi
Awaz, Rapar

Guide

Dr. S. N. Goyal
Principal Scientist (Retd.)

Contact
Satvik : Promoting Ecological Farming
26, First Lane, Banker's Colony,
Bh. Syndicate Bank, Nr. Jubilee Ground
Bhuj – Kachchh (370001)

Phone : +91 2832 651779
Fax : +91 2832 251914
Email : satvik.india@gmail.com

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1 Background

Kutch district of Gujarat has its peculiarities for seeds of the crops grown in the region. These seeds which are known as Traditional varieties are still being cultivated though not commercially but for home consumption only, by farmers because of their unique qualities with respect to color, taste, luster, nutritional values and many more traits. Apart from these they have wider variability for maturity duration, pest, disease and drought tolerance characters. As these varieties have been evolved and selected under particular environmental conditions over time, make them more suitable for cultivation under varied climatic conditions of the region. It is observed that produce of such varieties which when given to friends or relatives for consumption fetches good price and appreciation both. Because of these qualities these traditional varieties have come a long way and been preserved by farmers for last many decades in their original form, in the interior areas.

However with the passage of time and rapid popularization of modern varieties, area of these traditional varieties is shrinking day by day and a time may come in future when they may totally extinct, resulting in a great loss to mankind in the form of food-seed and nutritional securities. Moreover the Kutch region faces vagaries of monsoon often and ever, it is essential to make the agriculture sustainable and increase food-seed and nutritional securities. It is therefore essential to revive/rejuvenate and popularize old traditional varieties for which they are known.

For that purpose a vast survey of interior areas of Kutch district was done in the year 2007 for collection of traditional seeds of commonly grown crops – Pearl Millet (Bajara), Sorghum (Jowar), Green Gram (Moong), Moth Bean (Math/Korad), Cluster Bean (Guwar), Sesame (Til) and Castor (Aeranda). The farmers which were growing and maintaining seed from past 50-80 years were identified and 63 varieties were collected. A descriptor of characters of each of the variety as explained by their growers was prepared. The collected seeds were used for evaluation purpose to be done by farmers in Kharif 2008.

As the Kutch district does not get sufficient rains in a single spell in all the regions, sowing of these varieties was decided to do in two phases – Timely sown (June sowing) and Late sown (August sowing) for their evaluation in the farmers field. Trials of all the crops were laid down in all the 5 regions (1. Abdasa-Lakhapat Talukas, 2. Coastal Kachchh including Mandvi, Mundra and Anjar Talukas, 3. Central Kachchh including Bhuj and Nakhatrana Talukas, 4. Wagad including Bhachau and Rapar Talukas and 5. Island Chain including Pachchham, Khadir and Bela) and material was planted by farmers themselves following their crop cultivation practices and were evaluated by themselves under the guidance of project staff. For statistical analysis of trials, the numbers of locations were considered as replications. However, during analysis it was noted that number of locations were not sufficient in each phase to arrive on "standard error of degree of freedom", so visual analysis of means of data of grain yield, maturity and other traits was done in place of statistical model of analysis. To conclude the understanding on characters requires data of more then one year, however this one year data are also significant. Hence it is shared in this report.

Shailesh Vyas
Co-ordinator
Satvik : Promoting Ecological Farming

Dr. S.N. Goyal
Principal Scientist (Retd.)
Guide, ANMOL Programme

Content

2 Pearl Millet (Bajara)

2.1 Local Variety and Evaluation Trial

Name of Pearl Millet (Bajara) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2008

Name of Seed Breeder Farmer	Village	Taluka
Mariyamben and Miya Husen Mamad	Budiya	Abdasa
Khamu Maya	Kuran	Bhuj
Ratanben and Ravjibhai Gorasiya	Mirzapar	Bhuj
Rahembai and Haji Ibrahim Aman	Tuga	Bhuj
Aatubhai Gagubhai Siyad	Nicha Kotda	Mahuva
Mulchandbhai Hariya	Bidada	Mandvi
Kasturben and Valji Narsi Bhanushali	Bambhdai	Mandvi
Varshaben and Bharat Damji Boda	Gundiyali	Mandvi
Budhibai and Sangar Jesang Gaga	Kojachora	Mandvi
Lachbai and Lakhmanbhai Ratanbhai Mahuwar	Mota Bhadiya	Mandvi
Hanshbai and Palu Aala Gadhavi	Mota Bhadiya	Mandvi
Kuvarben and Mohanbhai Surji Koli	Nilpar	Rapar
Monghiben and Kamleshbhai Prajapati	Bhangera	Rapar
Harkhiben and Ranchodbhai D Chaudhary	Balasar	Rapar
Rajiben Jivanbhai	Sukhpar	Rapar
Kankuben and Bhachubhai Dharamsi Gami	Umaiya	Rapar
Maliben and Mudubhai Medabhai	Pipra Wandh	Bhachau

The trial was conducted at 7 locations (2 timely sown and 5 late sown) by taking 18 varieties including 1 check (popular variety). The characters plant height, average number of tillers, stem thickness, 50% flowering days, days to maturity, length of ear head, grain and fodder yield, disease, pests and drought tolerance and grain size were evaluated. The results were obtained of 1 trial in timely sown conditions and of 3 trials in late sown conditions.

2.2 Grain and Fodder Production

Pearl Millet (Bajara) Grain Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 100 Days*** *Local Variety No.*	Mid Late Maturity ***101 to 120 Days*** *Local Variety No.*	Late Maturity ***121 and more Days*** *Local Variety No.*	*Local Variety No.*
8	10	16	4
3	18	13	9
1	12	14	5
7	17	15	7
4			1
2			6
9			2
6			3
5			8
11			13
			16
			10
			18
			15
			17
			12
			14
			11

Pearl Millet (Bajara) Fodder Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 100 Days*** *Local Variety No.*	Mid Late Maturity ***101 to 120 Days*** *Local Variety No.*	Late Maturity ***121 and more Days*** *Local Variety No.*	*Local Variety No.*
2	17	16	11
6	18	15	14
9	10	14	12
5	12	13	9
1			16
3			18
8			10
4			15
11			5
7			4
			17
			8
			13
			6
			7
			2
			3
			1

2.3 Drought Tolerance Ability

Local Variety No. 2 was noted to have more drought tolerance ability judged over locations followed by Local Variety No. 1.

2.4 Observations of Pearl Millet (Bajara) from sowing of local varieties for character mapping

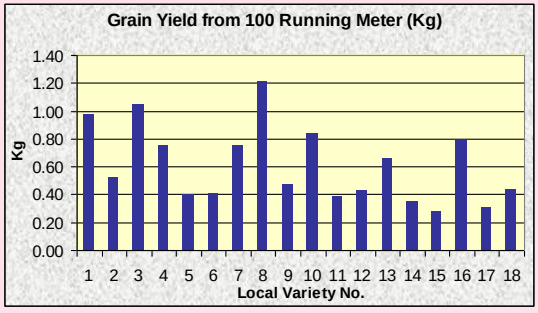
- Good variation observed in collected material.
- Some local varieties have produced well, both grain and fodder, compared to control line.
- Some local varieties are early maturing giving good production.
- In late sowing conditions some local varieties are also giving good production

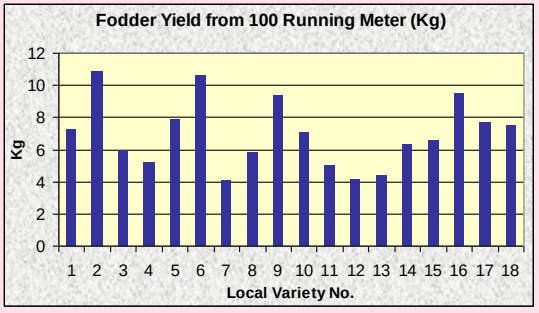


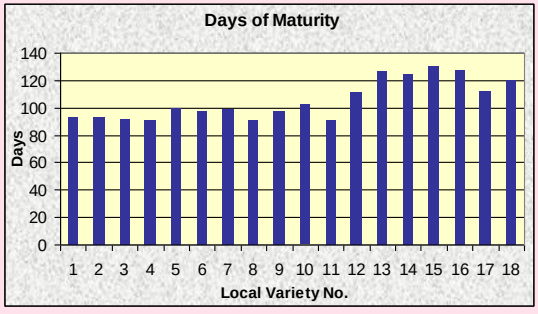
2.5 Pearl Millet (Bajara) Average performance of Local Varieties for different characters : Timely Sown

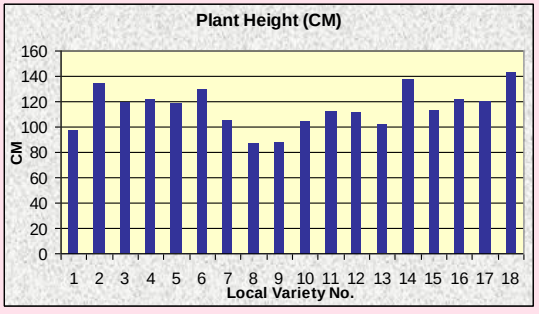
Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Tillers	Stem Thickness (cm)	Length of Ear head (cm)	Production of 10 Ear heads (Gram)	Grain Size 1.4 mm and more (%)
8	1.21	5.85	44	91	87	1	0.67	15	45.5	94
3	1.045	5.95	46	92	119	1.2	0.81	15	33.76	85
1	0.97	7.27	48	93	97	1.13	0.73	15	10.9	40
10	0.835	7.04	55	102	104	1.25	0.66	14	20.02	85
16	0.78	9.43	49	127	122	1.25	0.62	12	18.12	78
7	0.755	4.045	49	99	105	1	0.54	14	14.96	59
4	0.75	5.245	46	91	122	1.2	0.62	12	22.94	64
13	0.66	4.36	50	126	102	1	0.37	13	22.48	77
2	0.52	10.82	49	93	134	1	0.84	16	12.9	51
9	0.47	9.425	50	97	88	1.33	0.5	12	24.6	80
18	0.435	7.5	54	120	143	1.5	0.75	15	17.32	82
12	0.425	4.14	99	111	111	1	1.01	13	14.02	68
6	0.405	10.605	50	97	130	1	0.37	13	15.2	38
5	0.395	7.91	NA	100	118	1.75	0.79	16	14.36	51
11 Ctrl	0.385	5	54	91	112	NA	0.68	13	17.02	70
14	0.345	6.325	86	125	137	1	1.14	16	29.34	86
17	0.305	7.68	54	112	120	1.5	0.37	12	11.56	11
15	0.28	6.56	101	130	113	1.5	0.62	15	13.32	67

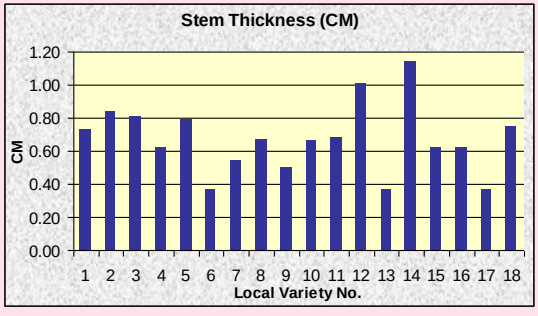
Timely Sown

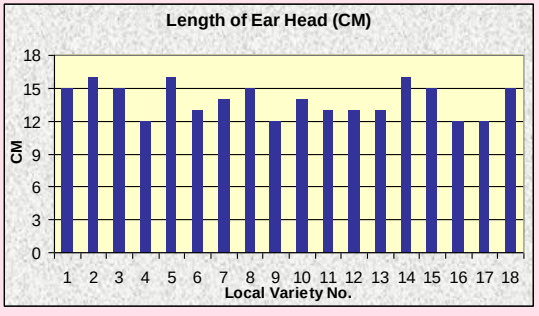

Grain Yield from 100 Running Meter (Kg)
Kg
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.

