

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

C. Cereal crops

Sr. No.	Variety/ Hybrid
8.	Pearl millet
8.1	Gujarat Hybrid Bajra 538 (GHB 538)
8.2	Gujarat Hybrid Bajra 757 (GHB 757)
8.3	Gujarat Hybrid Bajra 719 (GHB 719)
8.4	Gujarat Hybrid Bajra 744 (GHB 744)
8.5	Gujarat Hybrid Bajra 732 (GHB 732)
8.6	Gujarat Hybrid Bajra 905 (GHB 905)
8.7	Gujarat Hybrid Bajra 1129 (GHB 1129)
8.8	Gujarat Hybrid Bajra 1225 (GHB 1225)
8.9	Gujarat Hybrid Bajra 1231 (GHB 1231) (Sorath Shakti)
9.	Wheat
9.1	Gujarat Wheat 366 (GW 366)
9.2	Gujarat Junagadh Wheat 463 (GJW 463)

8. Pearl millet

8.1 Gujarat Hybrid Bajra 538 (GHB 538)

1	Name of crop	Pearl Millet		
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.		
3	Name of variety	Gujarat Hybrid Bajra 538 (GHB 538)		
4	Parentage with details of its pedigree	ICMA 95444A x J-2340 {(F-298 x F4FC-1498)-1-1-3} x J-2313		
5	Breeding method	Heterosis breeding		
6	Year of release	2004 in A1 zone of the country for <i>kharif</i> 2006-07 in Gujarat state for summer and <i>pre rabi</i>		
7	Gazette notification	S. O. 1177 (E) & Date: 25.08.2005		
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	Accessions	IC No.	
		1) GHB 538 (MH 1049)	415063	
		2) J-2340 (Male)	415064	
		3) ICMA 95444 (Female)	415065	
		4) ICMB 95444 (Maintainer)	415066	
9	Potential grain and fodder yield (kg/ha)	Grain 3325 and Fodder 6000 (<i>Kharif</i>) Grain 5636 and Fodder 11275 (Summer) Grain 4500 and Fodder 6700 (<i>Semi rabi</i>)		
10	Average grain and fodder yield (kg/ha)	Grain 2453 and Fodder 4171 (<i>Kharif</i>) Grain 4816 and Fodder 7843 (Summer) Grain 4111 and Fodder 5333 (<i>Semi rabi</i>)		
11	Recommended regions/areas of adoption	Summer and <i>pre-rabi</i> pearl millet growing areas of the North Gujarat and Saurashtra and A ₁ Zone of India (Rajasthan, Gujarat and Haryana) for <i>kharif</i> season.		
12	Characteristics/Distinguishing morphological in brief:			
	• Descriptions of the parents	GHB 538 (MH 1049)	ICMA 95444 (Female)	J-2340 (Male)
	• Plant height (cm)	155-165	80-90	130-140
	• Days to 50 % flowering	42-47	38-42	43-47
	• Head length	Medium	Small	Small
	• No. of effective tillers per plant	4-6	6-8	5.7
	• Basal pigmentation	Present	Absent	Present
	• Node pigmentation	Absent	Absent	Absent

• Node pubescence	Absent	Absent	Present
• Anther colour	Yellow	Violet	Yellow
• Head shape	Cylindrical	Conical	Cylindrical
• Head compactness	Compact	Compact	Compact
• Bristles	Absent	Absent	Absent
• Grain size	9.6	9.0	8.5
• Grain colour	Light brownish gray	Brownish gray	Brownish gray
• Grain shape	Globular	Globular	Obovate
• Days to maturity	65-70	62-67	67-72
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: On set of monsoon for <i>kharif</i>, 15th February to 15th March for summer and 1st fort week of October for semi <i>rabi</i> cultivation. • Sowing distance: 60 x 10-15 cm. • Seed rate: 3.75 kg/ha. • Fertilizer: N:P:K 80 : 40 : 00 kg/ha for <i>kharif</i> and 120 : 60 : 00 kg/ha for <i>summer</i> and semi <i>rabi</i>. 	
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Highly tolerant to unfavourable temperature fluctuation at the time of anthesis and seed setting having synchronous tillering habit.	
15	Quality / Nutritional / Other features	Grain colour is attractive having good consumer preference and good quality of <i>rotala</i> .	
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	Highly resistant to downy mildew and tolerant to stem borer and shoot fly. It also relatively tolerant to salt and drought.	
17	Duration/ Maturity group	71-76 days in summer & <i>pre-rabi</i> season and 65-70 days in <i>kharif</i> season/Early maturity group.	
18	Salient Features	Matures within 65-70 days, medium tall, good tillering, drought resistant, compact cylindrical ear heads, globular light brownish gray grains.	
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)	



