Evaluation of Stress Tolerant Orphan Legumes for use in Dryland Farming Systems across sub- Saharan Africa and India –Promoting India-Africa Framework for Strategic Cooperation

Stress Tolerant Orphan Legumes (STOL) Annual Meeting

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Kirkhouse Trust
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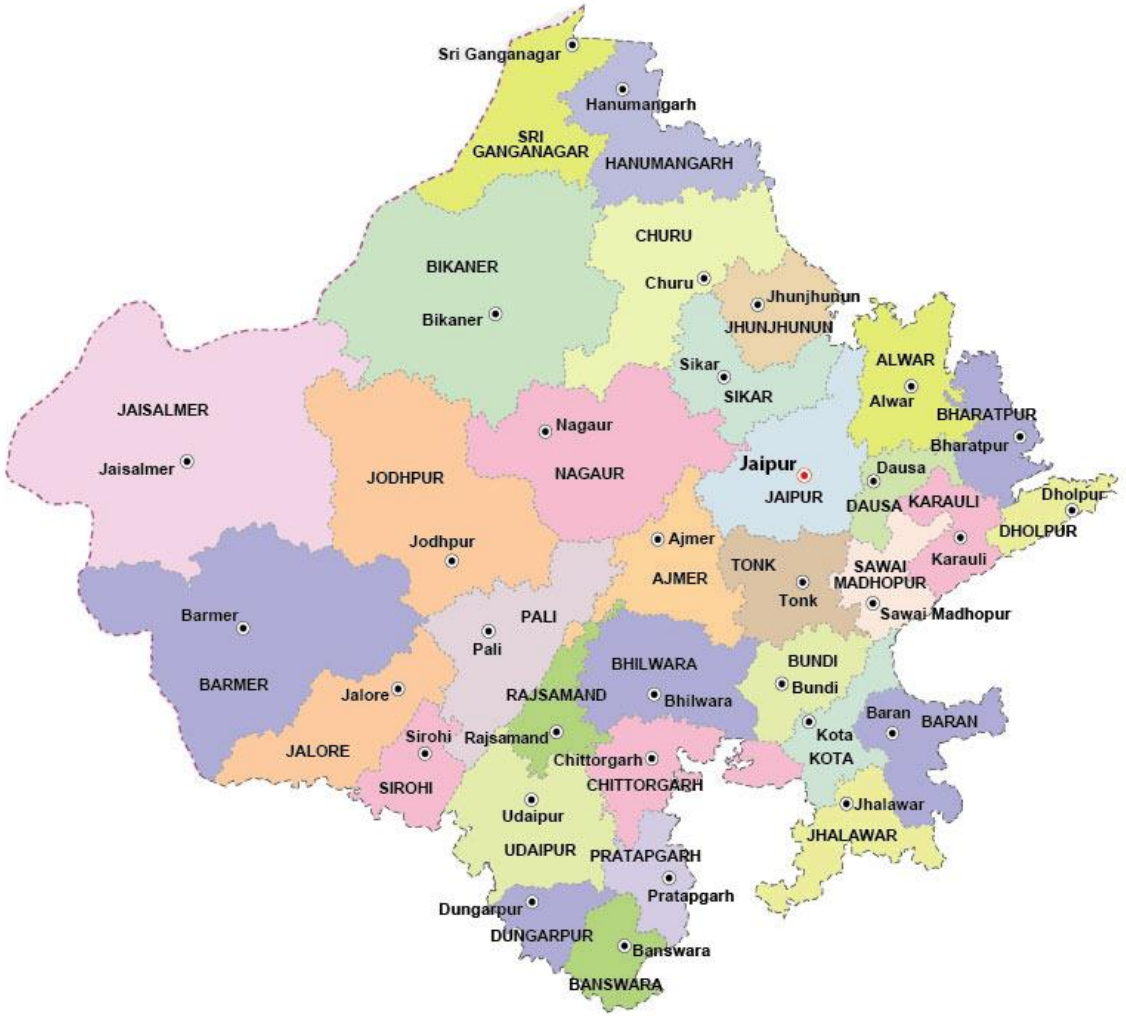
Climate

- The climate of Rajasthan in northwestern India is generally arid or semi-arid and features fairly hot temperatures over the year with extreme temperatures in both summer and winter.
- The hottest months are May and June.
- The monsoon season is from July to September; however, rainfall remains moderate.