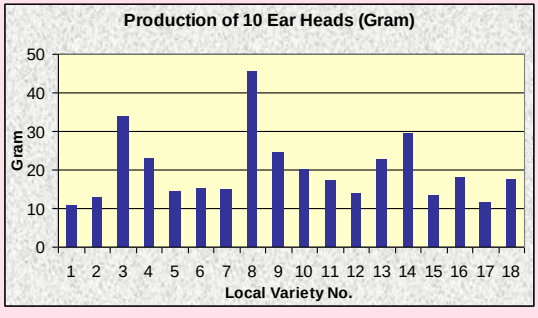

Fodder Yield from 100 Running Meter (Kg)
Kg
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.

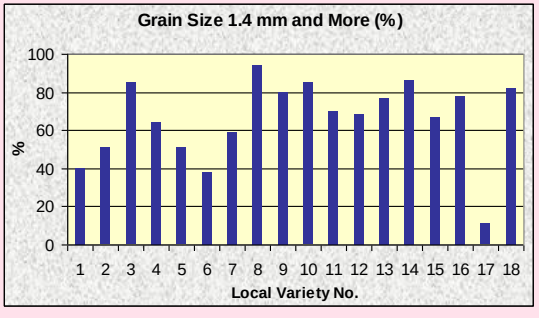

Days of Maturity
Days
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Plant Height (CM)
CM
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Stem Thickness (CM)
CM
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Length of Ear Head (CM)
CM
18
15
12
9
6
3
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Production of 10 Ear Heads (Gram)
Gram
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Grain Size 1.4 mm and More (%)
%
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.

2.6 Pearl Millet (Bajara) Average performance of Local Varieties for different characters : Late Sown

Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Tillers	Stem Thickness (cm)	Length of Ear head (cm)	Production of 10 Ear heads (Gram)	Grain Size 1.4 mm and more (%)
4	1.414	4.1	40	69	123	1.92	0.76	19	51.2	90
9	1.201	5.45	48	69	110	2.04	0.64	20	40.78	92
5	1.024	4.15	33	66	124	1.88	0.77	20	59.46	85
7	1.011	3.4	35	65	107	2.21	0.62	17	30.45	92
1	0.897	2.45	33	71	112	2.48	0.64	19	38.76	85
6	0.84	3.55	36	67	94	2.73	0.64	17	33.66	89
2	0.829	2.95	36	71	113	1.8	0.71	18	45.63	89
3	0.782	2.8	38	72	107	1.58	0.81	18	58.04	94
8	0.753	3.8	41	67	108	1.83	0.75	20	52.35	92
13	0.718	3.75	37	65	98	2.38	0.46	15	14.2	84
16	0.708	5.15	32	69	99	4.44	0.54	15	22.84	90
10	0.627	4.85	33	68	114	2.27	0.71	17	31.47	85
18	0.6	4.875	44	68	111	3.6	0.63	20	23.43	84
15	0.546	4.615	54	83	104	1.92	0.68	24	31.58	78
17	0.42	3.95	35	67	96	4.31	0.42	16	21.09	83
12	0.389	7	35	70	127	1.87	0.78	20	25.65	93
14	0.317	7.3	35	69	144	2.63	0.81	26	11.15	62
11 Ctrl	0.304	7.4	37	71	107	2.25	0.72	19	22.51	85

2.7 Summery of Cultivation of Pearl Millet (Bajara) Lead Farmers for Kharif 2008 Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Lakhiben and Ravjibhai Jethabhai Ahir	Daiben and Malabhai Baubhai Rajput	Raimabai and Aamadbhai Bhachubhai Mandhra	Kanbai and Gopalbhai Khajuriyabhai Maheswari	Ritaben and Dhirajlal Shankarji Gor	Raniben and Damjibhai Haribhai Vavia	Ratanben and Ravjibhai Gorasiya
Village of Evaluation Trial	Vang, Nakhatrana	Khodiyar Wandh, Rapar	Kala Talav, Abdasa	Rodasar, Lakhapat	Maska, Mandvi	Lakhdhirgadh, Bhachau	Mirzapar, Bhuj
Soil type	Sandy Loam	Sandy Loam	Loamy	Sandy Loam	Loamy	Clayey	Sandy Loam
Plot	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	0	1	2	1	1	2	2
Details of composting	No	No	No	No	No	No	No
Sowing done by	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Bullock
Thinning	No	No	No	No	No	No	No
Weeds	Medium weed infestation	Almost weed free	Medium weed infestation	Heavy weed infestation	Almost weed free	Almost weed free	Almost weed free
Sowing Time	August 3rd Week	August 1st Week	August 2nd Week	August 2nd Week	June 3rd Week	August 2nd Week	June 3rd Week
Rainfall Upto Sowing (mm)	87	87	75	100	250	50	
Rainfall in 2nd Week (mm)							
Rainfall in 3rd Week (mm)				12			
Rainfall in 4th Week (mm)	50						
Rainfall in 5th Week (mm)			75	50		100	
Rainfall in 6th Week (mm)		62			87		
Rainfall in 7th Week (mm)					112		
Rainfall in 8th Week (mm)					112		
Rainfall in 9th Week (mm)							
Rainfall in 10th Week (mm)							
Rainfall in 11th Week (mm)							
Rainfall in 12th Week (mm)					100		

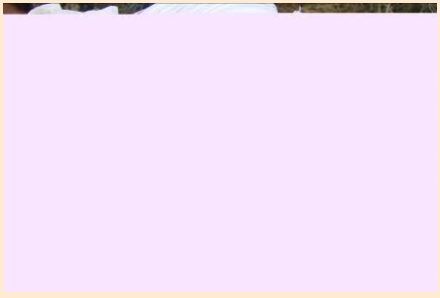
3 Sorghum (Jowar)

3.1 Local Variety and Evaluation Trial

Name of Sorghum (Jowar) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2008

Name of Seed Breeder Farmer	Village	Taluka
Mariyamben and Miya Husen Mamad	Budiya	Abdasa
Damayantiben and Ratilalbhai Umarsi Mota	Rapar Gadhwali	Abdasa
Puriben and Kanabhai Ravabhai Dangar	Umedpar	Bhuj
Kasturben and Valji Narsi Bhanushali	Bambhdai	Mandvi
Varshaben and Bharat Damji Boda	Gundiyali	Mandvi
Gagiben and Amrabhai Haribhai Parmar	Bhimasar	Rapar
Ratnaben and Pachanbhai Haribhai Chaudhry	Balasar	Rapar
Ratnaben and Pachanbhai Haribhai Chaudhry	Balasar	Rapar
Puniben Dharamsibhai	Kanani Wandh	Rapar
Kankuben and Bhachubhai Dharamsi Gami	Umaiya	Rapar

11 varieties including 1 check were planted on 10 locations (2 timely sown and 8 late sown) for fodder evaluation; however results of 2 timely sown and 3 late sown trials were obtained.



3.2 Fodder Production

Sorghum (Jowar) Fodder Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 90 Days*** *Local Variety No.*	Mid Late Maturity ***91 to 120 Days*** *Local Variety No.*	Late Maturity ***121 and more Days*** *Local Variety No.*	*Local Variety No.*
6	7		7
3	10		10
2	8		1
5	4		8
9	1		3
11			4
			9
			5
			2
			6
			11

3.3 Disease

Name of Disease	Disease Free	Moderately Susceptible	Susceptible
Smut	1	6 7 8 10 11	2 3 4 5 9
Anthracnose	4 8 10	2 3 5 6 7 9 11	1
Leaf Disease		1 3 5 6 7 8 9 10	2 4 11

3.4 Pest

Name of Pest	Pest Free	Moderately Susceptible	Susceptible
Stem Borer and Shoot Fly	4 5 7 8 9	2 3 6 10 11	1

3.5 Drought Tolerance Ability

Local Variety No. 8 was found to have maximum drought tolerance capacity followed by Local Variety No. 4 and 7.

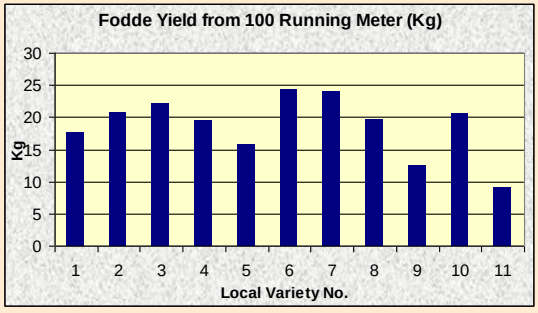
3.6 Observations of Sorghum (Jowar) from sowing of local varieties for character mapping

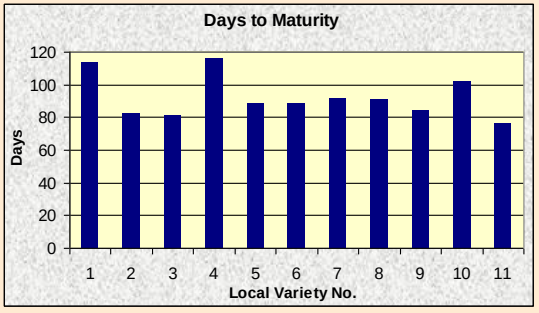
- It has observed that there are two type of varieties one which is less in height and good in grain production where as other is more in height and giving less seed production.
- Control line in this case is not the released variety but its fodder production was highest and some other local variety also has good fodder production.

