

Traditional Seeds

Evaluation and Demonstration Trials

Analysis and Results of Rainfed Kharif 2009

in Kachchh District

Prepared By:

SATVIK

Promoting Ecological Farming



**Traditional Seeds Evaluation and Demonstration Trials
Analysis and Results of Rainfed Kharif 2009
in Kachchh District**

June - 2010

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Analysis and Results of Rainfed Kharif 2009 in Kachchh District

Year : JUNE - 2010

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Forward

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 and Kharif 2009.

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 July sowing) and Late sown (July - 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 for some of the crops 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. The results of each of the crop is described below.

Dr. S. N. Goyal

Retd. Principle Scientist (Plant Breeding)

1 Pearl Millet (Bajara)

1.1 Local Variety and Evaluation Trial

Name of Pearl Millet (Bajara) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2009

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	Gundiya	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 11 locations (7 timely sown and 4 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 result was obtained of 1 trial in late sown conditions.

2.2 Grain Production

Pearl Millet (Bajara) Grain Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4th Week and 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.
			11
			15
			13
			16
			10
			18
			9
			12
			4
			1
			5
			6
			7
			3
			17
			2
			8
			14

1.3 Fodder Production

Pearl Millet (Bajara) Fodder Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4 th Week and 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.
			12
			11
			13
			17
			18
			9
			10
			5
			6
			7
			14
			15
			16
			1
			2
			3
			4
			8

1.4 Disease

Name of Disease	Disease Free	Moderately Susceptible	Susceptible
Downy Mildew	Rest of	15	
Ergot	Rest of	3	

1.5 Pest

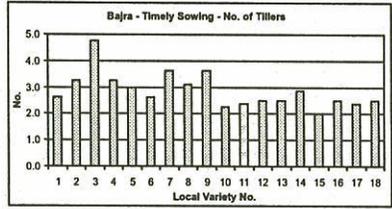
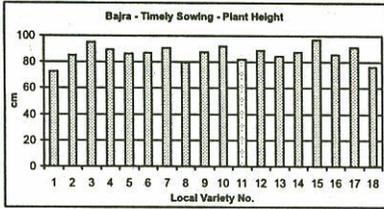
Name of Pest	Pest Free	Moderately Susceptible	Susceptible
Blister Beetle	Rest of	1 5	

1.6 Drought Tolerance Ability

Local Variety No. 1, 2, 3, 6, 8, 12 and 17 were noted to have drought tolerance ability judged over locations.

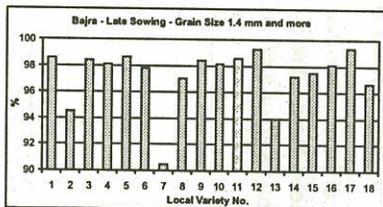
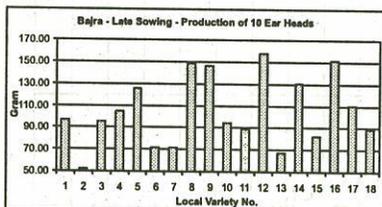
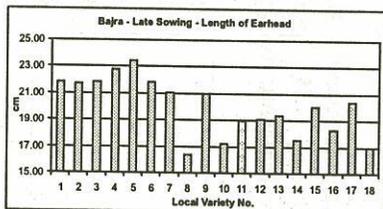
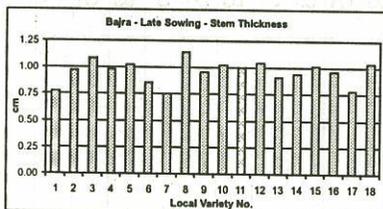
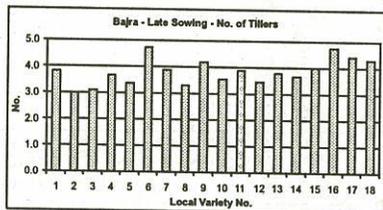
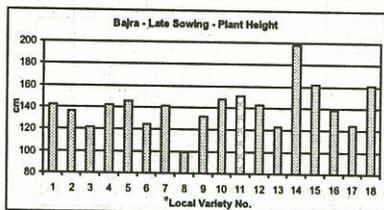
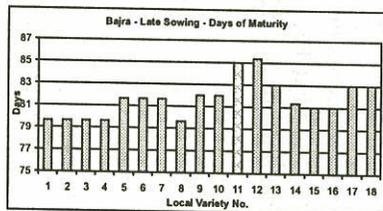
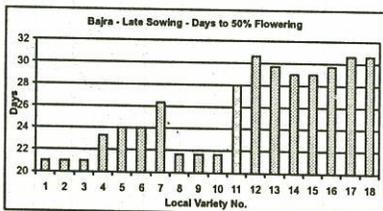
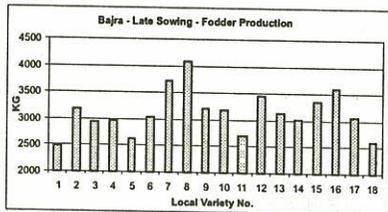
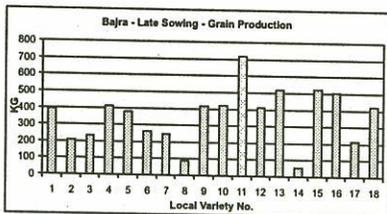
1.7 Farmer's Perception About Preferred Varieties for Various Trials

Detail	Local Variety No.
Grain	11, 17, 5, 3
Drought Tolerance	2, 8, 12, 14, 17
Fodder Purpose	2, 3, 7, 8, 9, 12, 14, 15, 16, 17
Early Maturity	2, 3, 4, 5, 7, 8, 10, 17



1.8 Pearl Millet (Bajara) Average performance of Local Varieties for difference characters : Timely Sown

Local Variety No.	Grain Yield Kg/Ha	Fodder Yield Kg/Ha	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 (%)
1					73	2.63				
2					85	3.25				
3					95	4.75				
4					89	3.25				
5					86	3.00				
6					87	2.63				
7					91	3.63				
8					80	3.13				
9					88	3.63				
10					92	2.25				
11C					82	2.38				
12					89	2.50				
13					85	2.50				
14					87	2.88				
15					97	2.00				
16					86	2.50				
17					92	2.38				
18					77	2.50				



1.9 Pearl Millet (Bajara) Average performance of Local Varieties for difference characters : Late Sown

Local Variety No.	Grain Yield Kg/Ha	Fodder Yield Kg/Ha	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 (%)
11C	715	2703	28	85	151	3.88	1.00	18.94	89.16	99
15	523	3352	29	81	162	3.99	1.02	20.01	82.56	98
13	519	3127	30	83	123	3.79	0.91	19.36	67.46	94
16	506	3617	30	81	138	4.76	0.97	18.31	151.16	98
10	422	3175	22	82	148	3.55	1.02	17.23	94.34	98
18	420	2602	31	83	161	4.29	1.04	17.00	89.00	97
9	417	3205	22	82	132	4.17	0.96	21.02	146.50	98
12	413	3447	31	85	143	3.45	1.05	19.10	157.94	99
4	412	2981	23	80	142	3.68	0.98	22.80	104.96	98
1	392	2476	21	80	142	3.83	0.78	21.86	96.86	99
5	378	2632	24	82	146	3.37	1.02	23.42	125.42	99
6	264	3035	24	82	125	4.73	0.86	21.84	71.22	98
7	249	3720	26	82	142	3.88	0.75	21.03	71.40	90
3	234	2954	21	80	121	3.09	1.09	21.85	95.20	98
17	211	3057	31	83	124	4.43	0.78	20.40	110.40	99
2	210	3185	21	80	137	3.01	0.97	21.73	52.46	95
8	86	4087	22	80	99	3.30	1.14	16.35	148.40	97
14	56	3018	29	81	198	3.68	0.94	17.52	130.16	97

1.10 Summary of Cultivation of Pearl Millet (Bajara) Lead Farmers for Kharif 2009 for Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Meghiben and Mamubhai Ahir	Varshaben and Bharat Damji Boda	Lilavante and Mangaldas Ramji Gor	Niraben and Narendrabhai Shah	Rashidaben and Mamadsa Hajimiya	Kunvarben and Mohan Surji Koli	Vajuben and Dayalbai Makwana	Mariyamben and Alimamad Juma Rayma	Libai and Jusab Mishri Sama	Kunvarben and Arjanbhai Chavda	Chetan Babu Makwana	Shrujan, Dayapar
Village of Evaluation Trial	Vang, Nakhatrana	Gundiyal, Mandvi	Maska, Mandvi	Sindhodi, Abdasa	Vatra, Bhuj	Nilpar, Rapar	Nagtar, Rapar	Budharmor, Anjar	Tuga, Bhuj	Chasra, Mundra	Mangadh, Rapar	Ukher, Lakhpat
Soil type	Lomy	Clayey	Lomy	Lomy	Lomy	Sandy Loam	Sandy Loam	Lomy	Lomy	Lomy	Lomy	Lomy
Plot	Leveled	Leveled	Leveled	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	2	1	1	1	1	1	1	1	1	1	1	1
Details of composting	No	No	No	No	No	No	No	No	No	No	No	No
Sowing done by	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor
Thinning	No	No	Yes	No	No	No	Yes	No	No	No	No	No
Weeds	Medium weed infestation	Heavy weed infestation	Almost weed free	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Almost weed free	Medium weed infestation
Sowing Time	June 4 th Week	July 1 st Week	July 1 st Week	July 1 st Week	July 2 nd Week	July 2 nd Week	July 2 nd Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week

2. Sorghum (Jowar)

2.1 Local Variety and Evaluation Trial

Name of Sorghum (Jowar) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2009

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 9 locations (6 timely sown and 3 late sown) for fodder evaluation; however results of 2 timely sown and 1 late sown trials were obtained.