Annual Rainfall

- On the west of Aravalli hills in Pali and Jalore districts receive maximum amount of rain of 50 cm and 43 cm in West Rajasthan.
- In the North or North-Western districts Jaisalmer district receives the lowest rainfall.
- Bikaner, Ganganagar, Jaisalmer receive annual rainfall of 26cm, 24cm and 17cm respectively.



NO. OF ACCESSIONS EVALUATED EACH YEAR

	No. of accessions (1st year)		No. of accessions (2nd year)				No. of accessions (3rd year)		No of Accesions (4th year)		No of Accesions (5th year)	
	ABD	Discarded	ABD	Discarded	RBD	Discarded	RBD	Discarded	ABD	RBD	ABD	RBD
Mung bean	50	-	53	-	08	-	10	-	40	10	24	6
Moth bean	50	12	38	14	08	-	09	-	-	09	-	6
Horse gram	50	23	27	17	08	-	16	06	-	-	-	6
Dolichos	50	18	32	-	08	-	16	04	-	16	-	7
Cowpea	09	-	-	-	10	-	20	06	32	14	27	5

BRIEF 1ST YEAR EXPERIMENTS

List of promising accessions identified in 1st year experiments

S. No.	Crop	Name of accessions
1.	Mung bean	Keshwanand Mung -1, SML-668, IC-39352, IC-39368 and RMG-492 **(05)**
2.	Moth bean	RMO-40, RMO-257, RMO-423, RMO-4-1-6-9, GMO-2, RMB-25, RMB-50 and RMB-100 **(08)**
3.	Horse gram	Maru Kulthi, HG-62, BGHG-1, IC-320913, IC-342685, IC-344193 and IC-347181 **(07)**
4.	Dolichos	IC-0623005, IC-0623010, IC-0623011, IC-0623016, IC-0623052, IC-0623063, IC-0623069 and IC-0623075 **(08)**
5.	Cowpea	GC-3, GC-5, GC-6 and PL-4 **(04)**

BRIEF 2ND YEAR EXPERIMENTS

List of promising accessions identified in 2nd year experiments

S. No.	Crop	Name of accessions	
		ABD	RBD
1.	Mung bean	Keshwanand Mung -1, GM-4, GM-7, Keshwanand Mung-2, and IC-39300 **(5)**	GM-4, RMG-492, Keshwanand Mung -1, GM-7 **(5)**
2.	Horse gram	-	HG-62, BGHG-1 and IC-320969 **(3)**
3.	Dolichos	IC-0623093, HA-17-2, HA-17-3, HA 17-4, IC-0623011, IC-0623062, IC-0623063, IC-0623069, IC-0623075 and IC-0623088 **(10)**	IC-0623011, IC-0623063, IC-0623069 and IC-0623075 **(4)**
4.	Cowpea	-	GC-3, GC-5, GC-6 and PL-1 **(4)**

BRIEF 3RD YEAR EXPERIMENTS

List of promising accessions identified in 3rd year experiments

S. No.	Crop	Name of accessions	
		ABD	RBD
1.	Mung bean	-	**IPM-99-125, GM - 4, Keshwanand Mung- 1 Keshwanand Mung-2, GM-7 (5)**
2.	Mothbean	-	**RMO-2251, RMO 423, RMO 435 (3)**
3.	Horse gram	-	**AK - 52, AK - 21, Maru Kulthi, VL Gahat-8, IC-342685 (5)**
4.	Dolichos	-	**HA-17-2, IC-0623063, IC-0623062, HA 17-4, IC-0623069 (5)**
5.	Cowpea	--	**GC-6, GC-3, RC-101, PL-1, UAM09-1055-6 (5)**