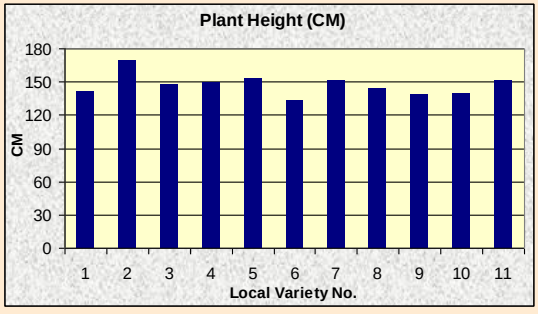
3.7 Sorghum (Jowar) Average performance of Local Varieties for different characters : Timely Sown

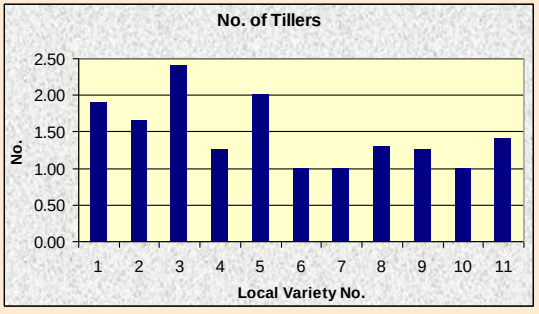
Local Variety No.	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Tillers	Stem Thickness (cm)	Length of Ear head (cm)
6 Ctrl	24.368	67	88	133	1	0.95	9.5
7	24.037	84	92	151	1	0.75	10.9
3	22.173	57	81	147	2.4	0.65	5.5
2	20.82	63	82	169	1.65	0.99	6.5
10	20.52	67	102	139	1	0.7	6.9
8	19.741	86	91	144	1.3	0.79	7.7
4	19.564	67	116	149	1.25	0.76	9.1
1	17.708	70	113	141	1.9	0.89	16.4
5	15.778	62	88	153	2	0.61	10.3
9	12.515	62	84	138	1.25	0.47	6
11	9.068	52	76	151	1.4	0.67	7.4

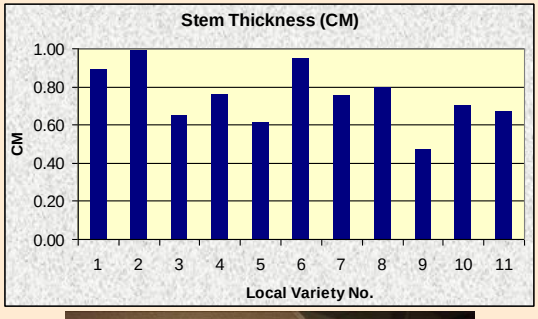
Timely Sown

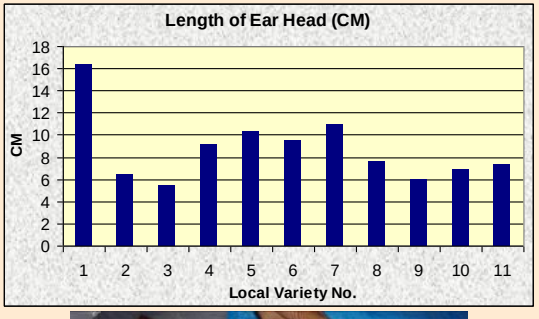

Fodde Yield from 100 Running Meter (Kg)
Kg
0
5
10
15
20
25
30
1 2 3 4 5 6 7 8 9 10 11
Local Variety No.


Days to Maturity
Days
0
20
40
60
80
100
120
1 2 3 4 5 6 7 8 9 10 11
Local Variety No.


Plant Height (CM)
CM
0
30
60
90
120
150
180
1 2 3 4 5 6 7 8 9 10 11
Local Variety No.


No. of Tillers
No.
0.00
0.50
1.00
1.50
2.00
2.50
1 2 3 4 5 6 7 8 9 10 11
Local Variety No.


Stem Thickness (CM)
CM
0.00
0.20
0.40
0.60
0.80
1.00
1 2 3 4 5 6 7 8 9 10 11
Local Variety No.

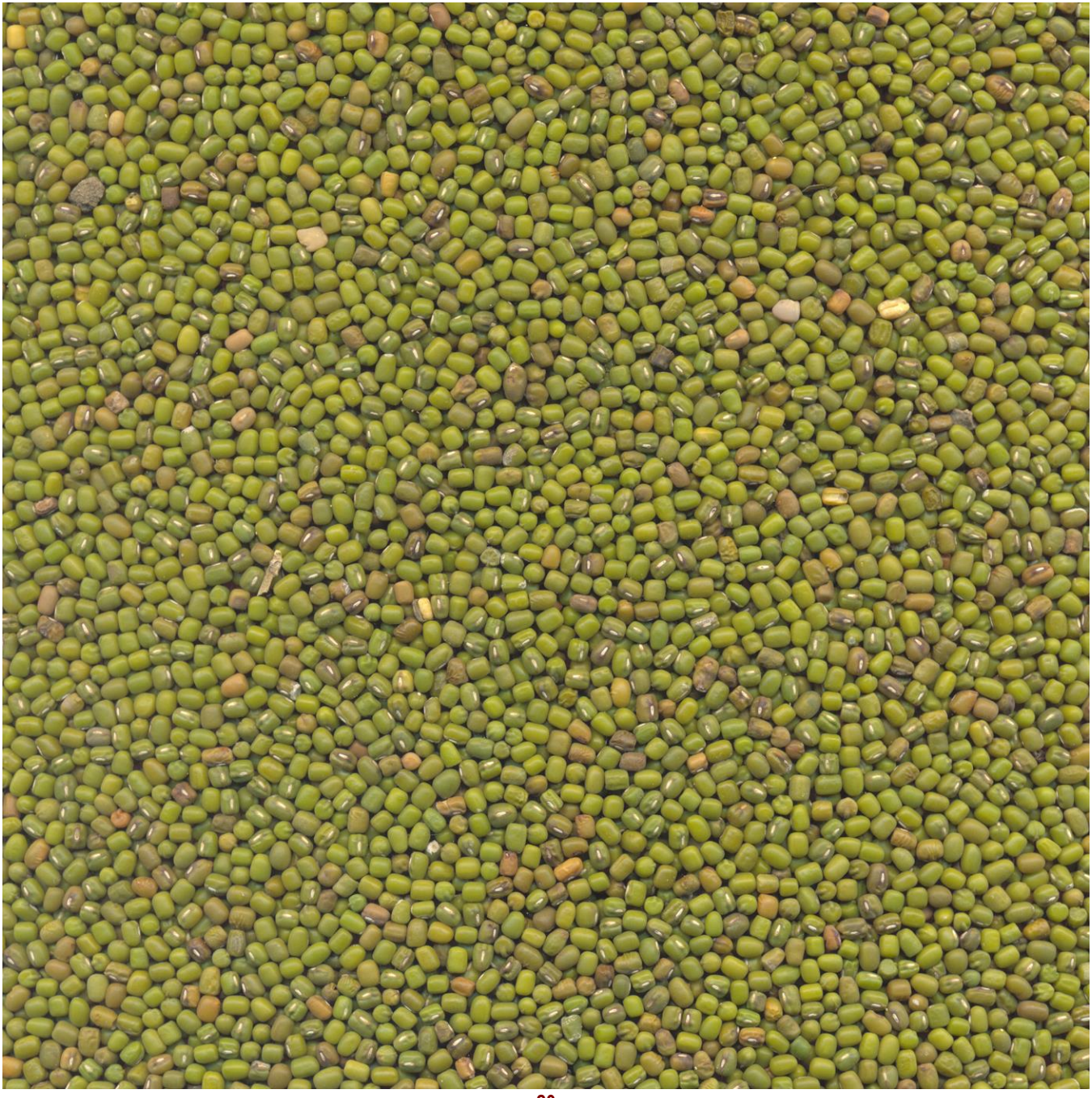

Length of Ear Head (CM)
CM
0
2
4
6
8
10
12
14
16
18
1 2 3 4 5 6 7 8 9 10 11
Local Variety No.

3.8 Sorghum (Jowar) Average performance of Local Varieties for different characters : Late Sown

Local Variety No.	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Tillers	Stem Thickness (cm)	Length of Ear head (cm)
7	13.208	76	90	91	1.25	0.83	7.3
10	12.911	76	92	99	1	0.92	7.6
1	12.488	56	92	99	1.88	0.91	13.8
8	12.068	76	87	108	1	1.05	9.2
3	11.973	58	92	121	1	0.65	12.6
4	11.873	56	92	134	1.38	0.92	10.8
9	11.851	56	90	113	2	0.82	9.2
5	10.907	59	92	117	2.5	0.89	13.9
2	10.397	56	72	107	1	1.04	10.7
6 Ctrl	9.171	56	92	99	2.5	0.79	7.8
11	9.111	57	92	134	1.75	0.93	10.3

3.9 Summery of Cultivation of Sorghum (Jowar) Lead Farmers for Kharif 2008 Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Lakhiben and Ravjibhai Jethabhai Ahir	Kankuben and Bhachubhai Dharamsibhai Gami	Hanifabai and Hasan Haji Ibrahim Mandhra	Gomtiben and Pravinbhai Jesabhai Dangar	Kanbai and Gopalbhai Khajuriyabhia Maheshwari	Jayshreeben and Gaurishankar Muljibhai Vyas	Ambulibe n and Jesabhai Pethabhai Canga	Ranabhai Velabhai Paradhi	Salmaben and Taiyab Haji Sale	Nilaben and Maghabhai Danabhai Chaudhry
Village of Evaluation Trial	Vang, Nakhatrana	Umaiya, Rapar	Kala Talav, Abdasa	Umedpar, Bhuj	Rodasar, Lakhapat	Gundiyali, Mandvi	Ner, Bhachau	Hamiramora, Mundra	Tuga, Bhuj	Balasar, Rapar
Soil type	Sandy Loam	Sandy Loam	Loamy	Sandy Loam	Sandy Loam	Sandy Loam	Loamy	Loamy	Loamy	Loamy
Plot	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	0	2	1	2	1	2	1	1	0	1
Details of composting	No	In Current Year	No	No	No	No	No	No	No	No
Sowing done by	Tractor	Tractor	Tractor	Bullock	Tractor	Bullock	Tractor	Tractor	Tractor	Bullock
Thinning	No	No	No	No	No	No	No	No	No	No
Weeds	Medium weed infestation	Almost weed free	Medium weed infestation	Almost weed free	Heavy weed infestation	Almost weed free	Almost weed free	Almost weed free	Medium weed infestation	Almost weed free
Sowing Time	August 3rd Week	August 2nd Week	August 2nd Week	June 3rd Week	August 2nd Week	June 3rd Week	August 2nd Week	August 2nd Week	August 1st Week	August 1st Week
Rainfall Upto Sowing (mm)	87	25	75	200	100	250	75	62	62	87
Rainfall in 2nd Week (mm)										
Rainfall in 3rd Week (mm)				12	12					
Rainfall in 4th Week (mm)	50									
Rainfall in 5th Week (mm)		62	75		50		50			
Rainfall in 6th Week (mm)						85		75	37	50
Rainfall in 7th Week (mm)				187		120				
Rainfall in 8th Week (mm)						120				
Rainfall in 9th Week (mm)										
Rainfall in 10th Week (mm)										
Rainfall in 11th Week (mm)										
Rainfall in 12th Week (mm)				62		100				



4 Green Gram (Moong)

4.1 Local Variety and Evaluation Trial

Name of Green Gram (Moong) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2008

Name of Seed Breeder Farmer	Village	Taluka
Mariyamben and Miya Husen Mamad	Budiya	Abdasa
Rahemabai and Haji Ibrahim Aman	Tuga	Bhuj
Gomtiben and Pravinbhai Jesabhai Dangar	Umedpar	Bhuj
Ambuliben and Jeshabhai Pethabhai Changa	Ner	Bhachau
Arunaben and Jayantibhai Patel	Siyot	Lakhpat
Kanji Ladhaji Jadeja	Guneri	Lakhpat
Kasturben and Valji Narsi Bhanushali	Bambhdai	Mandvi
Jayshreeben and Gaurishankar Mulji Vyas	Gundiyali	Mandvi
Kailashba and Ramdevsinh Kakubha Jadeja	Modkuba	Mandvi
Kuvarben and Mohanbhai Surji Koli	Nilpar	Rapar
Ratnaben and Pachanbhai Haribhai Chaudhary	Balasar	Rapar
Bachiben Nagdanbhai	Manjuvas	Rapar
Ladhiben and Vaidhya Natha Aamba	Pragpar	Rapar
Satiben and Aambabhai Ranchodbhai	Padampar	Rapar
Kankuben and Bhachubhai Dharamsi Gami	Umaiya	Rapar
Raniben and Damjibhai Haribhai Vaviya	Lakhdhirgadh	Bhachau
Maliben and Mulubhai Melabhai Koli	Pipra Wandh	Bhachau

The trials were conducted on 9 locations taking 18 varieties however results were obtained of 4 (2 timely sown and 2 late sown) locations only.