8.2 Gujarat Hybrid Bajra757 (GHB 757)

1	Name of crop	Pearl Millet	
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.	
3	Name of variety	Gujarat Hybrid Bajra 757 (GHB 757)	
4	Parentage with details of its pedigree	ICMA 92777 x J-2467 (J-2340 x PEMPET-9)-12-7-3-1-B	
5	Breeding method	Heterosis breeding	
6	Year of release	2006-07	
7	Gazette notification	S. O. 72 (E) & Date: 10.01.2008	
8	Acknowledge particulars about the submission of germplasm samples with	Accessions 1) GHB 757 (MH 1328) 2) J-2467 (Male)	IC No. 553315 553318

	NBPGR	3) ICMA 92777 (Female) 4) ICMB 92777 (Maintainer)	553316 553317
9	Potential grain and fodder yield (kg/ha)	Grain 2794 and Fodder 5200	
10	Average grain and fodder yield (kg/ha)	Grain 2365 and Fodder 4700	
11	Recommended regions/areas of adoption	All the scanty and low rainfall <i>kharif</i> pearl millet growing areas of zone A ₁ of India (Rajasthan, Gujarat and Haryana).	
12	Characteristics/Distinguishing morphological in brief:		
	Descriptions of the parents	GHB 757 (MH 1328)	ICMA 92777 (Female) J-2467 (Male)
	• Plant height (cm)	165-170	130-160 100-110
	• Days to 50 % flowering	45-48	45-48 45-48
	• Head length	Medium	Medium Small
	• Head shape	Cylindrical	Cylindrical Cylindrical
	• Head compactness	Compact	Compact Compact
	• No. of effective tillers/plant	3-4	4-5 5-4
	• Node pigmentation	Absent	Absent Absent
	• Node pubescence	Absent	Absent Absent
	• Anther colour	Purple	Purple Purple
	• Bristles	Absent	Absent Absent
	• Grain size	Bold	Bold Medium
	• Grain colour	Grey-Brown	Grey-Brown Grey-Brown
	• Grain shape	Globular	Globular Globular
	• Days to maturity	70-74	70-75 70-75
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: On set of monsoon • Sowing distance: 60 x 10-15 cm. • Seed rate: 3.75 kg/ha. • Fertilizer: N:P:K 80 :40 : 00 kg/ha. 	
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Highly tolerant to moisture stress condition. Resistance to lodging and responsive up to higher dose of N and has displayed the high yield at low and optimum level of nitrogen.	
15	Quality / Nutritional / Other features	Grain size is medium. The grain colour is attractive having good consumer preference and good quality of <i>rotala</i> .	
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	Highly resistant to downy mildew and smut diseases.	
17	Duration/ Maturity group	70-74 days /Early maturity group.	
18	Salient Features	Mature within 70-74 days, medium tall, good tillering, drought resistant, compact, medium long ear heads, and medium grain size with attractive grain colour.	
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)	



8.3 Gujarat Hybrid Bajra 719 (GHB 719)

1	Name of crop	Pearl Millet		
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.		
3	Name of variety	Gujarat Hybrid Bajra 719 (GHB 719)		
4	Parentage with details of its pedigree	ICMA 95222 x J-2454 (RIB-3135 x RIB-335/74)-2-3-12-B		
5	Breeding method	Heterosis breeding (Single cross)		
6	Year of release	2007-08		
7	Gazette notification	S. O. 122 (E) & Date: 06.02.2007		
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	Accessions	IC No.	
		1) GHB 719 (MH 1236)	545813	
		2) J-2454 (Male)	545812	
		3) ICMA 95222 (Female)	545814	
		4) ICMB 95222 (Maintainer)	545815	
9	Potential grain and fodder yield (kg/ha)	Grain 2539 and Fodder 4900		
10	Average grain and fodder yield (kg/ha)	Grain 2334 and Fodder 4800		
11	Recommended regions/areas of adoption	<i>Kharif</i> pearl millet growing areas of Gujarat as an early maturity hybrid except middle Gujarat Agro-climatic Zone and <i>kharif</i> rainfed conditions in zone A1 of India (Rajasthan, Gujarat and Haryana).		
12	Characteristics/Distinguishing morphological in brief:			
	Descriptions of the parents	GHB 719 (MH 1236)	ICMA 95222 (Female)	J-2467 (Male)
	• Plant height (cm)	155-165	145-150	100-120
	• Days to 50 % flowering	40-45	50-55	45-50
	• Head length	Medium	Medium	Small
	• Effective tillers/plant	4-6	4-5	5-7
	• Node pigmentation	Absent	Absent	Absent
	• Node pubescence	Absent	Absent	Absent
	• Anther colour	Yellow	Violet	Cream-Yellow
	• Bristles	Present	Absent	Present
	• Head shape	Cylindrical	Cylindrical	Cylindrical
	• Head compactness	Compact	Semi compact	Semi compact
	• Grain size	Medium	Bold	Medium
	• Grain colour	Grey	Brownish grey	Yellow
	• Grain shape	Globular	Globular	Obovate
	• Days to maturity	70-74	75-80	72-75
	• Reaction to moisture stress	Tolerant	Tolerant	Highly tolerant
	• Downy mildew resistant	Resistant	Resistant	Resistant
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: On set of monsoon • Sowing distance: 60 x 10-15 cm. • Seed rate: 3.75 kg/ha. 		