2.2 Fodder Production

Sorghum (Jowar) Fodder Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4th Week and 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.
	10		4
	7		7
	5		3
	1		6
	8		5
	9		10
	4		11
	3		2
	11		9
	6		8
	2		1

2.3 Disease

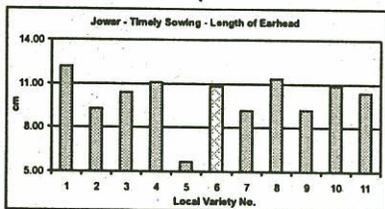
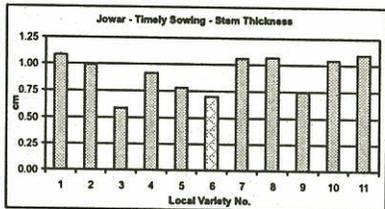
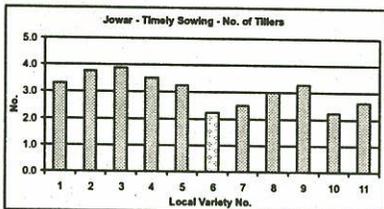
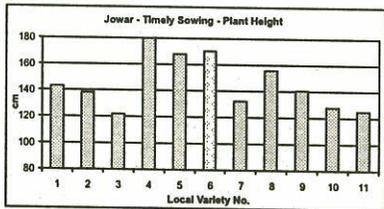
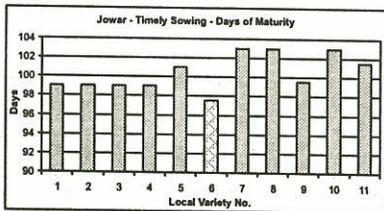
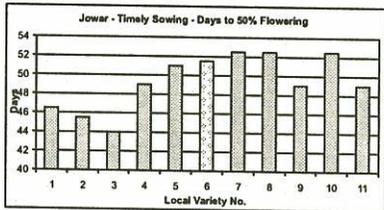
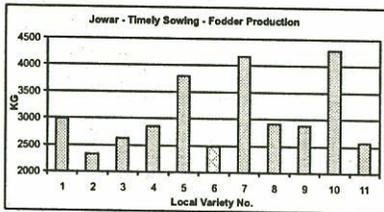
Name of Disease	Disease Free	Moderately Susceptible	Susceptible
Anthraxnose		All Varieties	
Leaf Disease		All Varieties	

2.4 Drought Tolerance Ability

Varieties No. 1, 2, 5, 6 and 8 were relatively more drought tolerant than others.

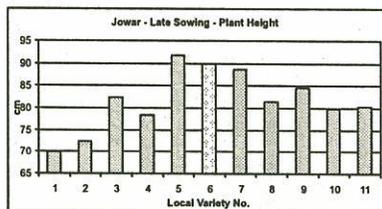
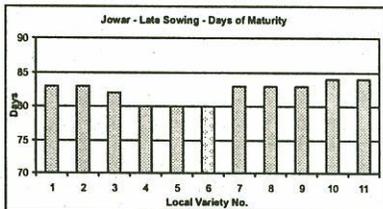
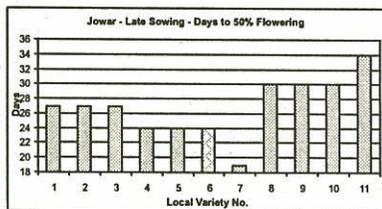
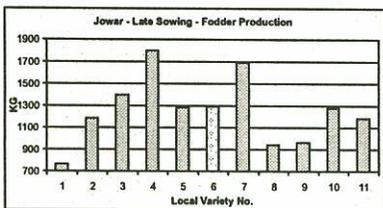
2.5 Farmer's Perception About Preferred Varieties for Various Trials

Detail	Local Variety No.
Drought Tolerance	5, 6, 7, 8, 10
Grain Purpose	2, 3, 9, 11
Fodder Purpose	2, 3, 4, 5, 6, 7, 8, 9, 11
Early Maturity	1, 2, 3, 4, 6, 9, 11



2.6 Sorghum (Jowar) Average performance of Local Varieties for difference characters : Timely Sown

Local Variety No.	Fodder Yield Kg/Ha	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Tillers	Stem Thickness (cm)	Length of Ear head (cm)
10	4293	53	103	128	2.24	1.05	10.88
7	4172	53	103	132	2.51	1.06	9.13
5	3798	51	101	168	3.26	0.79	5.63
1	2987	47	99	143	3.33	1.09	12.19
8	2906	53	103	156	3.03	1.07	11.38
9	2876	49	100	141	3.29	0.75	9.20
4	2852	49	99	180	3.51	0.92	11.08
3	2634	44	99	122	3.90	0.59	10.41
11	2571	49	102	125	2.61	1.10	10.40
6C	2479	52	98	170	2.23	0.70	10.83
2	2327	46	99	138	3.76	1.00	9.28



2.7 Sorghum (Jowar) Average performance of Local Varieties for difference characters : Late Sown

Local Variety No.	Fodder Yield Kg/Ha	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. of Tillers	Stem Thickness (cm)	Length of Ear head (cm)
1	762	27	83	69.9			
2	1184	27	83	73			
3	1399	27	82	82			
4	1798	24	80	78			
5	1288	24	80	92			
6C	1292	24	80	90			
7	1695	19	83	89			
8	940	30	83	82			
9	962	30	83	85			
10	1282	30	84	80			
11	1189	34	84	80			

2.8 Summary of Cultivation of Sorghum (Jowar) Lead Farmers for Kharif 2009 for Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Meghiben and Mamubhai Ahir	V.R.T.I., Naliya	Varshaben and Bharat Damji Boda	Nitaben and Narendrabhai Shah	Rashidaben and Mamadsa Hajimiya	Kunvarben and Mohan Surji Koli	Vajuben and Dayalbhai Makwana	Havabai and Abdul Rashid Ramjan	Shantaba and Babubha Jadeja	Shrujan, Dayapar
Village of Evaluation Trial	Vang, Nakhatrana	Naliya, Abdasa	Gundiyali, Mandvi	Sindhodi, Abdasa	Vatra, Bhuj	Nilpar, Rapar	Nagtar, Rapar	Dhosa, Bhuj	Hatdi, Mundra	Ukher, Lakhpat
Soil type	Lomy	Sandy Loam	Clayey	Lomy	Lomy	Sandy Loam	Sandy Loam	Lomy	Lomy	Lomy
Plot	Leveled	Leveled	Leveled	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	2	1	1	1	1	1	1	1	1	1
Details of composting	No	No	No	No	No	No	No	No	No	No
Sowing done by	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor
Thinning	No	No	No	No	No	No	Yes	No	No	No
Weeds	Medium weed infestation	Medium weed infestation	Heavy weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation
Sowing Time	June 4 th Week	July 1 st Week	July 1 st Week	July 1 st Week	July 2 nd Week	July 2 nd Week	July 2 nd Week	July 4 th Week	July 4 th Week	July 4 th Week

3 Green Gram (Moong)

3.1 Local Variety and Evaluation Trial

Name of Green Gram (Moong) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2009

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	Gundiya	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	Lakhdhirdadh	Bhachau
Maliben and Mulubhai Melabhai Koli	Pipra Wandh	Bhachau

The trials were conducted on 12 locations (5 timely sown and 7 late sown) taking 18 varieties however results were obtained of 5 (3 timely sown and 2 late sown) locations only.