4.2 Grain Production

Green Gram (Moong) Grain Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 75 Days*** *Local Variety No.*	Mid Late Maturity ***76 to 100 Days*** *Local Variety No.*	Late Maturity ***101 and more Days*** *Local Variety No.*	*Local Variety No.*
9	4	18	6
2	17	1	4
	6	15	9
	8	10	14
	5	13	15
	16	3	16
	7	14	5
		11	7
			8
			10
			17
			13
			12
			11
			1
			2
			18
			3

4.3 Pest

Name of Pest	Pest Free	Moderately Susceptible	Susceptible
Sphinx	10 13 14 15 16 17 18	Rest of all	
Pink Pod		1 2 18	Rest of all

4.4 Drought Tolerance Ability

Local Variety No. 6 was noted highly drought tolerant followed by Local Variety No. 4.

4.5 Plant Type

2 types of varieties (Erect and Vine type) were noted. The details of each variety is as under –

Erect Type	1	2	3	9	10	11						
Vine Type	4	5	6	7	8	12	13	14	15	16	17	18

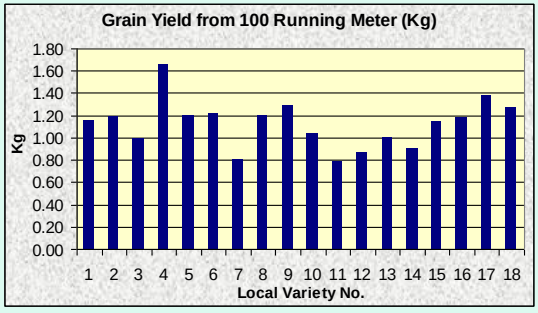
4.6 Observations of Green Gram (Moong) from sowing of local varieties for character mapping

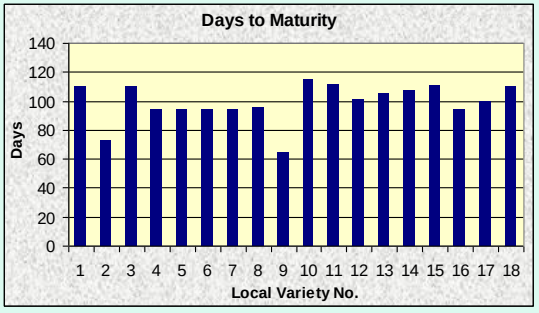
- Collected local varieties are of two type, Erect and Vine.
- Some local varieties have produced well, grain, compared to control line.
- Early maturity was observed in control line which is considerably less in any other local varieties.

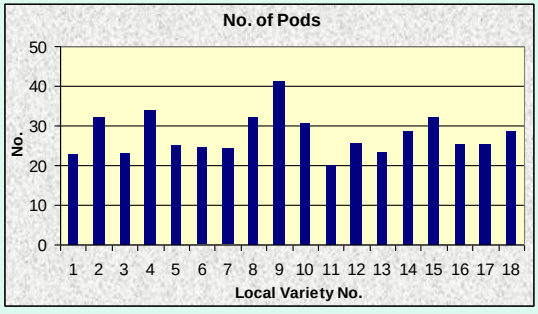
4.7 Green Gram (Moong) Average performance of Local Varieties for different characters : Timely Sown

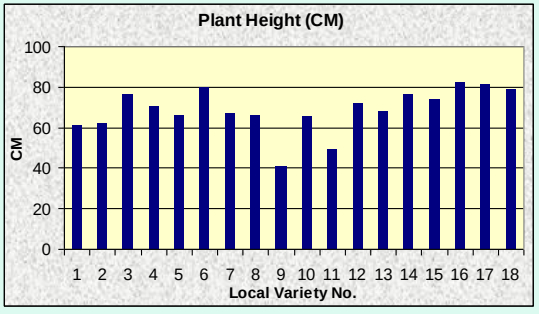
Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	No. of Pods	Plant Height (cm)	No. of Seed in a Pod	Production of 100 Pods (Gram)	Grain Size 3.35 mm and more (%)
4	1.652	58	94	33.88	70	7.45	22.6	75.17
17	1.377	64	100	25.35	81	7.08	21.05	66.21
9 Ctrl	1.29	50	65	41.01	41	8.88	29.27	92.74
18	1.268	70	110	28.73	79	8.48	20.64	56.05
6	1.219	59	94	24.58	80	7.05	20.18	73.31
8	1.2	59	96	32.23	66	7.13	21.7	78.54
5	1.193	65	94	24.95	66	7.88	21.65	71.18
2	1.19	53	73	32.31	62	8.15	23.43	72.1
16	1.174	61	94	25.35	82	8.33	21.51	78.84
1	1.154	68	110	22.8	61	8.48	20.1	60
15	1.151	72	111	32.24	74	8.6	20.77	61.3
10	1.034	76	115	30.51	65	8.33	21.75	67.17
13	1.003	74	105	23.36	68	8.53	19.57	60.52
3	0.991	74	110	23.01	76	7.9	23.09	74.46
14	0.896	69	107	28.55	76	8.48	21.84	53.82
12	0.87	68	101	25.69	72	7.88	23.08	78.53
7	0.805	61	94	24.21	67	7.13	20.52	79.02
11	0.782	76	112	19.91	49	8.75	20.95	71.78

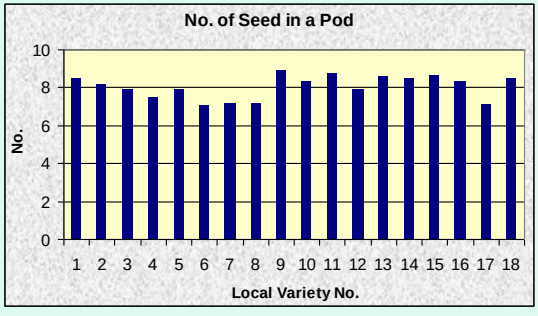
Timely Sown

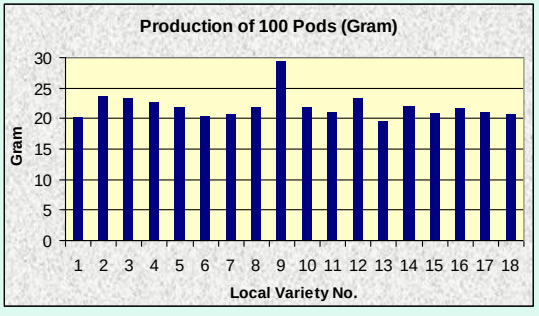

Grain Yield from 100 Running Meter (Kg)
Kg
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.

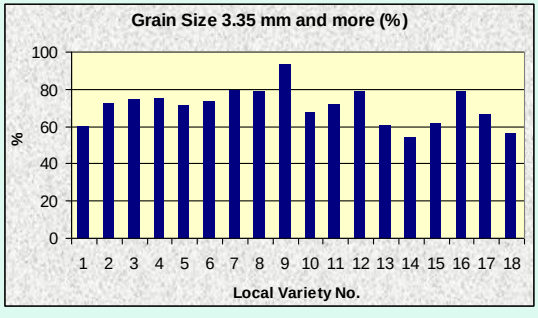

Days to Maturity
Days
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


No. of Pods
No.
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Plant Height (CM)
CM
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


No. of Seed in a Pod
No.
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Production of 100 Pods (Gram)
Gram
30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.


Grain Size 3.35 mm and more (%)
%
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Local Variety No.

4.8 Green Gram (Moong) Average performance of Local Varieties for different characters : Late Sown

Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	No. of Pods	Plant Height (cm)	No. of Seed in a Pod	Production of 100 Pods (Gram)	Grain Size 3.35 mm and more (%)
6	0.576	50	77	6.69	31	7.53	26.01	92.11
4	0.343	46	73	8.1	35	7.45	28.22	80.45
9 Ctrl	0.234	37	70	13.05	27	7.45	28.42	86.78
14	0.23	55	77	11.05	36	8.5	30.86	79.38
15	0.227	54	80	12.15	38	9	34.45	85.51
16	0.216	48	81	12.85	35	7.63	26.06	84.99
5	0.187	49	77	7.8	34	8.3	31.41	80.24
7	0.176	45	80	5.45	35	7.93	28.47	90.66
8	0.157	44	77	13.7	36	6.95	29.06	92.62
10	0.14	38	72	9	35	8.05	26.77	80.05
17	0.126	48	79	14.1	34	7.8	28.43	89.89
13	0.121	49	78	9.85	32	7.25	30.76	78.65
12	0.097	50	77	4.65	30	9.15	37.74	74.63
11	0.095	43	77	7.45	31	8.65	32.13	80.23
1	0.085	48	81	3.3	31	7.13	23.13	91.29
2	0.07	38	79	5	31	7.2	25.27	80.54
18	0.05	51	77	15.7	32	8.78	24.61	73.9
3	0.03	39	78	4.5	35	7.53	23.67	85.16

4.9 Summery of Cultivation of Green Gram (Moong) Lead Farmers for Kharif 2008 Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Ratnaben and Pachanbhai Haribhai Chaudhary	Badhiben and Hasubhai Savabhai Makwana	Hanifabai and Hasan Haji Ibrahim Mandhra	Geetaben and Ranchodbhai Bhimji Chad	Mariyambai and Sidiqbhai Tejmalbhai Sama	Haji Abdreman Haji Karmi Jat	Varshaben and Bharatbhai Damji Boda	Manbai Khimji Marwada	Navalben and Parbatbhai Bhikhabhai Bhathi
Village of Evaluation Trial	Balasar, Rapar	Umaiya, Rapar	Kala Talav, Abdasa	Lodai, Bhuj	Tuga, Bhuj	Kanoj, Lakhpat	Gundiyali, Mandvi	Vang, Nakhatrana	Adhoi, Bhachu
Soil type	Loamy	Sandy Loam	Loamy	Sandy Loam	Loamy	Clayey	Loamy	Loamy	Sandy Loam
Plot	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	2	1	1	1	1	1	Yes	1	2
Details of composting	No	No	No	No	In current year	No	No	No	No
Sowing done by	Tractor	Bullock	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Bullock
Thinning	No	No	No	No	No	No	No	No	No
Weeds	Almost weed free	Almost weed free	Medium weed infestation	Heavy weed infestation	Medium weed infestation	Medium weed infestation	Almost weed free	Almost weed free	Heavy weed infestation
Sowing Time	August 1st Week	August 1st Week	August 2nd Week	June 3rd Week	August 2nd Week	August 2nd Week	June 4th Week	August 1st Week	August 1st Week
Rainfall Upto Sowing (mm)	87	25	75	200	62	100	250	87	25
Rainfall in 2nd Week (mm)									
Rainfall in 3rd Week (mm)				12					
Rainfall in 4th Week (mm)									
Rainfall in 5th Week (mm)			75		37	62	87	50	
Rainfall in 6th Week (mm)	50	62					112		100
Rainfall in 7th Week (mm)				187			112		
Rainfall in 8th Week (mm)									
Rainfall in 9th Week (mm)									
Rainfall in 10th Week (mm)									
Rainfall in 11th Week (mm)							100		
Rainfall in 12th Week (mm)				37					

5 Moth Bean (Math / Korad)

5.1 Local Variety and Evaluation Trial

Name of Moth Bean (Math/Korad) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2008

Name of Seed Breeder Farmer	Village	Taluka
Ambuliben and Jesabhai Pethabhai Changa	Ner	Bhachau
Kuvarben and Mohanbhai Surji Koli	Nilpar	Rapar
Kankuben and Bhachubhai Dharamsi Gami	Umaiya	Rapar
Monghiben and Naran Dharamsi Gami	Umaiya	Rapar

5 varieties were evaluated at 9 locations (2 timely sown and 7 late sown) of which results were obtained of 6 location (1 timely and 5 late sown).