		• Fertilizer: N:P:K 80 : 40 : 00 kg/ha.
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Highly tolerant to drought and tolerant to salt. Resistance to lodging and responsive up to higher dose of N and has displayed the high yield at low and optimum level of nitrogen.
15	Quality / Nutritional / Other features	Grain size is medium. The grain colour is attractive having good consumer preference and good quality of <i>rotala</i> .
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	Highly resistant to downy mildew and tolerant to stem borer & shoot fly.
17	Duration/ Maturity group	70-74 days /Early maturity group.
18	Salient Features	Matures within 70-74 days, medium tall, good tillering, drought resistant, compact cylindrical with bristle ear heads, globular light brownish gray grains.
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)



8.4 Gujarat Hybrid Bajra 744 (GHB 744)

1	Name of crop	Pearl Millet		
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.		
3	Name of variety	Gujarat Hybrid Bajra 744 (GHB 744)		
4	Parentage with details of its pedigree	ICMA 98444 x J-2340 {(F-298 x F4FC-1498)-1-1-3} x J-2313		
5	Breeding method	Heterosis breeding (Single cross)		
6	Year of release	2007-08		
7	Gazette notification	S. O. 72 (E) & Date: 10.01.2008		
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	Accessions	IC No.	
		1) GHB 744 (MH 1244)	553309	
		2) J-2340 (Male)	415064	
		3) ICMA 98444 (Female)	553310	
		4) ICMB 98444 (Maintainer)	553311	
9	Potential grain and fodder yield (kg/ha)	Grain-3800 and Fodder-8300 (for <i>kharif</i>)		
10	Average grain and fodder yield (kg/ha)	Grain-2800 and Fodder-6600 (for <i>kharif</i>)		
11	Recommended regions/areas of adoption	All <i>Kharif</i> rainfed pearl millet growing areas of zone A of India (Rajasthan, Gujarat, Haryana, M. P., Punjab, U.P. and Delhi).		
12	Characteristics/Distinguishing morphological in brief:			
	Descriptions of the parents	GHB 744 (MH 1244)	ICMA 98444 (Female)	J-2340 (Male)
•	Plant height (cm)	180-190	90-100	130-140
•	Days to 50 % flowering	49-53	44-47	47-51

•	Head length	Medium	Medium	Small
•	No. of effective tillers/plant	3-4	4-6	5-7
•	Node pigmentation	Absent	Absent	Absent
•	Node pubescence	Absent	Absent	Present
•	Anther colour	Yellow	Cream yellow	Purple
•	Head shape	Cylindrical	Conical	Cylindrical
•	Head compactness	Compact	Semi compact	Compact
•	Bristles	Absent	Absent	Absent
•	Grain size	Bold	Medium	Medium
•	Grain colour	Grey-Brown	Grey-Brown	Grey-Brown
•	Days to maturity	76-80	70-74	74-77
•	Grain shape	Globular	Globular	Obovate
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: On set of monsoon • Sowing distance: 60 x 10-15 cm. • Seed rate: 3.75 kg/ha. • Fertilizer: N:P:K 80 : 40 : 00 kg/ha. 		
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Highly tolerant to drought and tolerant to salt. Resistance to lodging and responsive up to higher dose of N and has displayed the high yield at low and optimum level of nitrogen.		
15	Quality / Nutritional / Other features	Grain size is medium. The grain colour is attractive gray brown having good consumer preference and good quality of <i>rotala</i> .		
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	Highly resistant to downy mildew, smut and rust.		
17	Duration/ Maturity group	76-80 days /Medium maturity group.		
18	Salient Features	Mature within 76-80 days, tall, good tillering, medium thick stem with basal pigmentation, compact and medium long ear heads Bold globular grains with attractive colour.		
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)		