S.No.	Crop	No. of Entries	Design	Rep.	Plot Size	Crop Geometry	D.O.S.
a	Mungbean-STOL	10	RBD	3	4 x 3	60 x 15	14.07.2022
b	Mungbean- AVRDC	40	Lattice	3	4 x 3	60 x 15	14.07.2022
c	Mothbean-STOL	09	RBD	3	4 x 3	60 x 15	14.07.2022
d	Cowpea-STOL	14	RBD	3	4 x 3	60 x 15	14.07.2022
e	Dolichos-STOL	16	RBD	3	4 x 3	90 x 30	14.07.2022

4TH YEAR ACTIVITY

List of descriptors used for characterization

S.N.	Qualitative	S.N.	Quantitative
1.	Seedling vigour	11.	Pod length
2.	Growth habit	12.	No. of primary branches
3.	Twining tendency	13.	Plant height (cm)
4.	Growth pattern	14.	Days to flowering
5.	Leaf colour	15.	Number of pods per plant
6.	Leafiness	16.	Number of seeds per pod
7.	Leaf senescence	17.	Days to maturity
8.	Pod shattering	18.	1000 seed weight (g)
9.	Seed shape	19.	Yield (kg/ha)
10.	Seed colour		

Total number of accessions in each crop and germination status in RBD, ARS Mandor

Crop Name	Accessions planted	Accessions germinated	Accessions died during crop growth	Accessions harvested
Mung Bean	10	10	Nil	10
Moth Bean	09	09	Nil	09
Horse Gram	10	10	Nil	Nil*
Dolichos	12	12	Nil	12
Cowpea	32	32	Nil	32
Bambara nut	24	16	All	Nil#
Marama Bean	01	01	All	Nil#

**Horsegram crop failed due to heavy rainfall (water stagnation), salinity and heavy disease pressure.*

#Accessions of Bambara nut and Marama bean didn't survive during crop growth.

4TH YEAR ACTIVITY

List of genetic material used (Randomized Block Design)

S.N.	Mung bean	Moth bean	Horse gram	Dolichos	Cowpea
1.	GM-4	RMO-40	AK-21	IC-0623052	GC-3
2.	GM-6	RMO-225	AK-52	IC-0623062	GC-6
3.	GM-7	RMO-257	BGHG-1	IC-0623063	PL-1
4.	Keshwanand Mung-1	RMO-423	IC-342685	IC-0623069	PL-2
5.	Keshwanand Mung-2	RMO-435	IC-344181	IC-0623075	PL-4
6.	IPM-02-3	RMO-2251	VL Gahat-8	IC-0623088	PL-5
7.	IPM-205-7 (Virat)	GMO-2	VL Gahat-15	IC-0623093	RC-101
8.	IPM-99-125 (Meha)	CZM-2	VL Gahat-19	HA-3	RC-19
9.	MH 421	RMB-25	CRHG-4	HA-17-2	CBD-119
10.	MH-2-15	-	MaruKulthi	HA-17-3	TN5-78
11.	-	-		HA 17-4	UAM09-1055-6
12.	-	-		HA-10-2	KVX30-309-6G
13.	-	-			Padituya (GH-3)
14.					Zamzam (GH-4)

Mungbean -STOL

S.No.	Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	plant ht. (cm)	Branches /Plant	Pods /Plant	Pod length (cm)	Seeds /pod	Test wt. (g)
1	GM-4	708	39	73	55.0	5.4	23.3	6.3	10.1	34.80
2	GM-6	533	45	76	49.6	4.8	18.3	6.1	9.5	27.53
3	GM-7	630	43	74	49.0	5.8	15.3	6.3	10.0	32.12
4	Keshwanand Mung-1	**673**	41	73	60.0	7.2	21.7	6.7	10.4	29.92
5	Keshwanand Mung-2	585	45	73	54.7	6.4	21.7	5.9	9.7	35.70
6	IPM-02-3	394	42	72	58.7	6.3	22.7	6.6	9.2	26.43
7	IPM-205-7 (Virat)	551	43	71	50.3	6.7	17.0	7.2	10.3	36.33
8	IPM-99-125 (Meha)	612	45	73	46.6	4.8	18.3	6.0	9.0	33.40
9	MH 421	623	45	72	49.2	6.1	24.7	6.0	8.6	35.78
10	MH-2-15	491	46	74	47.6	3.9	16.7	5.5	7.4	31.93
	G. Mean	580	44	73	52	6	20	6.3	9.5	32.39
	SEm±	33.6	0.8	1.1	1.5	0.3	1.0	0.2	0.3	0.66
	CD at 5%	100	2.3	3.2	4.5	0.8	3.0	0.5	0.9	1.95
	CV (%)	10.2	3.0	2.6	5.0	8.0	8.6	5.0	5.5	3.51