5.2 Grain and Fodder Production

Moth Bean (Math/Korad) Grain Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 75 Days*** *Local Variety No.*	Mid Late Maturity ***76 to 100 Days*** *Local Variety No.*	Late Maturity ***101 and more Days*** *Local Variety No.*	*Local Variety No.*
3	5	2	5
	4	1	3
			4
			2
			1

Moth Bean (Math/Korad) Fodder Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 75 Days*** *Local Variety No.*	Mid Late Maturity ***76 to 100 Days*** *Local Variety No.*	Late Maturity ***101 and more Days*** *Local Variety No.*	*Local Variety No.*
3	4	2	2
	5	1	4
			1
			5
			3

5.3 Disease

Mosaic virus was observed only in late sown conditions and all the varieties were affected. However Local Variety No. 1 and 5 were highly susceptible.

5.4 Drought Tolerance Ability

Local Variety No. 2 was noted drought tolerant over locations followed by Local Variety No. 4.

5.5 Plant Type

2 types of plant habits was noted. I.e. Erect and Vine. The varieties were as under.

Eract Type	1	3	5
Vine Type	2	4	

5.6 Grain Color

Local Variety No. 5 was lighter than others.

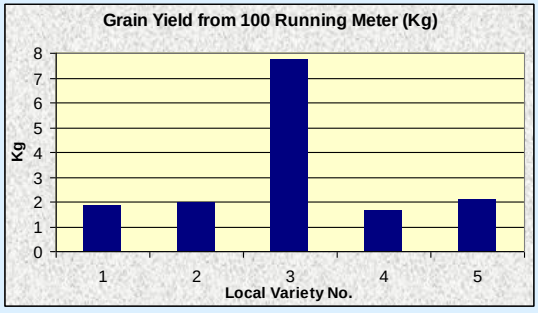
5.7 Observations of Moth Bean (Math/Korad) from sowing of local varieties for character mapping

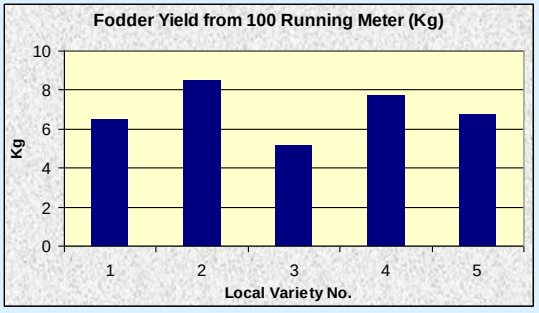
- Grain production of control line was considerably higher then any other local varieties.
- Requires to collect and put under trial more good local varieties.

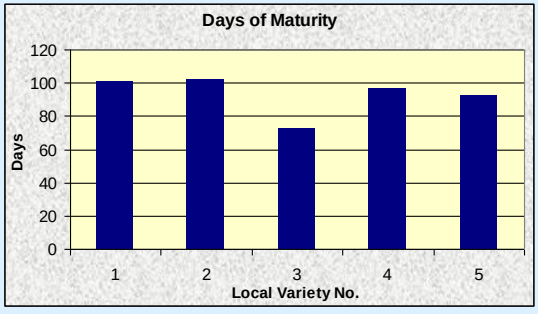
5.8 Moth Bean (Math/Korad) Average performance of Local Varieties for different characters : Timely Sown

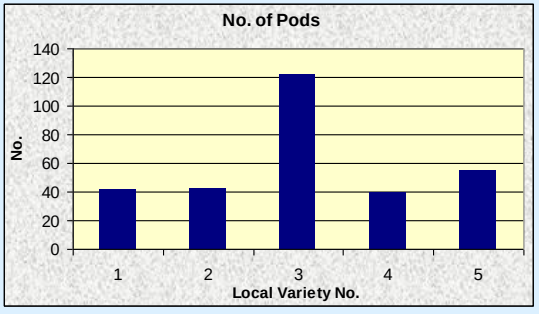
Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	No. of Pods	No. of Seed in a Pod	Plant Height (cm)	Production of 100 Pods (Gram)	Grain Size 2.36 mm and more (%)
3 Ctrl	7.72	5.125	36	72	121.6	6.3	57	17.96	97.88
5	2.087	6.75	42	92	54.4	4.55	56	12.3	88.13
2	1.957	8.5	45	102	42	5.95	69	13.1	88.85
1	1.84	6.5	50	101	41.4	5.5	55	14.76	93.83
4	1.625	7.75	49	97	39.2	5.85	91	13.2	90.53

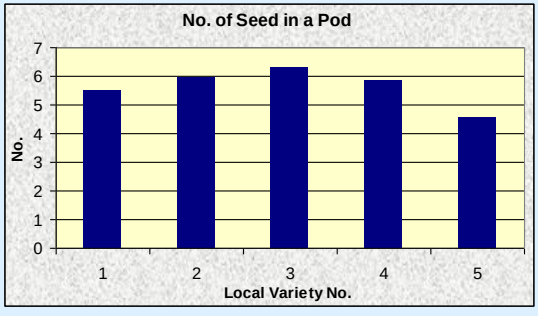
Timely Sown

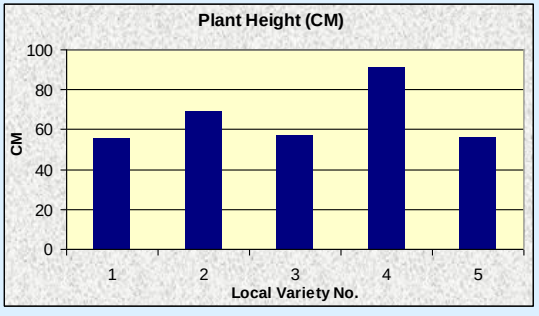

Grain Yield from 100 Running Meter (Kg)
Kg
0
1
2
3
4
5
6
7
8
1
2
3
4
5
Local Variety No.

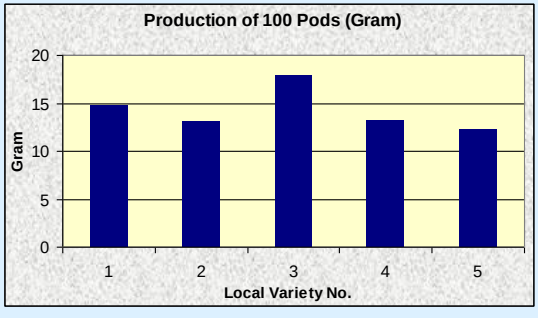

Fodder Yield from 100 Running Meter (Kg)
Kg
0
2
4
6
8
10
1
2
3
4
5
Local Variety No.

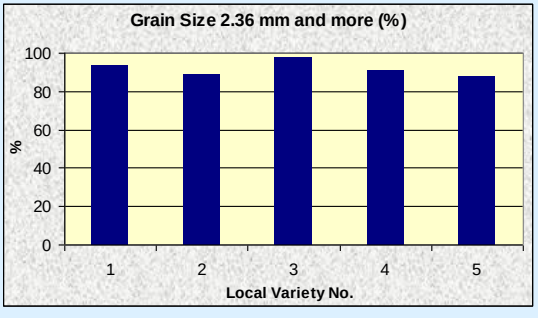

Days of Maturity
Days
0
20
40
60
80
100
120
1
2
3
4
5
Local Variety No.


No. of Pods
No.
0
20
40
60
80
100
120
140
1
2
3
4
5
Local Variety No.


No. of Seed in a Pod
No.
0
1
2
3
4
5
6
7
1
2
3
4
5
Local Variety No.


Plant Height (CM)
CM
0
20
40
60
80
100
1
2
3
4
5
Local Variety No.


Production of 100 Pods (Gram)
Gram
0
5
10
15
20
1
2
3
4
5
Local Variety No.


Grain Size 2.36 mm and more (%)
%
0
20
40
60
80
100
1
2
3
4
5
Local Variety No.

5.9 Moth Bean (Math/Korad) Average performance of Local Varieties for different characters : Late Sown

Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	No. of Pods	No. of Seed in a Pod	Plant Height (cm)	Production of 100 Pods (Gram)	Grain Size 2.36 mm and more (%)
5	0.753	1.718	46	78	16.8	4.28	20	9.98	80.33
3 Ctrl	0.735	1.052	43	75	24.18	4.45	16	10.89	84.56
4	0.703	2.008	46	83	13.32	4.6	21	10.66	75.77
2	0.659	2.248	46	79	11.18	4.69	20	9.88	66.96
1	0.614	1.98	50	80	19.55	4.77	17	12.03	78.46

5.10 Summery of Cultivation of Moth Bean (Math/Korad) Lead Farmers for Kharif 2008 Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Lakhiben and Ravjibhai Jethabhai Ahir	Jiviben and Mahadevabhai Dudabhai Rajput	Amibai and Mamad Abhu Mandhra	Virbai and Sangram Lala Bhil	Haji Abreman Haji Karmi Jat	V.R.T.I., New Campus	Pamiben and Mandanbhai Karanbhai Vaniya	Soniben and Haribhai Samjibhai Dangar	Kuvarben Mohan Surji Koli
Village of Evaluation Trial	Vang, Nakhatrana	Khodiyar Wandh, Rapar	Kala Talav, Abdasa	Tuga, Bhuj	Kanoj, Lakhapat	Mandvi, Mandvi	May, Bhachau	Umedpar, Bhuj	Nilpar, Rapar
Soil type	Loamy	Sandy Loam	Loamy	Loamy	Clayey	Loamy	Sandy Loam	Sandy Loam	
Plot	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Undulating	Leveled	
No. of ploughing before rain	1	1	2	0	1	2	2	1	
Details of composting	No	No	No	No	No	No	No	No	
Sowing done by	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	
Thinning	No	No	No	No	No	Yes	No	Yes	
Weeds	Medium weed infestation	Almost weed free	Almost weed free	Medium weed infestation	Medium weed infestation	Almost weed free	Heavy weed infestation	Medium weed infestation	
Sowing Time	August 1st Week	August 1st Week	August 1st Week	August 1st Week	August 1st Week	June 4th Week	August 4th Week	June 3rd Week	
Rainfall Upto Sowing (mm)		87	50	62	100	250		200	
Rainfall in 2nd Week (mm)	87		25						
Rainfall in 3rd Week (mm)			75				50	12	
Rainfall in 4th Week (mm)									
Rainfall in 5th Week (mm)						85			
Rainfall in 6th Week (mm)	50	62		37	62	120			
Rainfall in 7th Week (mm)						120		187	
Rainfall in 8th Week (mm)									
Rainfall in 9th Week (mm)									
Rainfall in 10th Week (mm)									
Rainfall in 11th Week (mm)						100			
Rainfall in 12th Week (mm)								62	

6 Cluster Bean (Guwar)

6.1 Local Variety and Evaluation Trial

Name of Cluster Bean (Guwar) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2008

Name of Seed Breeder Farmer	Village	Taluka
Ambuliben and Jesabhai Pethabhai Changa	Ner	Bhachau
Maliben and Mulubhai Melabhai Koli	Pipra Wandh	Bhachau
Arunaben and Jayantibhai Patel	Siyot	Lakhapat
Jayshreeben and Gaurishankar Mulji Vyas	Gundiyali	Mandvi
Kuvarben and Mohanbhai Surji Koli	Nilpar	Rapar
Ladhiben and Vaidhya Natha Aamba	Pragpar	Rapar
Puriben and Parbat Ravji Ravariya	Padampar	Rapar

On 10 locations (2 timely sown and 8 late sown) Cluster Bean (Guwar) trials were planted but results of 6 locations (2 timely sown and 4 late sown) for grain yield were noted. In all 8 varieties including 1 check was planted.