8.5 Gujarat Hybrid Bajra 732 (GHB 732)

1	Name of crop	Pearl Millet	
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.	
3	Name of variety	Gujarat Hybrid Bajra 732 (GHB 732)	
4	Parentage with details of its pedigree	ICMA 96222 x J-2340 {(F-298 x F ₄ FC-1498)-1-1-3} x J-2313	
5	Breeding method	Heterosis breeding (Single cross hybrid)	
6	Year of release	2007-08 in A Zone of the country for <i>kharif</i> 2010-11 in Gujarat state for summer	
7	Gazette notification	S. O. 72 (E) & Date: 10.01.2008	
8	Acknowledge particulars about the submission of germplasm	Accessions 1) GHB 732 (MH 1307)	IC No. 553312

	samples with NBPGR	2) J-2340 (Male) 415064 3) ICMA 96222 (Female) 553313 4) ICMB 96222 (Maintainer) 553314		
9	Potential grain and fodder yield (kg/ha)	Grain 4300 and Fodder 8300 (<i>Kharif</i> cultivation) Grain 5982 and Fodder 8958 (Summer cultivation)		
10	Average grain and fodder yield (kg/ha)	Grain 2800 and Fodder 6600 (<i>Kharif</i> cultivation) Grain 5037 and Fodder 8150 (Summer cultivation)		
11	Recommended regions/areas of adoption	Summer pearl millet growing areas of whole Gujarat with assured irrigation facility. The major <i>kharif</i> pearl millet growing region of the country zone A (Rajasthan, Gujarat, Haryana, M. P. Punjab, U.P. and Delhi) fall under arid and semi-arid tropics.		
12	Characteristics/Distinguishing morphological in brief:			
	Descriptions of the parents	GHB 732 (MH 1307)	ICMA 96222 (Female)	J-2340 (Male)
	• Plant height (cm)	190-195	105-115	130-140
	• Days to 50 % flowering	52-55	46-49	47-51
	• Head length	Long	Long	Small
	• Head shape	Cylindrical	Lanceolate	Cylindrical
	• Head compactness	Compact	Compact	Compact
	• No. of effective tillers/plant	3-4	3-4	5-7
	• Node pigmentation	Absent	Absent	Absent
	• Node pubescence	Present	Absent	Present
	• Anther colour	Yellow	Cream yellow	Violet
	• Bristles	Absent	Absent	Absent
	• Grain size	Bold	Medium	Medium
	• Grain colour	Grey-Brown	Grey-Brown	Yellow-Brown
	• Grain shape	Globular	Globular	Obovate
	• Days to maturity	80-85	72-75	74-77
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: On set of monsoon for <i>kharif</i> and 15th February to 15th March for summer • Sowing distance: 60 x 10-15 cm. • Seed rate: 3.75 kg/ha. • Fertilizer: N:P:K 80 : 40 : 00 kg/ha for <i>kharif</i> and 120 : 60 : 00 kg/ha. for summer 		
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Medium tolerant to water stress and tolerant to salt. Resistance to lodging and good quality of stover along with preferred seed colour. Responsive up to higher dose of N and has displayed the high yield at optimum level of nitrogen.		
15	Quality / Nutritional / Other features	Grain size is bold. The grain colour is attractive grey brown is having good consumer preference and good quality of <i>rotala</i> .		
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	Highly resistant to downy mildew and smut.		
17	Duration/ Maturity group	80-85 days /Medium late maturity group.		
18	Salient Features	Mature within 80-85 days, medium tall, good tillering, broad leaves long thick compact ear heads, bold globular grains with attractive colour.		
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)		



8.6 Gujarat Hybrid Bajra 905 (GHB 905)

1	Name of crop	Pearl Millet		
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.		
3	Name of variety	Gujarat Hybrid Bajra 905 (GHB 905)		
4	Parentage with details of its pedigree	ICMA 04999 x J-2454 (CEBC-Gen-S1-40-22-1 x B-line (bulk)-25-B-B)		
5	Breeding method	Heterosis breeding (Single cross hybrid)		
6	Year of release	2011-12		
7	Gazette notification	S. O. 2817 (E) & Date: 19.09.2013		
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	Accessions	IC No.	
		1) GHB 905 (MH 1655)	594101	
		2) J-2454 (Male)	545812	
		3) ICMA 04999 (Female)	594102	
		4) ICMB 04999 (Maintainer)	594103	
9	Potential grain and fodder yield (kg/ha)	Grain 2967 and Fodder 6900		
10	Average grain and fodder yield (kg/ha)	Grain 2736 and Fodder 6500		
11	Recommended regions/areas of adoption	All <i>kharif</i> rainfed pearl millet growing areas of Zone A (Rajasthan, Gujarat, Haryana, M. P., Punjab, U.P. and Delhi) including A1 zone of pearl millet cultivation.		
12	Characteristics/Distinguishing morphological in brief:			
	Descriptions of the parents	GHB 905 (MH 1655)	ICMA 04999 (Female)	J-2454 (Male)
	• Plant height (cm)	184	75	100-120
	• Days to 50 % flowering	48-49	49	45-50
	• Head length	Medium	Medium	Small
	• Head shape	Cylindrical	Conical	Cylindrical
	• No. of productive tillers/plant	2.8	4-5	5-7
	• Panicle compactness	Compact	Compact	Semi-compact
	• Bristles	Present	Absent	Present heavily
	• Anther colour	Yellow	Yellow	Cream yellow
	• Node pigmentation	Green	Green	Green
	• Node pubescence	Absent	Absent	Absent
	• Anthocyanin pigmentation at first leaf sheath	Absent	Absent	Absent
	• Grain colour	Grey-brown	Deep grey	Yellow
	• Grain shape	Globular	Globular	Obovate
	• Grain weight	Medium	Medium	Medium
	• Days to maturity	79	80	72-75
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: On set of monsoon • Sowing distance: 60 x 10-15 cm. • Seed rate: 3.75 kg/ha. • Fertilizer: N:P:K 80 : 40 : 00 kg/ha. 		