3.2 Grain Production

There was a significant difference among varieties at all the locations. Variety No. 17 at Vang and all varieties at Maska locations were noted significantly superior than check variety Gujarat Moong 4. The ranking of varieties for grain yield in descending order as per maturity durations is given below...

Green Gram (Moong) Grain Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4 th Week and 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.
	8	17	16
	4	16	13
	6	15	9
	13	14	4
	10	18	17
	11		12
	2		5
	5		15
	12		1
	3		8
	1		11
	7		18
	9		14
			3
			7
			10
			2
			6

3.3 Fodder Production

Green Gram (Moong) Fodder Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4 th Week and 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.
	2	17	17
	13	18	4
	12	15	13
	5	16	16
	11	14	11
	1		1
	10		18
	7		15
	3		8
	6		12
	4		5
	8		14
	9		9
			3
			10
			2
			6

3.4 Disease

Name of Disease	Disease Free	Moderately Susceptible	Susceptible
Wilt	Resf of	2	
		9	

3.5 Pest

Name of Pest	Pest Free	Moderately Susceptible	Susceptible
Aphid	Resf of	1	
Pink Pod Borer	Resf of	1 2 3 7 8 9 13	
Sphinx	Resf of	1	

3.6 Drought Tolerance Ability

Local variety No. 1, 2, 3, 7, 8, 16 and 18 were noted drought tolerant.

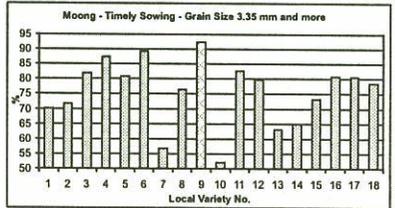
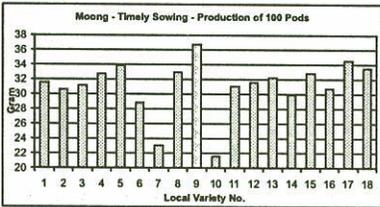
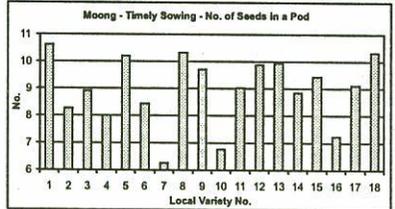
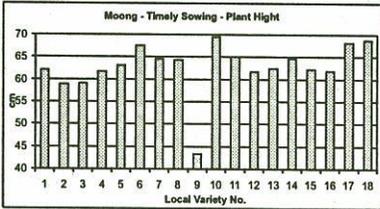
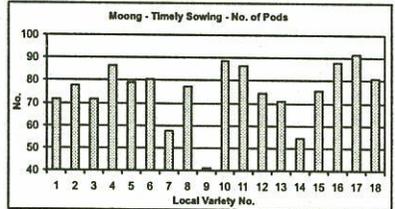
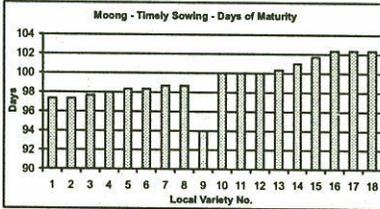
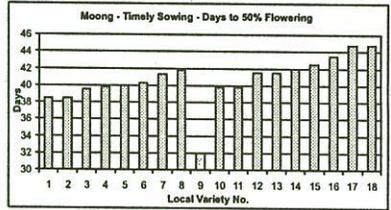
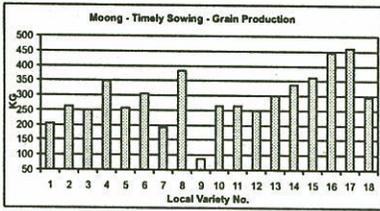
3.7 Plant Type

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

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

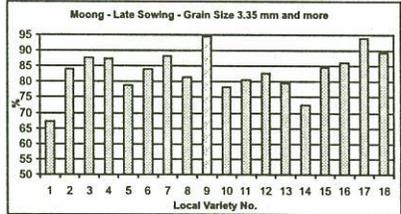
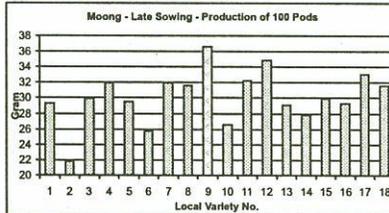
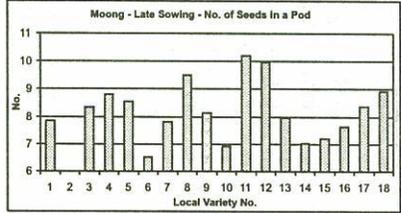
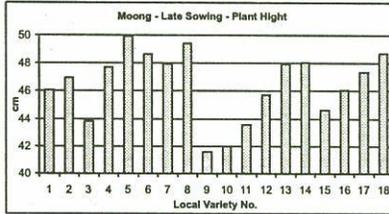
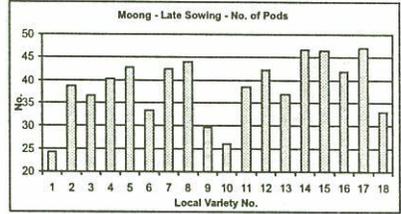
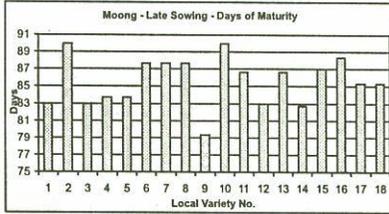
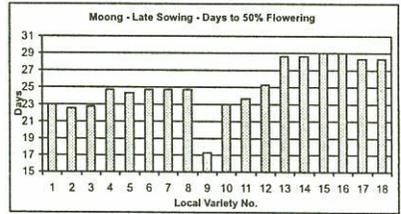
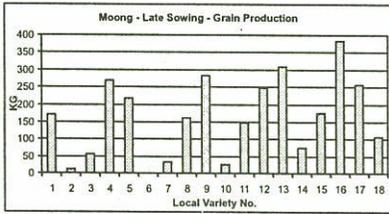
3.8 Farmer's Perception About Preferred Varieties for Various Trials

Detail	Local Variety No.
Drought Tolerance	3, 7, 10, 12, 14
Grain Purpose	4, 6, 8, 16, 18
Fodder Purpose	2, 5, 11, 12, 13, 15, 16, 17, 18
Early Maturity	2, 4, 6, 8, 9, 16, 17, 18



3.8 Green Gram (Moong) Average performance of Local Varieties for difference characters : Timely Sown

Local Variety No.	Grain Yield Kg/Ha	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 (%)
17	461	45	102	91.36	68	9.12	34.49	80.71
16	445	44	102	88.01	62	7.25	30.70	80.82
8	382	42	99	77.16	64	10.33	32.97	76.48
15	360	43	102	75.55	62	9.45	32.85	73.33
4	349	40	98	86.36	62	8.00	32.78	87.49
14	339	42	101	54.69	65	8.87	29.87	64.90
6	306	40	98	80.62	68	8.45	28.80	89.36
13	301	42	100	70.83	62	9.93	32.23	63.09
18	296	45	102	80.95	69	10.33	33.52	78.41
10	265	40	100	88.72	69	6.77	21.62	52.02
11	265	40	100	86.59	65	9.02	31.09	82.65
2	263	39	97	77.72	59	8.27	30.61	71.79
5	259	40	98	78.93	63	10.20	33.88	80.96
12	250	42	100	74.52	62	9.88	31.59	79.72
3	249	40	98	71.55	59	8.92	31.13	81.98
1	205	39	97	71.73	62	10.62	31.55	70.08
7	191	41	99	57.89	64	6.27	23.01	56.93
9C	87	32	94	41.04	43	9.72	36.70	92.44



3.10 Green Gram (Moong) Average performance of Local Varieties for difference characters : Late Sown

Local Variety No.	Grain Yield Kg/Ha	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 (%)
16	383	29	88	41.91	46	7.63	29.30	86.20
13	310	29	87	37.02	48	7.95	29.11	79.62
9C	283	17	79	29.71	42	8.13	36.66	94.45
4	269	25	84	40.26	48	8.82	31.89	87.31
17	257	28	85	47.04	47	8.37	33.12	93.89
12	249	25	83	42.24	46	9.98	34.84	82.65
5	217	24	84	42.76	50	8.55	29.49	78.81
15	175	29	87	46.51	45	7.20	29.90	84.45
1	171	23	83	24.29	46	7.83	29.29	67.36
8	162	25	88	43.92	49	9.50	31.59	81.45
11	147	24	87	38.54	44	10.22	32.25	80.68
18	107	28	85	33.10	49	8.93	31.60	89.31
14	75	29	83	46.60	48	7.02	27.86	72.54
3	55	23	83	36.58	44	8.33	29.95	87.59
7	34	25	88	42.36	48	7.82	31.91	88.11
10	25	23	90	26.08	42	6.90	26.56	78.24
2	11	23	90	38.74	47	5.12	21.76	83.95
6	0	25	88	33.33	49	6.52	25.72	83.97