4TH YEAR ACTIVITY

MUNG BEAN (10)

S.No.	Entry
1	GM-4
2	GM-6
3	GM-7
4	Keshwanand Mung-1
5	Keshwanand Mung-2
6	IPM-02-3
7	IPM-205-7 (Virat)
8	IPM-99-125 (Meha)
9	MH 421
10	MH-2-15

Early Flowering & Maturity
GM-4, RMG-975, MH-421

Superior accessions on the basis of overall performance –

GM-4, MH-421(2)

Mothbean -STOL

S.No.	Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	Plant ht. (cm)	Branches /Plant	Pods /Plant	Pod length (cm)	Seeds /pod	Test wt. (g)
1	RMO-40	213	41	72	19.6	6.9	17.5	3.1	5.1	14.46
2	RMO-225	199	41	73	23.8	5.8	19.4	3.2	5.2	16.93
3	RMO-257	276	40	74	22.0	9.8	16.7	3.6	4.5	18.58
4	RMO-423	242	42	73	18.2	7.4	16.4	3.5	4.4	13.72
5	RMO-435	258	41	72	17.9	5.9	20.8	3.4	5.3	17.14
6	RMO-2251	284	41	72	20.3	9.2	17.9	3.8	5.7	17.36
7	GMO-2	197	40	73	16.5	7.0	15.7	3.5	4.8	15.98
8	CZM-2	248	39	72	18.6	4.9	16.1	3.6	5.5	15.51
9	RMB-25	218	42	73	19.9	6.4	20.1	3.5	4.9	16.78
	G. Mean	237	40.7	72.6	19.6	7.0	18.2	3.4	5.0	16.27
	SEm±	6.8	0.8	1.1	0.8	0.4	0.9	0.1	0.2	0.28
	CD at 5%	20	2.3	3.3	2.5	1.1	2.7	0.3	0.5	0.84
	CV (%)	6.0	3.1	2.6	7.3	9.3	8.6	5.7	5.4	2.87

4TH YEAR ACTIVITY

MOTH BEAN (09)

S.No.	Entry
1	RMO-40
2	RMO-225
3	RMO-257
4	RMO-423
5	RMO-435
6	RMO-2251
7	GMO-2
8	CZM-2
9	RMB-25

Early Flowering and Maturity
RMO-435, RMO-40, RMO-2251

Superior accessions on the basis of overall performance – RMO-2251, RMO-257, GMO-2 **(3)**

Dolichos-STOL

S.No.	Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	Plant ht. (cm)	Branches /Plant	Pods /Plant	Pod length (cm)	Seeds /pod	Test wt (g)
1	IC-0623052	767	113	186	104	3.9	67.7	4.6	3.6	189.2
2	IC-0623062	881	112	166	106	3.9	45.7	4.6	4.0	171.3
3	IC-0623063	883	118	166	101	3.2	63.9	5.1	3.1	173.6
4	IC-0623069	942	126	165	103	3.7	65.1	4.3	3.3	154.7
5	IC-0623075	839	108	184	102	3.3	70.1	4.4	3.3	176.8
6	IC-0623088	580	124	185	101	3.6	74.0	4.5	3.6	184.9
7	IC-0623093	531	113	166	94	2.9	62.3	4.7	3.7	164.1
8	HA-3	541	85	186	92	3.1	42.5	4.6	3.3	194.9
9	HA-17-2	885	105	183	103	3.6	39.5	4.6	3.4	202.1
10	HA-17-3	815	98	186	100	3.2	42.7	4.8	3.7	180.2
11	HA 17-4	842	105	184	103	3.5	48.5	4.2	3.8	170.9
12	HA-10-2	653	80	185	107	3.1	45.5	4.0	3.1	162.7
	G. Mean	763	107	178	101	3	57	4.5	3.4	177.1
	SEm±	24	1.0	1.4	2.6	0.1	1.2	0.1	0.2	2.3
	CD at 5%	70	2.9	4.1	7.6	0.4	3.6	0.3	0.6	6.7
	CV (%)	5.8	1.6	1.4	4.5	6.8	3.8	4.3	8.6	2.2