14	Specific attributes/Describe at least two identifiable characteristics of the variety	Since the male is about 4-5 days earlier than female so there is no problem of synchronization. Resistance to lodging. Responsive up to higher dose of N ₂ and has displayed the high yield at optimum level of nitrogen.
15	Quality / Nutritional / Other features	Grain size is medium. The grain colour is attractive grey brown having good consumer preference and longer shelf life of flour with good <i>rotala</i> making quality.
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	Highly resistant to downy mildew, smut, ergot, blast and rust disease.
17	Duration/ Maturity group	79 days /Medium maturity group.
18	Salient Features	Matures within 75-80 days, medium tall, good tillering, drought resistant, compact, medium long with bristled ear head, medium grain size with attractive colour.
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)



8.7 Gujarat Hybrid Bajra 1129 (GHB 1129)

1	Name of crop	Pearl Millet		
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.		
3	Name of variety	Gujarat Hybrid Bajra 1129 (GHB 1129)		
4	Parentage with details of its pedigree	ICMA ₁ 99222 x J-2565 {(J-2340 x J-2480)-8-5-6-2-2-1-B-B}		
5	Breeding method	Heterosis breeding (Single cross hybrid)		
6	Year of release	2018-19		
7	Gazette notification	Awaited		
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	Accessions	IC No.	
		1) GHB 1129 (Hybrid)	630764	
		2) ICMA ₁ 99222 (Female-CMS)	630765	
		3) ICMB 99222 (Maintainer)	630766	
		4) J-2565 (Male-restorer)	630767	
10	Average grain and fodder yield (kg/ha)	Grain: 2957 (<i>khariif</i>) and 5303 (Summer) Fodder: 6210 (<i>khariif</i>) and 9179 (Summer)		
11	Recommended regions/areas of adoption	<i>Khariif</i> (rainfed) and summer pearl millet growing area of Guajrat state		
12	Characteristics/Distinguishing morphological in brief:			
	Descriptions of the parents	GHB 1129 (MH 2118)	ICMA ₁ 99222 (Female)	J-2565 (Male)
	• Plant height (cm): <i>Khariif</i> Summer	186 (Medium tall) 178 (Medium tall)	Short	Short
	• Plant growth habit	Erect	Erect	Erect
	• Days to 50 % flowering	45-51 (<i>khariif</i>) 46-54 (Summer)	-	-
	• Spike length	Medium	Small	Small

• Spike shape	Cylindrical	Conical	Cylindrical
• Spike density	Compact	Semi Compact	Compact
• No. of effective tillers per plant	2.5 (<i>Kharif</i>) 3.6 (Summer)	Low	Low
• Bristles	Absent	Absent	Absent
• Anther colour	Yellow	Yellow	Yellow
• Node pigmentation	Green	Green	Green
• Node pubescence	Present in upper two nodes	Absent	Absent
• Anthocyanin pigmentation at first leaf sheath	Absent	Absent	Absent
• Grain colour	Grey brown	Deep grey	Grey
• Grain shape	Globular	Globular	Obovate
• 1000 Grain weight (g)	8.8 (Medium)	Medium	Medium
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: <i>Kharif</i>: Onset of monsoon to 15th July Summer: 15th February to 15th March • Sowing distance: 60 x 10-15 cm. • Seed rate: 4.00 kg/ha. • Fertilizer: N:P:K 80:40:00 kg/ha for <i>kharif</i> N:P:K 120:60:00 kg/ha for summer 	
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Since the male line is about 5 days early than female, there is no problem of synchronization. Resistant to lodging and having good quality of stover along with consumer preferred seed colour.	
15	Quality / Nutritional / Other features	The grain size is medium and the grain colour is attractive having good consumer preference and good quality of chapatti. The cookies texture and quality is acceptable. This hybrid has high Fe and Zn content	
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	High level of resistant to downy mildew. Resistant to smut, ergot stem borer and shoot fly	
17	Duration/ Maturity group	<i>Kharif</i> : 80 (75-82) days (Medium duration) Summer: 83 (79-85) days	
18	Salient Features	This hybrid is biofortified having higher micronutrient minerals Fe (more than 70 ppm) and Zn (more than 40 ppm), grain size is medium and grey in colour.	
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)	