3.11 Summary of Cultivation of Green Gram (Moong) Lead Farmers for Kharif 2009 for Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Manbai and Khimji Marwada	Varshaben and Bharat Damji Boda	Lilavanti and Mangaldas Ramji Gor	Ritaben and Dhiraal Shankarji Motra	Nitaben and Narendrabhai Shah	Rashidaben and Mamada Hajimiya	Kunvarben and Mohan Surji Koli	Vajuben and Dayalbhai Makwana	Mariyamben and Alimamad Juma Rayma	Kesharden and Harun Kasim Sama	Havabai and Abdul Rashid Ramjan	Ulbai and Jusab Mishri Sama	Kunvarben and Arjanbhai Chavda	Chetan Babu Makwana	Shrujan, Dayabar
Village of Evaluation Trial	Vang, Nakhatrana	Gundiayali, Mandvi	Maska, Mandvi	Maska, Mandvi	Sindhodi, Abdasa	Vatra, Bhuj	Nilpar, Rapar	Nagtar, Rapar	Budharmora, Anjar	Tuga, Bhuj	Dhosa, Bhuj	Tuga, Bhuj	Chasra, Mundra	Mangadh, Rapar	Ukher, Lakhpatt
Soil type	Lomy	Clayey	Lomy	Lomy	Lomy	Undulating	Sandy Loam	Sandy Loam	Lomy	Lomy	Lomy	Lomy	Lomy	Lomy	Lomy
Plot	Leveled	Leveled	Leveled	Leveled	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Details of composting	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Sowing done by	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor
Thinning	No	No	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
Weeds	Medium weed infestation	Heavy weed infestation	Almost weed free	Heavy weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Almost weed free	Medium weed infestation
Sowing Time	June 4 th Week	July 1 st Week	July 1 st Week	July 1 st Week	July 1 st Week	July 2 nd Week	July 2 nd Week	July 2 nd Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week

4 Moth Bean (Math/Korad)

4.1 Local Variety and Evaluation Trial

Name of Moth Bean (Math/Korad) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2009

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

6 varieties were evaluated at 10 locations (6 timely sown and 4 late sown) of which results were obtained of 4 location (2 timely and 2 late sown).

There was no significant difference among entries for grain yield. However entry no. 1 followed by entry no. 2 gave more grain yield than others. Their ranking for grain and fodder yield is as below...

4.2 Grain Production

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

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4 th Week and 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.
1	2	6	3
3	4		1
	5		2
			4
			5
			6

4.3 Fodder Production

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

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4th Week and 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.
1	2	6	5
3	5		6
	4		4
			3
			2
			1

4.4 Drought Tolerance Ability

Local Variety No. 6 was noted drought tolerant over locations followed by Local Variety No. 1, 4, 2, 5.

4.5 Plant Type

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

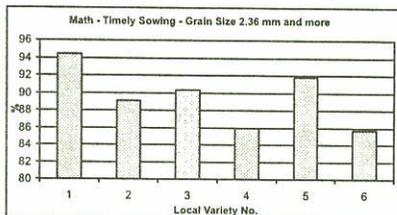
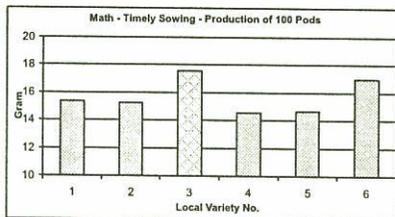
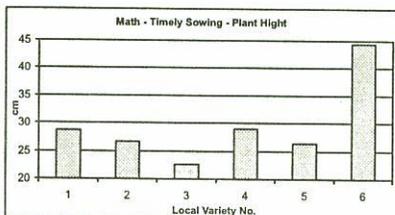
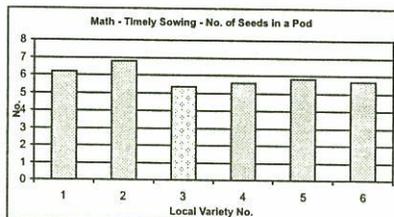
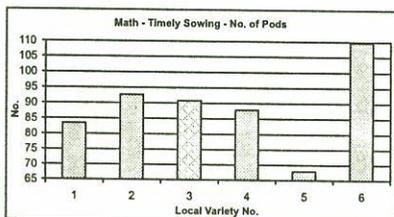
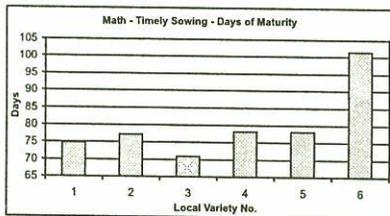
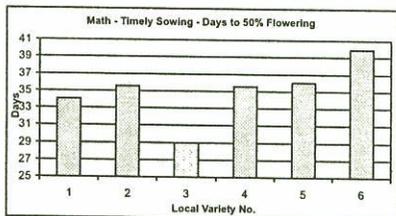
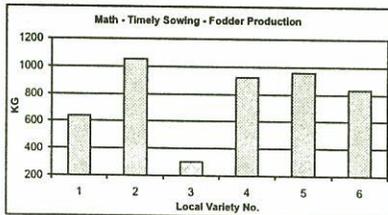
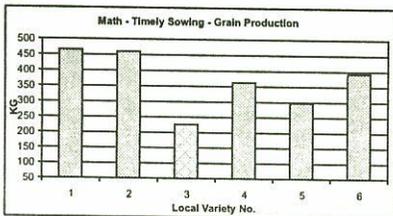
ଓରସି / Erect Type	ଦେରସି / Vine Type
1	2
3	4
5	6

4.6 Grain Color

Local Variety No. 5 was lighter than others.

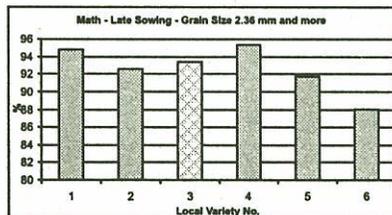
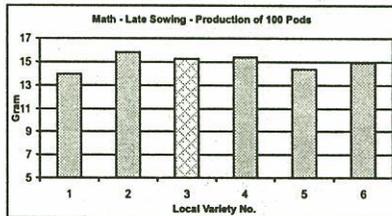
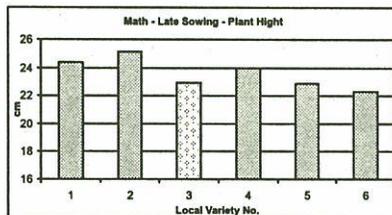
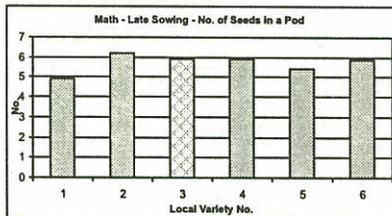
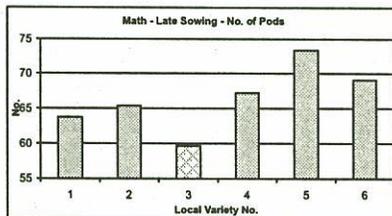
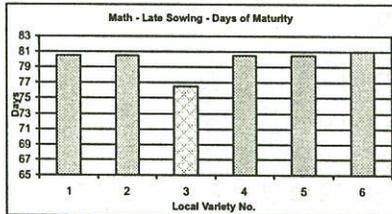
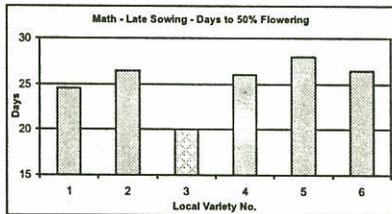
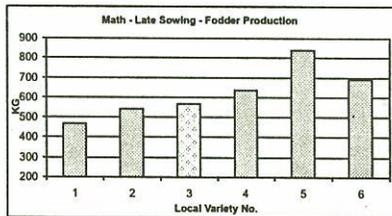
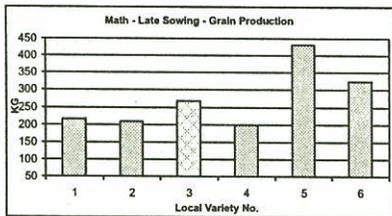
4.7 Farmer's Perception About Preferred Varieties for Various Trials