6.2 Grain and Fodder Production

Cluster Bean (Guwar) Grain Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 75 Days*** *Local Variety No.*	Mid Late Maturity ***76 to 100 Days*** *Local Variety No.*	Late Maturity ***101 and more Days*** *Local Variety No.*	*Local Variety No.*
	3	7	2
		4	4
		6	5
		8	1
		5	7
		1	6
		2	8
			3

Cluster Bean (Guwar) Fodder Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 75 Days*** *Local Variety No.*	Mid Late Maturity ***76 to 100 Days*** *Local Variety No.*	Late Maturity ***101 and more Days*** *Local Variety No.*	*Local Variety No.*
	3	7	2
		6	6
		8	1
		4	5
		5	8
		1	4
		2	7
			3

6.3 Drought Tolerance Ability

Local Variety No. 5 was noted better in drought tolerance over locations followed by Local Variety No. 2.

6.4 Grain Color

Pinkish Color of grain was noted in Local Variety No. 4 followed by Local Variety No. 7.

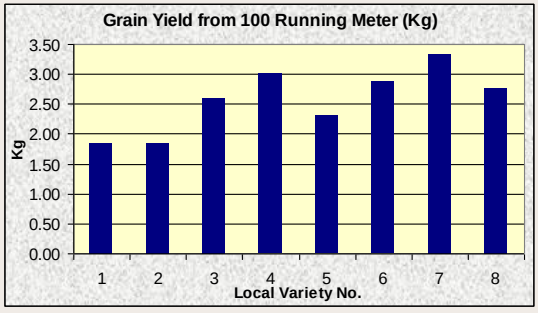
6.5 Observations of Cluster Bean (Guwar) from sowing of local varieties for character mapping

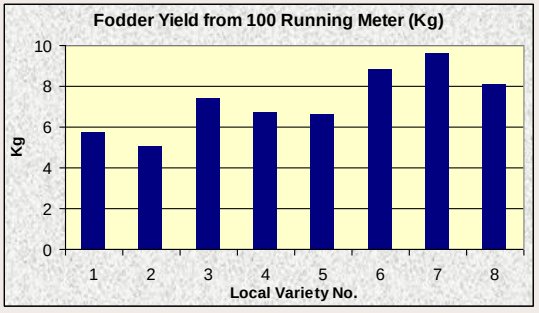
- Some local varieties have produced well, both grain and fodder, compared to control line.
- Early maturity was observed in control line which is 2 to 3 weeks early compare to other local varieties.

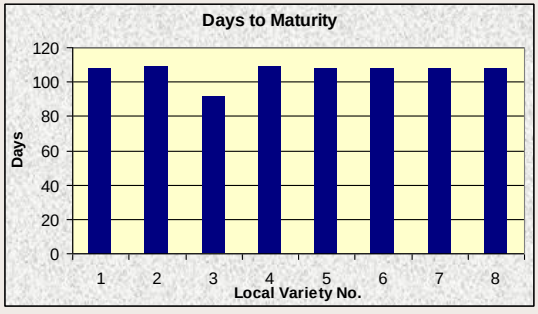
6.6 Cluster Bean (Guwar) Average performance of Local Varieties for different characters : Timely Sown

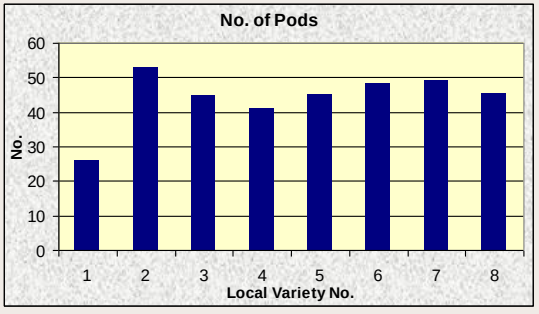
Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	No. of Pods	No. of Seed in a Pod	Plant Height (cm)	Production of 200 Pods (Gram)	Grain Size 3.35 mm and more (%)	% of Rounded Seed
7	3.339	9.573	64	108	49	8.35	105	49.46	78.63	79.56
4	3.005	6.695	65	109	40.8	8	91	44.68	66.61	73
6	2.877	8.815	70	108	48.35	7.88	98	42.78	66.96	70.14
8	2.756	8.07	69	108	45.4	7.53	100	45.98	79.6	83.84
3 Ctrl	2.597	7.43	48	91	44.55	8.1	75	40.81	41.8	79.37
5	2.306	6.595	70	108	45.1	7.8	96	43.41	75.83	76.56
1	1.851	5.73	65	108	25.8	7.78	96	42.65	74.6	76.26
2	1.836	5.024	69	109	52.9	7.98	86	41.37	71.38	78.55

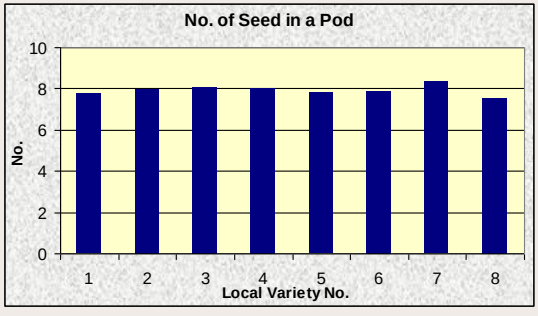
Timely Sown

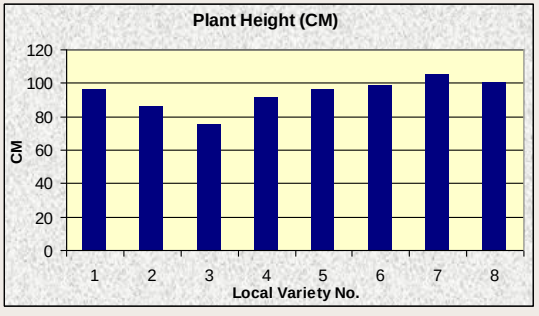

Grain Yield from 100 Running Meter (Kg)
Kg
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1 2 3 4 5 6 7 8
Local Variety No.

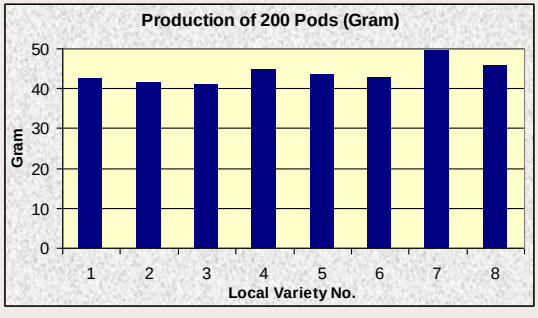

Fodder Yield from 100 Running Meter (Kg)
Kg
10
8
6
4
2
0
1 2 3 4 5 6 7 8
Local Variety No.

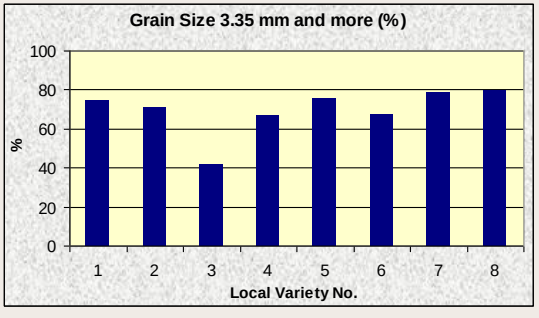

Days to Maturity
Days
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8
Local Variety No.


No. of Pods
No.
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8
Local Variety No.


No. of Seed in a Pod
No.
10
8
6
4
2
0
1 2 3 4 5 6 7 8
Local Variety No.


Plant Height (CM)
CM
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8
Local Variety No.


Production of 200 Pods (Gram)
Gram
50
40
30
20
10
0
1 2 3 4 5 6 7 8
Local Variety No.


Grain Size 3.35 mm and more (%)
%
100
80
60
40
20
0
1 2 3 4 5 6 7 8
Local Variety No.

6.7 Cluster Bean (Guwar) Average performance of Local Varieties for different characters : Late Sown

Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Fodder Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	No. of Pods	No. of Seed in a Pod	Plant Height (cm)	Production of 200 Pods (Gram)	Grain Size 3.35 mm and more (%)	% of Rounded Seed
2	1.348	2.01	61	70	17.23	7.15	46	46.36	86.97	87.78
4	1.261	1.584	63	68	15.78	7.29	43	47.11	89.31	86.16
5	1.257	1.695	64	70	14.73	7.29	42	45.78	88.57	88.63
1	1.242	1.708	61	67	22.25	7.15	45	46.13	84.54	86.37
7	1.149	1.382	59	70	13.93	6.72	39	44.56	86.95	89.82
6	1.116	1.878	58	68	14.38	7.07	41	45.69	84.92	89.69
8	1.018	1.585	59	70	17.33	7.09	43	45.15	89.24	91.85
3 Ctrl	0.675	0.849	58	68	15.23	7.3	30	42.01	72.4	95.28

6.8 Summery of Cultivation of Cluster Bean (Guwar) Lead Farmers for Kharif 2008 Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Jayshreeben and Gaurishankar Muljibhai Vyas	Gomtiben and Pravinbhai Jesabhai Dangar	Kankuben and Bhachubhai Dharamsibhai Gami	Kanbai and Gopalbhai Khajuriyabhia Maheshwari	Ambuliben and Jesabhai Pethabhai Canga	Hanifabai and Hasan Haji Ibrahim Mandhra	Ranabhai Velabhai Paradhi	Salmaben and Taiyab Haji Sale	Nilaben and Maghabhai Danabhai Chaudhry	Lakhiben and Ravjibhai Jethabhai Ahir
Village of Evaluation Trial	Gundiyali, Mandvi	Umedpar, Bhuj	Umaiya, Rapar	Rodasar, Lakhapat	Ner, Bhachau	Kala Talav, Abdasa	Hamiramora, Mundra	Tuga, Bhuj	Balasar, Rapar	Vang, Nakhatrana
Soil type	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Loamy	Loamy	Loamy	Loamy	Loamy	Sandy Loam
Plot	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	2	2	2	1	1	1	1	0	1	0
Details of composting	No	No	In Current Year	No	No	No	No	No	No	No
Sowing done by	Bullock	Bullock	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor
Thinning	No	No	No	No	No	No	No	No	No	No
Weeds	Almost weed free	Almost weed free	Almost weed free	Heavy weed infestation	Almost weed free	Medium weed infestation	Almost weed free	Medium weed infestation	Almost weed free	Medium weed infestation
Sowing Time	June 3rd Week	June 3rd Week	August 2nd Week	August 2nd Week	August 2nd Week	August 2nd Week	August 2nd Week	August 1st Week	August 1st Week	August 3rd Week
Rainfall Upto Sowing (mm)	250	200	25	100	3	3	62	62	87	87
Rainfall in 2nd Week (mm)										
Rainfall in 3rd Week (mm)				12						
Rainfall in 4th Week (mm)		12								50
Rainfall in 5th Week (mm)			62	50	50	75	75			
Rainfall in 6th Week (mm)								37	50	
Rainfall in 7th Week (mm)	85									
Rainfall in 8th Week (mm)	120	187								
Rainfall in 9th Week (mm)	120									
Rainfall in 10th Week (mm)										
Rainfall in 11th Week (mm)										
Rainfall in 12th Week (mm)										