8.8 Gujarat Hybrid Bajra 1225 (GHB 1225)

1	Name of crop	Pearl Millet
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.

3	Name of variety	Gujarat Hybrid Bajra 1225 (GHB 1225)		
4	Parentage with details of its pedigree	ICMA ₁ 98222 x J-2591 {[(MC 94 S1-34-1-B x HHVBC)-16-2-1] x (IP 19626-4-2-3)]-b-28-3-4-3-1} x {RCB 2 S1-19-2-5-1-1-2-3-3-B}-B-5-P1-5B}		
5	Breeding method	Heterosis breeding (Single cross hybrid)		
6	Year of release	2018-19		
7	Gazette notification	Awaited		
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	Accessions 1) GHB 1225 (Hybrid) 2) ICMA ₁ 98222 (Female-CMS) 3) ICMB 98222 (Maintainer) 4) J-2565 (Male-restorer)	IC No. 630760 630761 630762 630763	
9	Average grain and fodder yield (kg/ha)	Grain: 3023 kg/ha Fodder: 7306 kg/ha		
10	Recommended regions/areas of adoption	<i>Kharif</i> pearl millet growing areas of Gujarat as a late group dual purpose hybrid.		
11	Characteristics/Distinguishing morphological in brief:			
	Descriptions of the parents	GHB 1129 (MH 2284)	ICMA ₁ 98222 (Female)	J-2591 (Male)
	• Plant height (cm)	211 (Medium tall)	150.1 (Short)	146.3 (Short)
	• Plant growth habit	Erect	Erect	Erect
	• Days to 50 % flowering	52 (51-53)	-	-
	• Spike length (cm)	Medium	Small	(Medium)
	• Spike shape	Cylindrical	Conical	Cylindrical
	• Spike density	Compact	Compact	Compact
	• No. of effective tillers per plant	2.5	2.5 (Low)	2.4 (Low)
	• No. of nodes on main stream	Low	8.8 (Low)	9.4 (Low)
	• Bristles	Absent	Absent	Absent
	• Anther colour	Cream yellow	Yellow	Yellow
	• Node pigmentation	Green	Green	Green
	• Node pubescence	Absent	Absent	Absent
	• Anthocyanin pigmentation at first leaf sheath	Present	Absent	Present
	• Grain colour	Deep grey	Yellow brown	Grey
	• Grain shape	Hexagonal	Obovate	Obovate
	• 1000 Grain weight (g)	9.00 (Medium)	7.70 (Medium)	7.60 (Medium)
12	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: Onset of monsoon to 15th July • Sowing distance: 60 x 10-15 cm. • Seed rate: 4.00 kg/ha. • Fertilizer: N:P:K 80:40:00 kg/ha 		
13	Specific attributes/Describe at least two identifiable characteristics of the variety	Since the male line is about 6 to 7 days early than female, there is no problem of synchronization. Resistant to lodging and having good quality of stover along with consumer preferred seed colour along with appealing panicle traits		
14	Quality / Nutritional / Other features	This hybrid has more Fe and Zn. The grain size is medium and the grain colour is attractive having good consumer preference and good quality of chapatti.		
15	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	High level of resistant to downy mildew. Resistant to blast, smut, ergot and rust diseases, stem borer, shoot fly and <i>helicoverpa</i> .		

16	Duration/ Maturity group	80 days (81-83) days (Late group)
17	Salient Features	This hybrid is biofortified having higher micronutrient minerals Fe (more than 70 ppm) and Zn (more than 40 ppm), grain size is medium and grey in colour.
18	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)