Detail	Local Variety No.
Drought Tolerance	1, 5, 6
Grain Purpose	1, 2, 4
Fodder Purpose	1, 2, 4, 5, 6
Early Maturity	2, 3, 4, 5, 6



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

Local Variety No.	Grain Yield Kg/Ha	Fodder Yield Kg/Ha	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 (%)
1	464.868	637.362	34	75	83.46	6.18	29	15.33	94
2	459.540	1050.060	36	77	92.71	6.80	27	15.22	89
6	391.460	832.389	40	102	109.70	5.68	44	17.00	86
4	363.044	923.742	36	78	87.94	5.60	29	14.55	86
5	296.148	954.600	36	78	67.95	5.83	26	14.65	92
3C	225.996	301.698	29	71	90.66	5.35	23	17.56	90



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

Local Variety No.	Grain Yield Kg/Ha	Fodder Yield Kg/Ha	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	431.346	837.828	28	81	73.40	5.43	23	14.39	91.73
6	324.120	691.086	27	81	69.05	5.85	22	14.92	88.06
3C	268.842	566.544	20	77	59.65	5.90	23	15.30	93.41
1	215.340	469.530	25	81	63.70	4.90	24	13.97	94.79
2	209.124	541.680	27	81	65.35	6.20	25	15.82	92.56
4	199.356	637.584	26	81	67.20	5.90	24	15.37	95.36

4.10 Summary of Cultivation of Moth Bean (Math/Korad) Lead Farmers for Kharif 2009 for Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Mambai and Khimji Marwada	V.R.T.L., Naliya	Varshaben and Bharat Damji Boda	Lilavanti and Mangaldas Ramjis Gor	Ritaben and Dhirajal Shankarji Mota	Nitaben and Narendrabhai Shah	Rashidaben and Mamadsa Hajimiya	Kunvarben and Mohan Surji Koli	Vajuben and Dayalbhai Makwana	Havabai and Abdul Rashid Ramjan	Lilbai and Jusab Mishri Sama	Chetan Babu Makwana	Shrujan, Dayapar
Village of Evaluation Trial	Vang, Nakhatrana	Naliya, Abdasa	Gundiya, Mandvi	Maska, Mandvi	Maska, Mandvi	Sindhodi, Abdasa	Vatra, Bhuj	Nilpar, Rapar	Nagtar, Rapar	Dhosa, Bhuj	Tuga, Bhuj	Mangadh, Rapar	Ukher, Lakhpat
Soil type	Lomy	Sandy Loam	Clayey	Lomy	Lomy	Lomy	Lomy	Sandy Loam	Sandy Loam	Lomy	Lomy	Lomy	Lomy
Plot	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	1	1	1	1	1	1	1	1	1	1	1	1	1
Details of sowing done	No	No	No	No	No	No	No	No	No	No	No	No	No
Sowing done by	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Tractor
Thinning	No	No	No	No	No	No	No	No	Yes	No	No	No	No
Weeds	Medium weed infestation	Medium weed infestation	Heavy weed infestation	Almost weed free	Heavy weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Almost weed free	Medium weed infestation
Sowing Time	June 4 th	July 1 st	July 1 st	July 1 st	July 1 st	July 1 st	July 2 nd	July 2 nd	July 2 nd	July 4 th	July 4 th	July 4 th	July 4 th
	Week	Week	Week	Week	Week	Week	Week	Week	Week	Week	Week	Week	Week

5 Cluster Bean (Guwar)

5.1 Local Variety and Evaluation Trial

Name of Cluster Bean (Guwar) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2009

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 13 locations (8 timely sown and 5 late sown) Cluster Bean (Guwar) trials were planted but results of 7 locations (4 timely sown and 3 late sown) for grain yield were noted. In all 8 varieties including 1 check was planted.

5.2 Grain Production

Cluster Bean (Guwar) Grain Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4th Week and 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	6
		4	2
		5	7
		2	4
		6	1
		1	5
		8	3
			8

5.3 Fodder Production

Cluster Bean (Guwar) Fodder Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4th Week and 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	2
		2	7
		7	4
		6	6
		4	5
		5	1
		8	3
			8

5.4 Pest

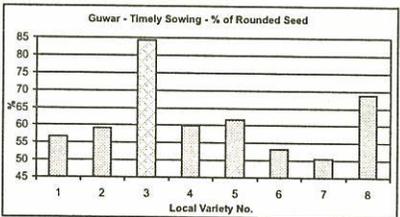
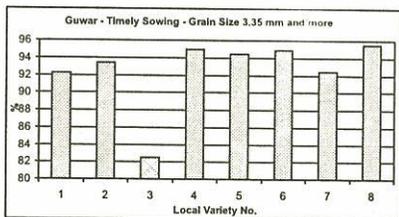
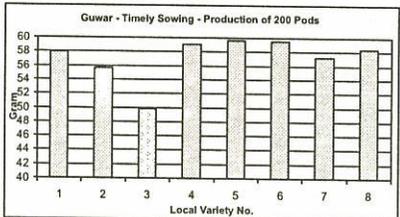
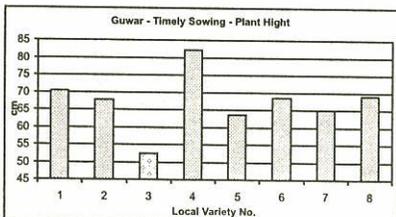
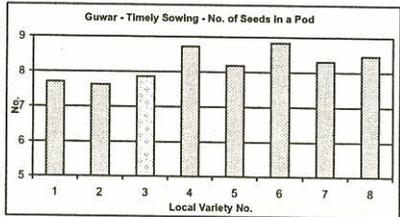
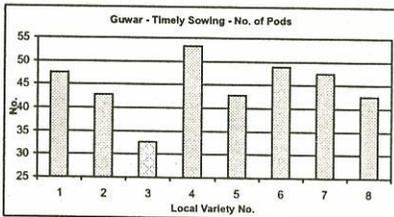
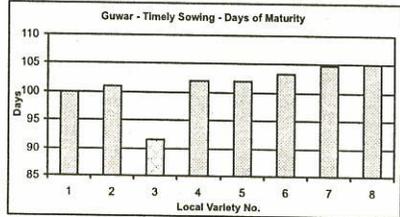
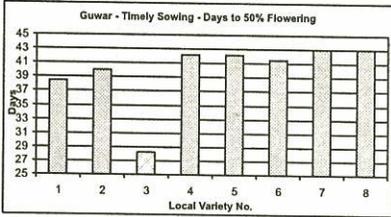
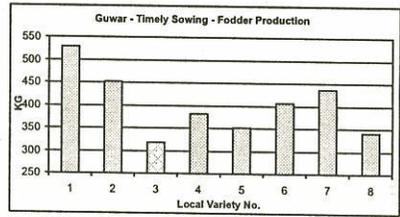
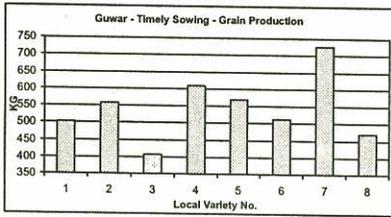
Name of Pest	Pest Free	Moderately Susceptible	Susceptible
Hairy Catter Pillar	Resf of	3	

5.5 Drought Tolerance Ability

Local Variety No. 1, 2, 4 and 5 under timely sown conditions and Local Variety No. 2, 4 and 7 under late sown conditions were found better.