7 Sesame (Til)

7.1 Local Variety and Evaluation Trial

Name of Sesame (Til) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2008

Name of Seed Breeder Farmer	Village	Taluka
Khamu Maya	Kuran	Bhuj
Gomtiben and Pravinbhai Jesabhai Dangar	Umedpar	Bhuj
Bhachiben Nagdanbhai	Manjuvas	Rapar
Jamuben Bhacha	Manjuvas	Rapar

5 varieties including 1 check Guj Til-2 was evaluated on 9 locations (2 timely sown and 7 late sown) but yield results were obtained of only 3 locations (2 timely sown and 1 late sown) which are presented as below-

7.2 Grain Production

Sesame (Til) Grain Production ranking in superiority order

Timely Sown (June Sown)			Late Sown (August Sown)
Early Maturity ***Up to 75 Days*** *Local Variety No.*	Mid Late Maturity ***76 to 100 Days*** *Local Variety No.*	Late Maturity ***101 and more Days*** *Local Variety No.*	*Local Variety No.*
3	1		3
2	4		5
	5		4
			1
			2

7.3 Grain Color

White	Brown	Mixture of white and brown
1	2	5
3		
4		

7.4 Disease

Name of Disease	Disease Free	Moderately Susceptible	Susceptible
Leaf curl		1	2 3 4 5
Phyllody		3 5	1 2 4

7.5 Pest

Name of Pest	Pest Free	Moderately Susceptible	Susceptible
Leaf Roller		2 5	1 3 4

7.6 Drought Tolerance Ability

Local Variety No. 2 (Brown Seeded) was found drought tolerant followed by Local Variety No. 5 (Mixture of white and brown)

7.7 Capsule on Plant

Capsule Two opposite	Capsules One opposite
1	2
3	5
4	

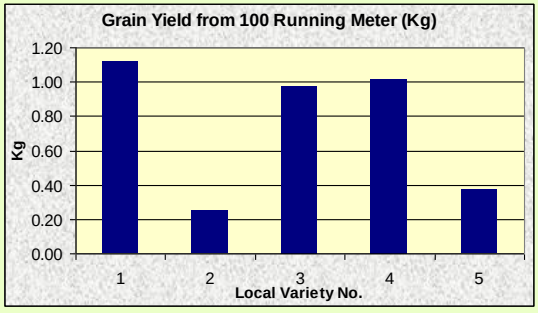
7.8 Observations of Sesame (Til) from sowing of local varieties for character mapping

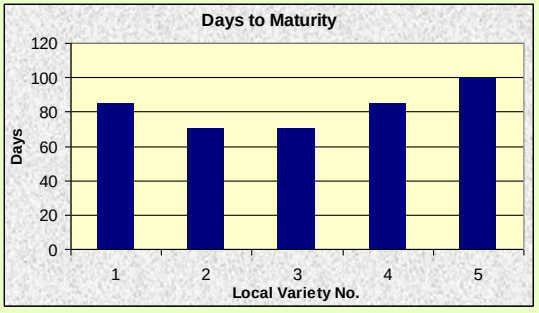
- Some local varieties have produced well, grain, compared to control line.
- Requires to collect and put under trial more good local varieties.
- Do not collect and put white and brown mix seeds.

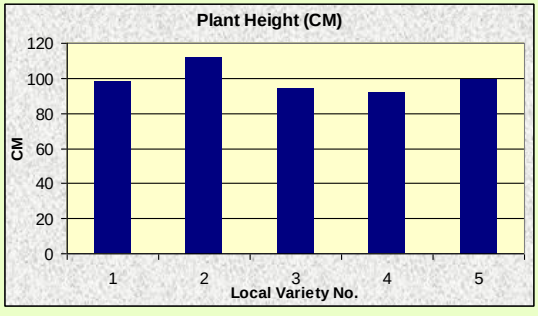
7.9 Sesame (Til) Average performance of Local Varieties for different characters : Timely Sown

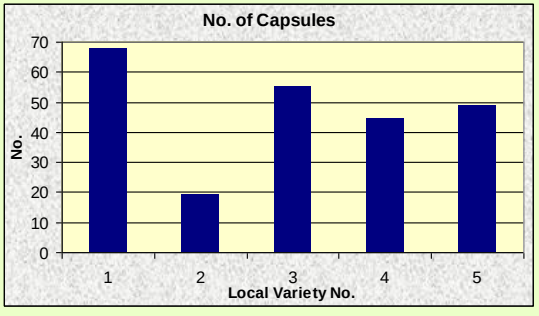
Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Capsules
1	1.115	64	85	98	67.78
4	1.013	70	85	92	44.26
3 Ctrl	0.975	54	70	94	55.1
5	0.369	63	100	99	48.66
2	0.25	56	70	112	18.89

Timely Sown


Grain Yield from 100 Running Meter (Kg)
Kg
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1
2
3
4
5
Local Variety No.


Days to Maturity
Days
120
100
80
60
40
20
0
1
2
3
4
5
Local Variety No.


Plant Height (CM)
CM
120
100
80
60
40
20
0
1
2
3
4
5
Local Variety No.


No. of Capsules
No.
70
60
50
40
30
20
10
0
1
2
3
4
5
Local Variety No.

7.10 Sesame (Til) Average performance of Local Varieties for different characters : Late Sown

Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Capsules
3 Ctrl	3.67	38	69	61	34
5	3.528	47	78	76	45.38
4	2.55	44	69	58	33.13
1	2.458	47	66	49	38.25
2	1.794	44	77	79	19.13

7.11 Summery of Cultivation of Sesame (Til) Lead Farmers for Kharif 2008 Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Lakhiben and Ravjibhai Jethabhai Ahir	Jiviben and Mahadevabhai Dudabhai Rajput	Amibai and Mamad Abhu Mandhra	Virbai and Sangram Lala Bhil	Haji Abreman Haji Karmi Jat	V.R.T.I., New Campus	Pamiben and Mandanbhai Karanbhai Vaniya	Kuvarben and Mohan Surji Koli	Soniben and Haribhai Samjibhai Dangar
Village of Evaluation Trial	Vang, Nakhatrana	Khodiyar Wandh, Rapar	Kala Talav, Abdasa	Tuga, Bhuj	Kanoj, Lakhapat	Mandvi, Mandvi	May, Bhachau	Nilpar, Rapar	Umedpar, Bhuj
Soil type	Loamy	Sandy Loam	Loamy	Loamy	Clayey	Loamy	Sandy Loam		Sandy Loam
Plot	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Undulating		Leveled
No. of ploughing before rain	1	1	2	0	1	2	2		1
Details of composting	No	No	No	No	No	No	No		No
Sowing done by	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Tractor		Bullock
Thinning	No	No	No	No	No	Yes	No		Yes
Weeds	Medium weed infestation	Almost weed free	Almost weed free	Medium weed infestation	Medium weed infestation	Almost weed free	Heavy weed infestation		Medium weed infestation
Sowing Time	August 1st Week	August 1st Week	August 1st Week	August 1st Week	August 2nd Week	June 4th Week	August 4th Week		June 3rd Week
Rainfall Upto Sowing (mm)		87	50	62	100	250			200
Rainfall in 2nd Week (mm)	87		25						
Rainfall in 3rd Week (mm)							50		12
Rainfall in 4th Week (mm)									
Rainfall in 5th Week (mm)					62	85			
Rainfall in 6th Week (mm)	50	62	75	37		120			
Rainfall in 7th Week (mm)						120			187
Rainfall in 8th Week (mm)									
Rainfall in 9th Week (mm)									
Rainfall in 10th Week (mm)									
Rainfall in 11th Week (mm)						100			
Rainfall in 12th Week (mm)									62

8 Castor (Aeranda)

8.1 Local Variety and Evaluation Trial

Name of Castor (Aeranda) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2008

Name of Seed Breeder Farmer	Village	Taluka
Mariyatbai and Jusab Peraj	Tuga	Bhuj
Gomtiben and Pravinbhai Jesabhai Dangar	Umedpar	Bhuj
Hathisinh Akheraj	Rudatal	Detroj
Hathisinh Akheraj	Rudatal	Detroj

At 10 locations (2 timely sown and 8 late sown) 5 varieties including 1 check were planted. The results of 5 locations (2 timely sown and 3 late sown) were obtained.

8.2 Grain Production

Castor (Aeranda) Grain Production ranking in superiority order

Timely Sown (June Sown)		Late Sown (August Sown)	
Early Maturity ***Up to 100 Days for 1st Picking*** *Local Variety No.*	Late Maturity ***101 and more Days for 1st Picking*** **Local Variety No.**	Early Maturity ***Up to 100 Days for 1st Picking*** *Local Variety No.*	Late Maturity ***101 and more Days for 1st Picking*** **Local Variety No.**
3 4 2 1	5	4 3 1	2 5

8.3 Days to First Picking – Timely Sowing

Early (≤ 90 Days)	Late (91 days and above)
1	5
2	
3	
4	

8.4 Drought Tolerance Ability

Local Variety No. 1 followed by Local Variety No. 4 and 3 were noted better drought tolerant varieties over locations.

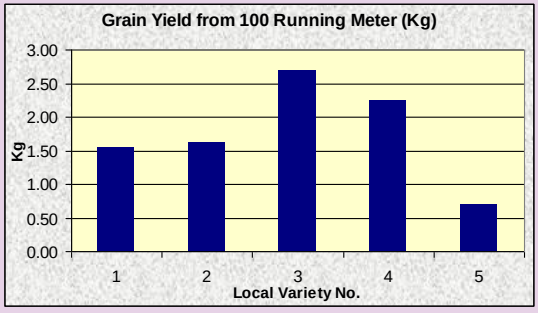
8.5 Observations of Castor (Aeranda) from sowing of local varieties for character mapping

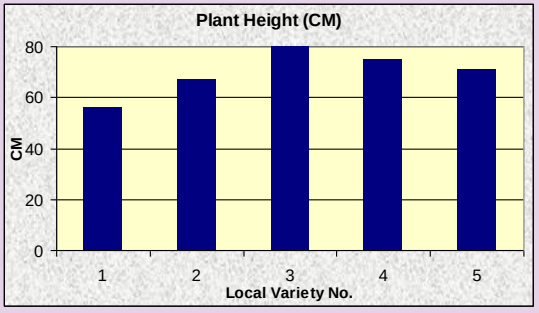
- Control line was highest in grain production and some other local variety also has good grain production.
- Requires to collect and put under trial more good local varieties.