8.9 Gujarat Hybrid Bajra 1231 (GHB 1231) (Sorath Shakti)

1	Name of crop	Pearl Millet		
2	Botanical name	<i>Pennisetum glaucum</i> (L.) P. Br.		
3	Name of variety	Gujarat Hybrid Bajra 1231 (GHB 1231) (Sorath Shakti)		
4	Parentage with details of its pedigree	ICMA ₁ 11222 x J-2597 (MC 94 C2-S1-3-2-2-2-1-3-B-B x SDMV 90031 S1-3-3-2-2-2-2-2)-B-1-3-3		
5	Breeding method	Heterosis Breeding (Single cross)		
6	Year of release	2019-20		
7	Gazette notification	Awaited		
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	Accessions	IC No.	
		GHB 1231(Hybrid)	IC 633968	
		ICMA ₁ 11222(Female)	IC 633969	
		ICMB 11222(Maintainer)	IC 633970	
		J-2597(Male)	IC 633971	
9	Potential grain and fodder yield (kg/ha)	Grain: 3025 and Fodder: 8050		
10	Average grain and fodder yield (kg/ha)	Grain: 2760 and Fodder: 7471		
11	Recommended regions/areas of adoption	Kharif pearl millet growing areas of Gujarat state as a late group dual purpose hybrid.		
12	Characteristics/Distinguishing morphological in brief:			
	Descriptions of the parents	GHB 1129 (MH 2365)	ICMA ₁ 11222 (Female)	J-2597 (Male)
•	Plant height (cm)	212 (Tall)	Very Short	Short
•	Plant growth habit	Erect	Erect	Erect
•	Days to 50 % flowering	53 (45-67)	-	-
•	Spike length	Medium	Medium	Medium
•	Spike shape	Conical	Conical	Cylindrical
•	Spike density	Compact	Compact	Compact
•	No. of effective tillers per plant	2.5	Low	Low
•	Bristles	Absent	Absent	Absent

•	Anther colour	Purple	Purple	Purple
•	Node pigmentation	Green	Green	Green
•	Node pubescence	Absent	Absent	Absent
•	Anthocyanin pigmentation at first leaf sheath	Absent	Absent	Present
•	Grain colour	Yellow Brown	Deep grey	Grey Brown
•	Grain shape	Globular	Obovate	Globular
•	1000 Grain weight (g)	8.9 (Medium)	Small	Bold
•	Days to maturity	82 (72-96)	-	-
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: <i>Kharif</i>: Onset of monsoon to 15th July • Sowing distance: 60 x 10-15 cm • Seed rate: 4.00 kg/ha. • Fertilizer: N:P:K 80:40:00 kg/ha 		
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Well synchronized and there is no problem of hybrid seed production. Resistant to lodging and having good quality of stover along with consumer preferred seed colour and panicle traits		
15	Quality / Nutritional / Other features	This hybrid is biofortified having higher micronutrient minerals Fe (>70 ppm) and Zn (>40 ppm), grain size is medium and colour is attractive having good consumer preference and good quality of chapatti.		
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	High level of resistant to downy mildew. Resistant to blast, rust, ergot and smut. Reaction against stem borer, shoot fly and <i>helicoverpa</i> is less.		
17	Duration/ Maturity group	<i>Kharif</i> : 82 (72-96) days (Late group)		
18	Salient Features	This hybrid is biofortified having higher micronutrient minerals Fe (more than 70 ppm) and Zn (more than 40 ppm), grain size is medium and grey in colour.		
19	Originating source/ Institute	Main Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar-362 006 (Gujarat)		



9. Wheat

9.1 Gujarat Wheat 366 (GW 366)

1	Name of crop	Wheat
2	Botanical name	<i>Triticum aestivum</i> L. em. Thell
3	Name of variety	Gujarat Wheat 366 (GW 366)
4	Parentage with details of its pedigree	DL 802-3 x GW 232 (HJ 94-48-1-2-1-1)
5	Breeding method	Hybridization followed by pedigree method of selection
6	Year of release	2006-07
7	Gazette notification	S. O. 122 (E) & Date: 06.02.2007

8	Acknowledge particulars about the submission of germplasm samples with NBPGR	GW 366 IC: 547561
9	Potential grain yield (q/ha)	75.87
10	Average grain yield (q/ha)	49.32
11	Recommended regions/areas of adoption	Recommended for timely sown, irrigated & high fertility condition in <i>rabi</i> season for entire Gujarat and Central Zone (Madhya Pradesh, Chhattisgarh and Part of Rajasthan and Uttar Pradesh) at National level.
12	Characteristics/Distinguishing morphological in brief:	
	• Plant height (cm)	82
	• Growth habit	Erect
	• Days to heading	56
	• Coleoptile	Present
	• Leaf sheath	Light
	• Auricle (at flag leaf stage)	Present
	• Foliage colour (boot stage)	Light green
	• Leaf width (boot stage)	Intermediate
	• Average days to heading	56
	• Waxiness-flag leaf	Present
	• Waxiness-leaf sheath	Present
	• Waxiness-ear	Present
	• Waxiness-peduncle	Present
	• Ear colour at maturity	White
	• Ear shape	Clavate (Top dense)
	• Ear density	Intermediate
	• Awns length	Normal
	• Awns colour (at maturity)	White
	• Glume shoulder	Oblique
	• Glume beak	Medium
	• Glume pubescence	Absent
	• Grain size	Uniform bold
	• Grain colour	Amber
	• Grain shape	Oval
	• Grain texture	Hard
	• Grain cheeks	Rounded
	• Grain crease width	Narrow
	• Grain brush-end hair	Non prominent
	• Av. 1000-grain weight (g)	50.5
13	Agronomical Practices	<ul style="list-style-type: none"> • Time of sowing: Normal sown condition (15th to 25th November) • Sowing distance: 22.5 cm. • Seed rate: 120 kg/ha. • Fertilizer: N:P:K 120 : 60 : 60 kg/ha.
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Resistance to lodging and non-shattering.
15	Quality / Nutritional / Other features	The values of hectoliter weight (80.42 kg.), grain appearance score (7.13), sedimentation score (35.88) and protein content (12.72 %).
16	Diseases and pests resistance	High degree of resistant to leaf and stem rust under