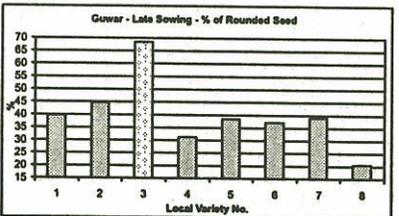
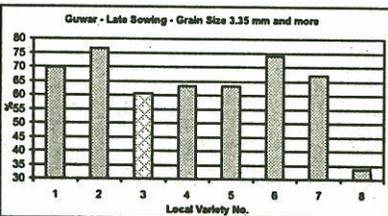
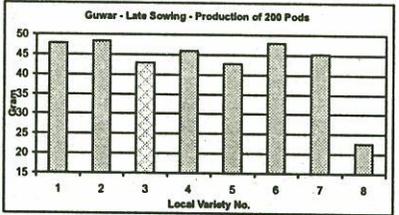
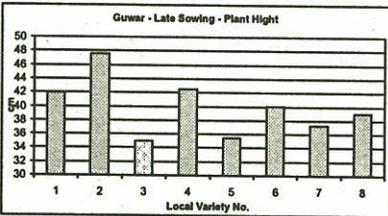
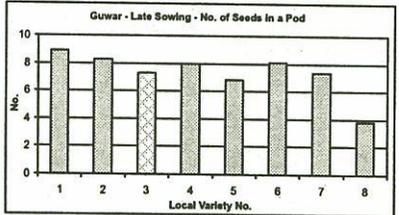
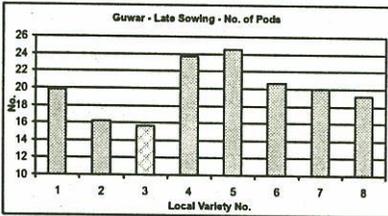
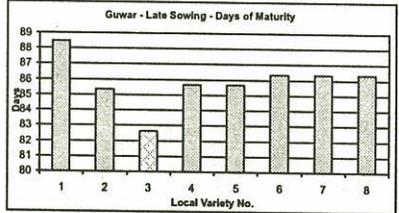
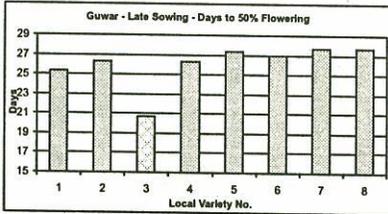
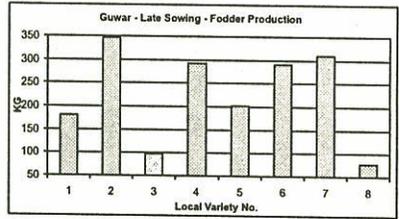
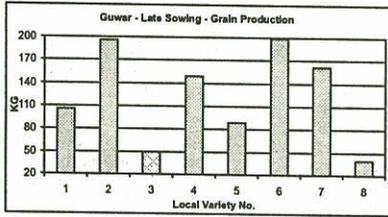
5.6 Grain Color

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



5.7 Cluster Bean (Guwar) Average performance of Local Varieties for difference characters : Timely Sown

Local Variety No.	Grain Yield Kg/Ha	Fodder Yield Kg/Ha	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	725.607	435.120	43	105	47.51	8.30	65	57.26	92.41	50.45
4	609.945	382.284	42	102	53.31	8.71	82	59.08	94.98	59.81
5	567.876	352.092	42	102	42.76	8.19	64	59.69	94.40	61.65
2	556.443	450.882	40	101	42.84	7.63	68	55.61	93.43	59.20
6	512.820	406.630	42	103	48.92	8.84	68	59.60	94.94	53.28
1	503.163	528.508	39	100	47.48	7.70	70	57.92	92.27	56.61
8	470.196	341.510	43	105	42.62	8.48	69	58.37	95.58	68.85
3C	405.705	318.200	28	92	32.70	7.86	52	49.80	82.52	84.23



5.8 Cluster Bean (Guwar) Average performance of Local Varieties for difference characters : Late Sown

Local Variety No.	Grain Yield Kg/Ha	Fodder Yield Kg/Ha	Days to 50% Flowering	Days of Maturity	No. of Pods in a Pod	No. of Seed in a Pod	Plant Height (cm)	Production of 200 Pods (Gram)	Grain Size 3.35 mm and more (%)	% of Rounded Seed
6	199.208	290.672	27	86	20.63	8.08	40	48.06	73.91	37.22
2	195.508	346.098	26	85	16.23	8.28	48	48.41	76.62	44.64
7	162.208	309.986	28	86	19.98	7.33	37	45.27	67.03	38.99
4	149.036	292.596	26	86	23.68	8.00	43	46.07	63.13	31.18
1	106.264	180.856	25	89	19.83	8.90	42	47.85	69.76	39.74
5	88.504	201.872	27	86	24.53	6.83	35	42.84	63.16	38.43
3C	49.728	96.792	21	83	15.60	7.30	35	42.87	60.50	68.31
8	39.072	77.922	28	86	19.19	3.80	39	22.70	33.63	20.51

6.9 Summary of Cultivation of Cluster Bean (Guwar) Lead Farmers for Kharif 2009 for Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Village of Evaluation Trial	V.R.T.L., Naliya	Varshaben and Bharat Damji Boda	Lilavantiaben and Mangaldas Ramji Gor	Ritaben and Dhirajal Shankarji Mota	Nitaben Narendrabhai Shah	Rashidaben and Mamadsa Hajimiya	Kunwarben and Mohan Surji Koli	Vajuben and Dayalbhai Makwana	Havabai and Abdul Rashid Ramjan	Ulbai and Jusab Mishri Sama	Shantaba and Babubha Jadeja	Chetan Babu Makwana	Shrujan, Dayapar
	Vang, Nakhatrana	Naliya, Abdasa	Gundiyali, Mandvi	Maska, Mandvi	Maska, Mandvi	Sindhodi, Abdasa	Vatra, Bhuj	Nilpar, Rapar	Nagar, Rapar	Dhosa, Bhuj	Tuga, Bhuj	Hatdi, Mundra	Mangadh, Rapar	Ukher, Lakhpat
Soil type	Lomy Leveled	Sandy Loam Leveled	Clayey Leveled	Lomy Leveled	Lomy Leveled	Lomy Leveled	Undulating	Sandy Loam Leveled	Sandy Loam Leveled	Lomy Leveled	Lomy Leveled	Lomy Leveled	Lomy Leveled	Lomy Leveled
No. of ploughing before rain	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Details of composting by	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Sowing done by	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor
Thinning	No	No	No	Yes	No	No	No	No	Yes	No	No	No	No	No
Weeds	Medium weed infestation	Medium weed infestation	Heavy weed infestation	Almost weed free	Heavy weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Almost weed free	Medium weed infestation
Sowing Time	June 4 th Week	July 1 st Week	July 1 st Week	July 1 st Week	July 1 st Week	July 1 st Week	July 2 nd Week	July 2 nd Week	July 2 nd Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week

6 Sesame (Til)

6.1 Local Variety and Evaluation Trial

Name of Sesame (Til) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2009

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

6 varieties including 1 check Guj Til-2 was evaluated on 12 locations (6 timely sown and 6 late sown) but yield result is obtained of only 1 locations (1 timely sown) which is presented as below-

6.2 Grain Production

Sesame (Til) Grain Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)			Late Sown (July 4 th Week and 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.
	1		
	4		
	3		
	5		
	6		
	2		

6.3 Grain Color

Local Variety No.	Color
1, 3, 4, 6,	White
2	Brown
5	Mixture of white and brown

6.4 Disease

Name of Disease	Disease Free	Moderately Susceptible	Susceptible
Leaf spot	2	1	
	5	3	
	6	4	
Wilt		1	3
		2	4
		5	
		6	
Leaf curl		All	

6.5 Drought Tolerance Ability

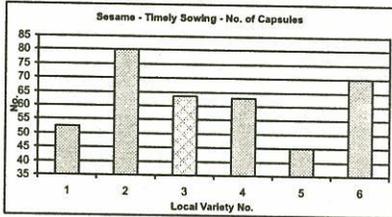
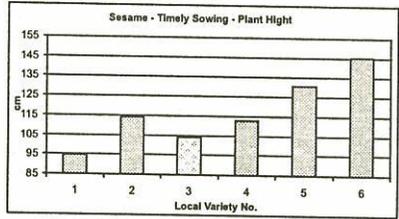
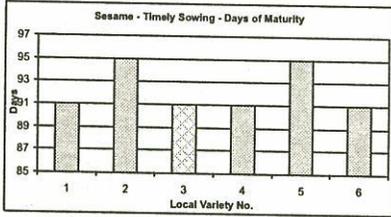
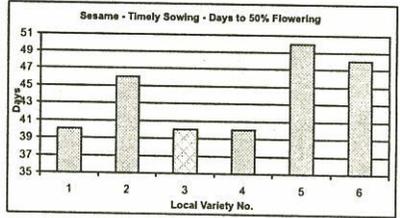
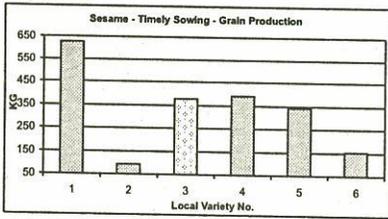
Local Variety No. 2 and 5 were found drought tolerant.