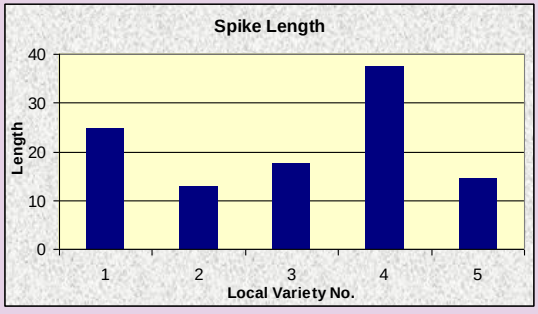
8.6 Castor (Aeranda) Average performance of Local Varieties for different characters : Timely Sown

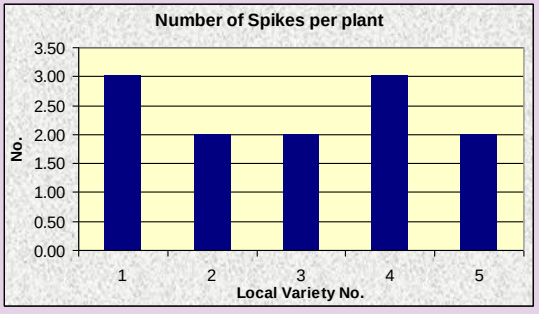
Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Plant Height (cm)	Spike Length	Number of Spikes per plant	Days – First Picking	Days – Second Picking	Weight of 100 seeds
3 Ctrl	2.683	65	80	17.65	2	80	-	22.2
4	2.254	60	75	37.61	3	90	-	22.69
2	1.618	54	67	12.81	2	71	-	21.03
1	1.534	52	56	24.65	3	71	-	22.63
5	0.695	69	71	14.55	2	100	-	23.2

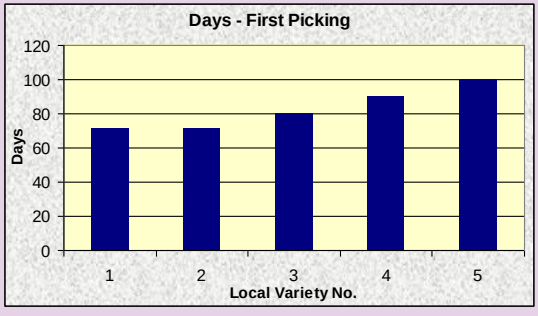
Timely Sown

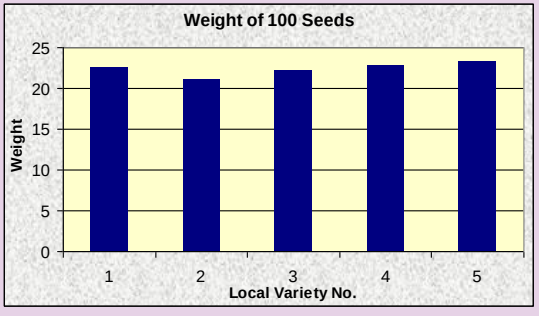

Grain Yield from 100 Running Meter (Kg)
Kg
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1
2
3
4
5
Local Variety No.


Plant Height (CM)
CM
80
60
40
20
0
1
2
3
4
5
Local Variety No.


Spike Length
Length
40
30
20
10
0
1
2
3
4
5
Local Variety No.


Number of Spikes per plant
No.
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1
2
3
4
5
Local Variety No.

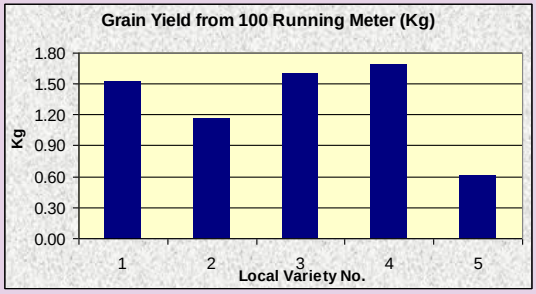

Days - First Picking
Days
120
100
80
60
40
20
0
1
2
3
4
5
Local Variety No.

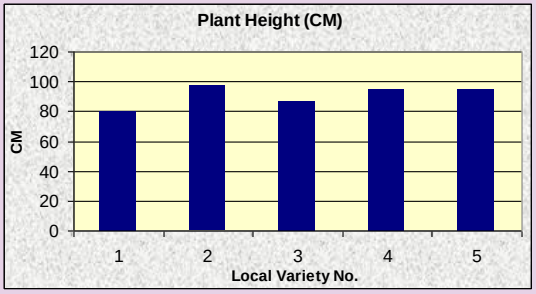

Weight of 100 Seeds
Weight
25
20
15
10
5
0
1
2
3
4
5
Local Variety No.

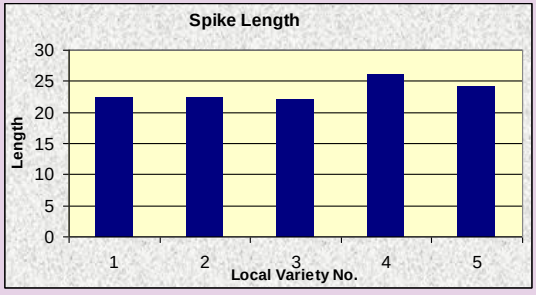
8.7 Castor (Aeranda) Average performance of Local Varieties for different characters : Late Sown

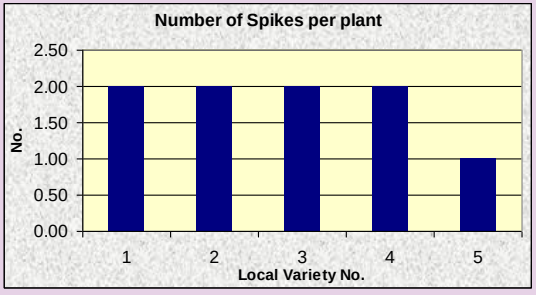
Local Variety No.	Grain Yield from 100 Running Meter (Kg)	Days to 50% Flowering	Plant Height (cm)	Spike Length	Number of Spikes per plant	Days – First Picking	Days – Second Picking	Weight of 100 seeds
4	1.687	98	95	26.17	2	127	186	25.43
3 Ctrl	1.593	105	87	22.02	2	142	186	23.3
1	1.524	107	80	22.43	2	142	186	24.75
2	1.161	112	97	22.36	2	145	186	20.33
5	0.606	121	95	24.25	1	155	186	20.73

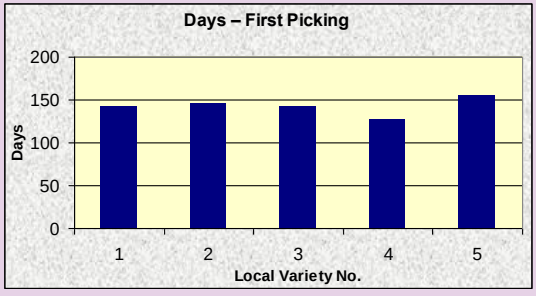
Late Sown

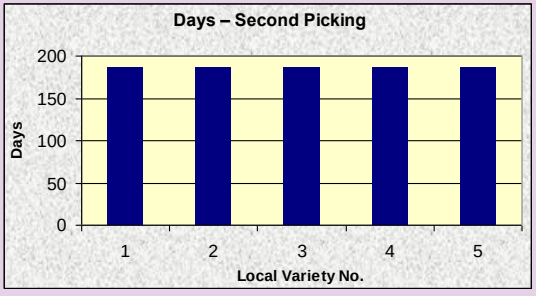

Grain Yield from 100 Running Meter (Kg)
Kg
1.80
1.50
1.20
0.90
0.60
0.30
0.00
1
2
3
4
5
Local Variety No.

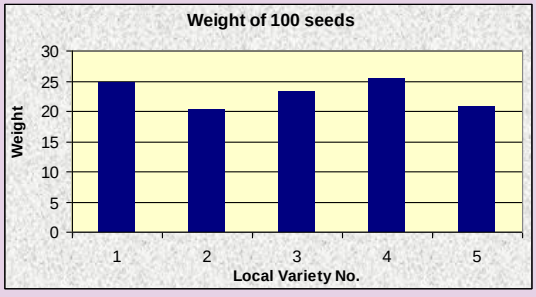

Plant Height (CM)
CM
120
100
80
60
40
20
0
1
2
3
4
5
Local Variety No.


Spike Length
Length
30
25
20
15
10
5
0
1
2
3
4
5
Local Variety No.


Number of Spikes per plant
No.
2.50
2.00
1.50
1.00
0.50
0.00
1
2
3
4
5
Local Variety No.


Days – First Picking
Days
200
150
100
50
0
1
2
3
4
5
Local Variety No.


Days – Second Picking
Days
200
150
100
50
0
1
2
3
4
5
Local Variety No.


Weight of 100 seeds
Weight
30
25
20
15
10
5
0
1
2
3
4
5
Local Variety No.

8.8 Summery of Cultivation of Castor (Aeranda) Lead Farmers for Kharif 2008 Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Soniben and Haribhai Samjibhai Dangar	V.R.T.I., New Campus	Lakhiben and Ravjibhai Jethabhai Ahir	Virbai and Sangram Lala Bhil	Jiviben and Mahadevabhai Dudabhai Rajput	Amibai and Mamad Abhu Mandhra	Haji Abreman Haji Karmi Jat	Kuvarben and Mohan Surji Koli	Pamiben and Mandanbhai Karanbhai Vaniya
Village of Evaluation Trial	Umedpar, Bhuj	Mandvi, Mandvi	Vang, Nakhatrana	Tuga, Bhuj	Khodiyar Wandh, Rapar	Kala Talav, Abdasa	Kanoj, Lakhapat	Nilpar, Rapar	May, Bhachau
Soil type	Sandy Loam	Loamy	Loamy	Loamy	Sandy Loam	Loamy	Clayey	Loamy	Sandy Loam
Plot	Leveled	Leveled	Leveled	Leveled	Undulating	Leveled	Leveled	Leveled	Undulating
No. of ploughing before rain	1	2	1	0	1	2	1	2	2
Details of composting	No	No	No	No	No	No	No	Yes	No
Sowing done by	Bullock	Tractor	Tractor	Tractor	Bullock	Tractor	Tractor	Bullock	Tractor
Thinning	Yes	Yes	No	No	No	No	No		No
Weeds	Medium weed infestation	Almost weed free	Medium weed infestation	Medium weed infestation	Almost weed free	Almost weed free	Medium weed infestation		Heavy weed infestation
Sowing Time	June 3rd Week	June 4th Week	August 1st Week	August 1st Week	August 1st Week	August 1st Week	August 1st Week		August 4th Week
Rainfall Upto Sowing (mm)	200	250		62	87	50	100		
Rainfall in 2nd Week (mm)			87			25			
Rainfall in 3rd Week (mm)	12								50
Rainfall in 4th Week (mm)									
Rainfall in 5th Week (mm)		85							
Rainfall in 6th Week (mm)		120	50	37	62	75	62		
Rainfall in 7th Week (mm)	187	120							
Rainfall in 8th Week (mm)									
Rainfall in 9th Week (mm)									
Rainfall in 10th Week (mm)									
Rainfall in 11th Week (mm)		100							
Rainfall in 12th Week (mm)	62								