	(give details of any resistance to pest or diseases including races)	artificial condition.
17	Duration/ Maturity group	101-107(105) days/Medium maturity group.
18	Originating source/ Institute	Wheat Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat)



9.2 Gujarat Junagadh Wheat 463 (GJW 463)

1	Name of crop	Wheat
2	Botanical name	<i>Triticum aestivum</i> L. em. Thell
3	Name of variety	Gujarat Junagadh Wheat 463 (GJW 463)
4	Parentage with details of its pedigree	GW 496 x KLP 010 (HJ 2004-38-1-2-1-1)
5	Breeding method	Hybridization followed by pedigree method of selection.
6	Year of release	2015-16
7	Gazette notification	S. O. 2805 (E) & Date: 25.08.2017
8	Acknowledge particulars about the submission of germplasm samples with NBPGR	GJW 463 (J2010-09) IC: 618476
9	Potential grain yield (q/ha)	Early sowing: 78.32; Timely sowing: 67.46
10	Average grain yield (q/ha)	Early sowing: 55.75; Timely sowing: 50.91
11	Recommended regions/areas of adoption	Early sown irrigated areas of Saurashtra region and timely sown irrigated areas of Gujarat state for <i>rabi</i> season.
12	Characteristics/Distinguishing morphological in brief:	
	• Coleoptile pigmentation	Absent
	• Plant growth habit	Semi erect
	• Foliage colour (Boot stage)	Pale green
	• Flag leaf : Anthocyanin colouration of auricle	Absent
	• Flag leaf : hairs on auricle pubescence	Present (Medium)
	• Flag leaf attitude	Drooping
	• Ear : Time of emergence (First spikelet visible on 50% of ears)	62-73 (67)
	• Flag leaf : Waxiness of sheath	Present (Medium)
	• Flag leaf : Waxiness of blade	Present (Medium)
	• Ear: Waxiness	Present (Medium)
	• Culm : Waxiness of neck	Present (Medium)

	(Peduncle)	
•	Flag leaf : length	Medium
•	Flag leaf : breadth	Medium
•	Plant : Length (Excluding awns/scurs)	Medium
•	Ear colour	White
•	Ear : Shape in profile	Parallel
•	Ear : density	Intermediate
•	Ear : Length (Excluding awns/scurs)	Medium
•	Awns/scurs : Presence	Awns present
•	Awns : Length	Medium
•	Awns : Colour	White
•	Awns : Attitude	Medium
•	Outer glume : Pubescence	Glabrous
•	Outer glume : Shoulder width (Spikelets in mid-third of ear)	Narrow
•	Outer glume : Shoulder shape (Spikelets in mid-third of ear)	Elevated
•	Glume : Beak length (Spikelets in mid-third of ear)	Medium
•	Glume : Beak Shape (Spikelets in mid-third of ear)	Straight
•	Peduncle : Length	Medium
•	Peduncle attitude	Straight
•	Grain : Colour	Amber
•	Grain : Shape	Oblong
•	Grain : Germ width	Narrow
•	Brush hair : Length	Short
•	Seed : Size (Wt. of 1000 grains)	42-46 g (Large)
•	No. of spikelets/spike	17-21
•	Seeds/spike	45-55
•	Grain : Hardness	Hard
13	Agronomical Practices	<ul style="list-style-type: none"> • Early sowing: 15th October to 15th November • Timely of sowing: 15th to 25th November • Sowing distance: 22.5 cm. • Seed rate: 100 to 120 kg/ha. • Fertilizer: N:P:K 120 : 60 : 60 kg/ha.
14	Specific attributes/Describe at least two identifiable characteristics of the variety	Profuse tillering and grain is having good chapatti making quality.
15	Quality / Nutritional / Other features	Good grain appearance with hectoliter weight (79.1 kg/hl.), sedimentation value (43.4 ml.) and protein content (12.7 %).
16	Diseases and pests resistance (give details of any resistance to pest or diseases including races)	Resistant to tolerant against stem and leaf rust disease. (Races: Leaf rust : 77-5 and 104-2 Stem rust: 40A and 117-6).
17	Duration/ Maturity group	103-124(112) days/Medium maturity group.
18	Originating source/ Institute	Wheat Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat)