6.6 Capsule on Plant

Local Variety No.	Pattern
1, 3, 4,	Capsule Two opposite
2, 5	Capsules One opposite
6	Six Chambered Capsules

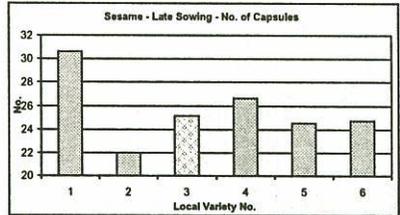
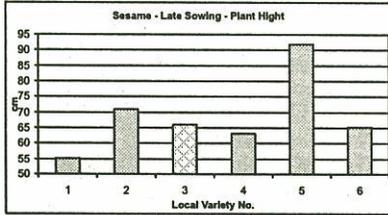
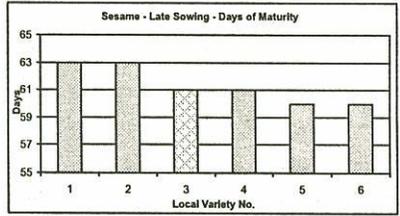
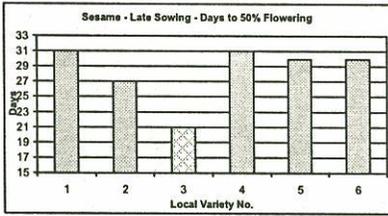
6.7 Farmer's Perception About Preferred Varieties for Various Trials

Detail	Local Variety No.
Drought Tolerance	2, 5, 6
Grain Purpose	1, 3, 4, 5
Early Maturity	1, 2, 3, 4, 5, 6



6.8 Sesame (Tri) Average performance of Local Varieties for difference characters : Timely Sown

Local Variety No.	Grain Yield Kg/Ha	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. Of Capsules
1	626.040	40	91	95	52.50
4	390.720	40	91	113	62.88
3C	377.400	40	91	104	63.38
5	341.880	50	95	131	45.00
6	150.960	48	91	145	70.00
2	93.240	46	95	114	80.13



6.9 Sesame (Til) Average performance of Local Varieties for difference characters : Late Sown

Local Variety No.	Grain Yield Kg/Ha	Days to 50% Flowering	Days of Maturity	Plant Height (cm)	No. Of Capsules
1		31	63	55	30.63
2		27	63	71	22.00
3C		21	61	66	25.13
4		31	61	63	26.63
5		30	60	92	24.50
6		30	60	65	24.75

7.10 Summary of Cultivation of Sesame (Til) Lead Farmers for Kharif 2009 for Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Mehai and Khirji Marwada	V.R.TI., Naniya	Vasthaben and Bharat Danji Boda	Ulwamben and Mangaldas Ranji Gor	Ritaben and Shirajji Shankarji Mota	Nitaben and Narendrabhai Shah	Rashidaben and Mamada Hajmiya	Kunvarben and Mohan Surji Koli	Vajuben and Dayabhai Makwana	Mariyamben Alimamad Juma Rayma	Kesharben and Harun Kasam Sama	Havabai and Abdul Rashid Ramjan	Uljai and Jusab Mishri Sama	Shantaba and Babubha Jadeja	Chetan Babu Makwana	Shrujan, Dayapar
Village of Evaluation Trial	Veng. Nakhirana	Naliya, Abbasa	Gundiya, Mandvi	Maska, Mandvi	Maska, Mandvi	Sindhodi, Abbasa	Vara, Bhuj	Nilpar, Rapar	Nagar, Rapar	Budharmora, Anjar	Tuga, Bhuj	Dhosa, Bhuj	Tuga, Bhuj	Hadi, Mundra	Mangaudi, Rapar	Ukher, Lakhpat
Soil type	Lomy	Sandy Loam	Clayey	Lomy	Lomy	Lomy	Undulating	Sandy Loam	Sandy Loam	Lomy	Lomy	Lomy	Lomy	Lomy	Lomy	Lomy
Plat	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled	Levelled
No. of ploughing before rain	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Details of Sowing done by	No	No	No	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor	Tractor	Tractor
Thinning	No	No	No	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
Weeds	Medium weed infestation	Medium weed infestation	Heavy weed infestation	Almost weed free	Heavy weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Almost weed free	Medium weed infestation
Sowing Time	June 4 th Week	July 1 st Week	July 1 st Week	July 1 st Week	July 1 st Week	July 1 st Week	July 2 nd Week	July 2 nd Week	July 2 nd Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week

7 Castor (Aeranda)

7.1 Local Variety and Evaluation Trial

Name of Castor (Aeranda) Seed Breeder Farmers Whose Seed Was Put Under Evaluation Trial of Kharif 2009

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 12 locations (6 timely sown and 6 late sown) 5 varieties including 1 check were planted. The results of 3 locations (2 timely sown and 1 late sown) were obtained.

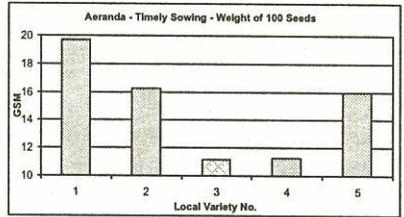
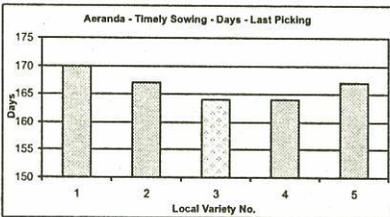
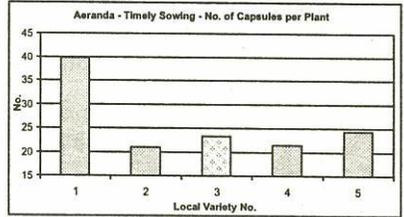
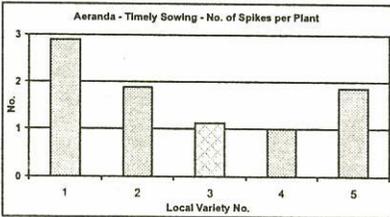
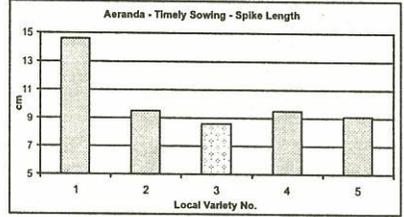
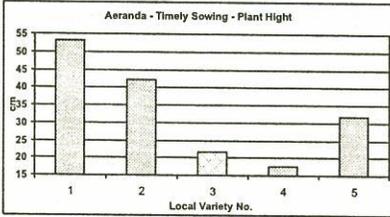
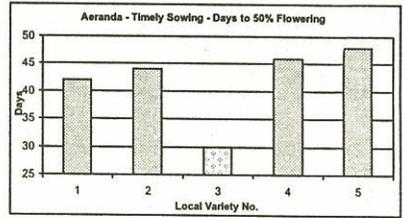
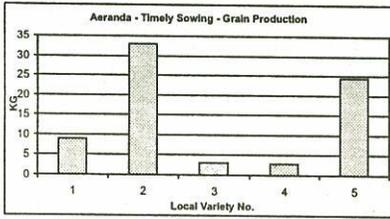
7.2 Grain Production

Castor (Aeranda) Grain Production ranking in superiority order

Timely Sown (June and Upto 3 rd Week of July Sown)		Late Sown (July 4th Week and 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.
	2		5
	5		4
	3		2
	4		3
	1		1

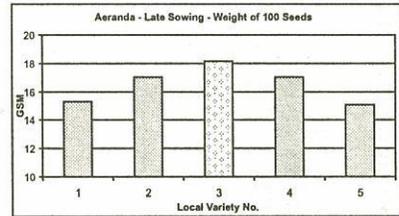
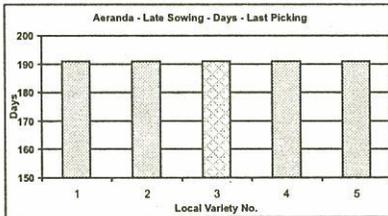
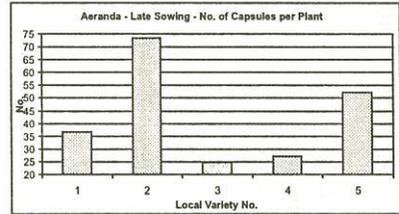
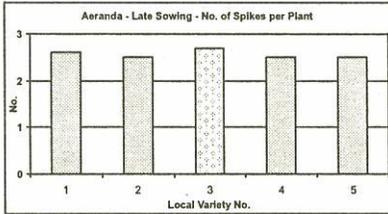
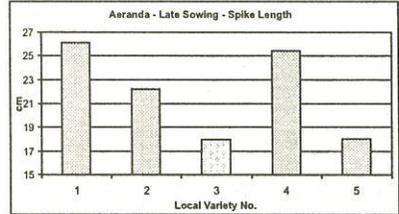
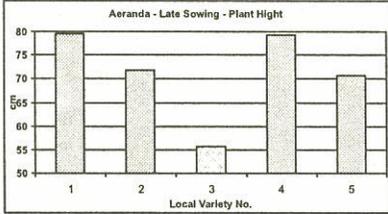
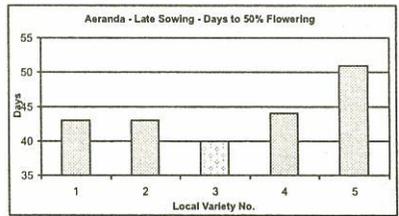
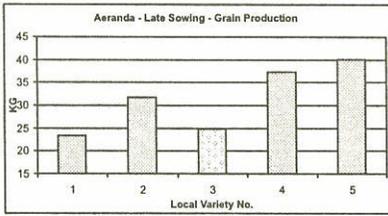
7.3 Drought Tolerance Ability

Local Variety No. 5 followed by Local Variety No. 4, 2 and 1 were noted better drought tolerant varieties over locations.



7.4 Castor (Aeranda) Average performance of Local Varieties for difference characters : Timely Sown

Local Variety No.	Grain Yield Kg/Ha	Days to 50% Flowering	Plant Height (cm)	Spike Length	Number of Spikes per plant	No. of Capsules per Plant	Days First Picking	Days Second Picking	Weight of 100 Seeds
2	33.018	44	42	9.49	1.9	21		167	16.29
5	24.483	48	32	9.13	1.9	24		167	15.97
1	8.913	42	53	14.60	2.9	40		170	19.74
3C	3.112	30	22	8.63	1.1	23		164	11.16
4	2.748	46	18	9.50	1.0	22		164	11.24



7.5 Castor (Aeranda) Average performance of Local Varieties for difference characters : Late Sown

Local Variety No.	Grain Yield Kg/Ha	Days to 50% Flowering	Plant Height (cm)	Spike Length	Number of Spikes per plant	No. of Capsules per Plant	Days First Picking	Days Second Picking	Weight of 100 Seeds
5	40.195	51	71	18.10	2.5	52	191	191	15.06
4	37.354	44	79	25.40	2.5	27	191	191	17.02
2	31.782	43	72	22.20	2.5	74	191	191	17.02
3C	24.764	40	56	18.00	2.7	25	191	191	18.16
1	23.341	43	79	26.10	2.6	37	191	191	15.30

7.6 Summary of Cultivation of Castor (Aeranda) Lead Farmers for Kharif 2009 for Evaluation Trial

Name of Lead Farmer undertook Evaluation Trial	Mambai and Khimji Marwada	Varshaben and Bharat Damji Boda	Ritaben and Dhirajal Shankarji Mota	Nitaben and Narendrabhai Shah	Rashidaben and Mamadsa Hajimiya	Kunvarben and Mohan Surji Koli	Kesharben and Harun Kasam Sama	Lilbai and Jusab Mishri Sama	Kunvarben and Arjanbhai Chavda	Shrujan, Dayapar
Village of Evaluation Trial	Vang, Nakhatrana	Gundiwali, Mandvi	Maska, Mandvi	Sindhodi, Abdasa	Vatra, Bhuj	Nilpar, Rapar	Tuga, Bhuj	Tuga, Bhuj	Chasra, Mundra	Ukher, Lakhpat
Soil type	Lomy	Clayey	Lomy	Lomy	Lomy	Sandy Loam	Lomy	Lomy	Lomy	Lomy
Plot	Leveled	Leveled	Leveled	Leveled	Undulating	Leveled	Leveled	Leveled	Leveled	Leveled
No. of ploughing before rain	1	1	1	1	1	1	1	1	1	1
Details of composting	No	No	No	No	No	No	No	No	No	No
Sowing done by	Tractor	Tractor	Tractor	Tractor	Tractor	Bullock	Tractor	Tractor	Tractor	Tractor
Thinning	No	No	No	No	No	No	No	No	No	No
Weeds	Medium weed infestation	Heavy weed infestation	Heavy weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation	Medium weed infestation
Sowing Time	June 4 th Week	July 1 st Week	July 1 st Week	July 1 st Week	July 2 nd Week	July 2 nd Week	July 4 th Week	July 4 th Week	July 4 th Week	July 4 th Week

8 Results of Demonstration Trials Kharif 2009

Demonstration Trials of Guwar, Mung, Bajra and Jowar taking promising and better varieties were conducted at various locations in Kharif 2009. All the Demonstration except of Bajra of which only fodder production was recorded were successful.

Bajra :

At Harinagar on the field of Raniben, its Demonstration Trial was conducted by taking local varieties no. 1, 3, 4, 5, 7, 8, 9, 10 and 16. No grain yield could be recorded however fodder yield was recorded for which entry no. 8 followed by 10 and 7 were found superior in order.

Jowar :

A set of six varieties entry no. 2, 3, 7, 8, 10 and one of farmer were planted in Demonstration Trials on the fields of Raniben at Harinagar village. Entry no. 8 gave highest fodder yield followed by entry no. 7, 2. The farmer's own variety was ranked 4th in fodder production. Grain yield could not be recorded as the crop could not reach to grain formation stage.

Moong :

By taking 6 varieties including one of farmer was planted at village Vang on the farmers field of Lakhiben Raja. The highest grain yield was recorded of farmer's own variety which was followed by entry no. 4 and 17. The grain yield of other varieties 6, 8 and 18 was low.

For fodder yield entry no. 17 followed by entry no. 18, 4 and 8 were noted superior which have more fodder yield then farmer's own variety. Entry no. 6 was the lowest fodder yielder.

Guwar :

Two Demonstration Trials were conducted as follows...

6 varieties (Entry no. 2, 4, 6, 7, 8 and one of farmer) were planted on the field of Lakhiben Raja at Vang village. Guwar variety no. 4 gave highest yield and was noted superior followed by entry no. 7 and 6. Farmer's own variety stood third in rank for grain production. Same variety for fodder yield were noted superior in order.

6 Guwar varieties Demonstration Trial was conducted at Umedpar village on the farmer's field of Pravin Jesabhai. Entry no. 7 was found to give highest grain yield followed by farmers variety and variety no. 4, 2 and 6. Entry no. 8 produced lowest grains.

With regard to fodder production variety no. 4 stood first by giving highest yield followed by entry no. 2 farmer variety entry no. 7 and 6. Entry no. 8 gave lowest fodder yield.

9 Planning of Programme for Kharif 2010

9.1 Planning of Kharif 2010 trials done with following decisions –

1. All the trials of all the crops conducted in Kharif 2009 should be conducted in Kharif 2010.
2. The number of trials in Bajra, Sesame and Castor may be reduced so that failure of trials may be avoided.
3. Bajra trials should be so planned and conducted that major bajra growing area of Kachchh district is covered.
4. Timely monitoring of research trials should be strictly conducted especially at sowing and harvesting time. So that more fruitful results could be achieved.
5. Demonstrations of different crops of suggested entries should be conducted on farmers field. Their number may be limited to number of interested farmers.
6. For “Pachchham” area of Kachchh Bajra genotypes of Bhuratio and Kavasias variable should be collected which may be used in future for Bajra cultivation in Pachchham.
7. Qualitative analysis of local collections of all the crops should be get done so that total work of variety could be ascertained.

9.2 Suggested entries for Demonstration Trials for Kharif 2010.

Bajara :

East Zone	West Zone	Central Zone
3	3	3
4	4	4
8	8	8
9	9	9
15	15	15
13	5	1
16	13	10
10	Farmer Variety	13
Farmer Variety		Farmer Variety

Crop	Entry No.
Jowar	1, 3, 4, 7, 8, 9, 10, farmer variety
Green Gram	4, 6, 13, 15, 16, 17, farmer variety
Moth	1, 2, 5, 6, farmer variety
Guwar	1, 4, 6, 7, farmer variety
Sesame	1, 4, 5, farmer variety
Castor	2, 4, 5 farmer variety

Partners Conducted Evaluation Trials and Demonstration Trials :

- Bhachau Taluka Setus, Samakhiyali
- Vivekanand Research and Training Institute, Mandvi
- Vivekanand Research and Training Institute, Naliya
- Youth For Unity and Voluntary Action, Rapar
- Ujjas Mahila Vikas Sangathan, Mundra
- Sahiyare Jo Sangathan, Nakhatrana
- Adesar Setu, Adesar
- Pachham Setus, Pachchham
- Bhuj Taluka Setus, Boladi & Kodki
- Shrujan, Bhujodi
- Kutch Fruit, Fodder and Forest Development Trust, Bhuj

Guidance :

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