4TH YEAR ACTIVITY

DOLICHOS (12)

S.No.	Entry
1	IC-0623052
2	IC-0623062
3	IC-0623063
4	IC-0623069
5	IC-0623075
6	IC-0623088
7	IC-0623093
8	HA-3
9	HA-17-2
10	HA-17-3
11	HA-17-4
12	HA-10-2

Early Flowering
HA-17-4, HA-10-2, HA-3, IC-0623052, IC-0623062, IC-0623069 (6)

Superior accessions on the basis of overall performance –

IC-0623052, IC-0623062, HA-17-3, HA-17-4 **(4)**

Cowpea-STOL

S.No.	Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	Plant ht. (cm)	Branches /Plant	Pods /Plant	Pod length (cm)	Seeds /pod	Test wt (g)
1	GC-3	694	41	83	40	8.3	74.7	12.6	10.0	68.8
2	GC-6	708	40	82	60	9.0	78.3	15.0	10.2	81.7
3	PL-1	712	40	83	46	8.3	79.3	15.2	10.0	109.5
4	PL-2	547	44	81	35	8.3	76.0	11.4	9.0	111.1
5	PL-4	786	38	83	36	8.7	77.0	14.0	11.2	102.7
6	PL-5	637	41	82	42	8.3	78.0	14.3	12.0	97.4
7	RC-101	485	39	84	52	7.7	79.0	15.0	9.0	72.0
8	RC-19	617	39	82	51	8.3	76.0	11.7	10.6	92.1
9	CBD-119	488	40	81	62	8.0	82.3	13.5	10.0	65.9
10	TN5-78	509	42	82	27	8.0	81.3	14.2	10.3	141.9
11	UAM09-1055-6	733	40	83	33	8.3	77.0	13.7	9.4	134.8
12	KVX30-309-6G	564	41	84	45	7.7	68.3	13.3	10.8	138.2
13	Padituya (GH-3)	389	48	82	42	8.3	75.0	14.5	10.2	130.2
14	Zamzam (GH-4)	662	42	82	42	8.7	80.0	13.0	11.0	134.2
	G. Mean	609	41	83	44	8	77	13.7	10.3	105.7
	SEm±	28	0.7	0.6	1.5	0.4	1.9	0.9	0.8	1.0
	CD at 5%	82	2.1	1.8	4.3	1.1	5.6	2.5	2.3	2.9
	CV (%)	9.5	3.1	1.3	5.9	7.9	4.3	8.2	7.3	1.8

4TH YEAR ACTIVITY

S.No.	Entry
1	**GC-3**
2	**GC-6**
3	**PL-1**
4	**PL-2**
5	**PL-4**
6	**PL-5**
7	**RC-101**
8	**RC-19**
9	**CBD-119**
10	**TN 5-78**
11	**UAM 09-1055-6**
12	**KVX 30-309-6G**
13	**GH-3**
14	**GH-4**

COWPEA(14)

Early Flowering
TN-5-78, KVX30-309-64, PL-4, PL-2, CBD-119, GC-3, PL-5 **(07)**

Superior accessions on the basis of overall performance – UAM09-1055-6,Padituya (GH-3), GC-3, PL-1**(4)**

CowpeaAccessions

S. No.	Name of Variety	S. No.	Name of Variety
1.	GC-3	17.	Nizwe
2.	GC-6	18.	NARO COWPEA 2
3.	PL-1	19.	NARO COWPEA 3
4.	PL-2	20.	NARO COWPEA 4
5.	PL-4	21.	NARO COWPEA 5
6.	PL-5	22.	NARO COWPEA 6
7.	RC-101	23.	SECOW 1T
8.	RC-19	24.	SECOW – 2W
9.	CBD-119	25.	SECOW 3B
10.	TN5-78	26.	SECOW 4W
11.	UAM09-1055-6	27.	SECOW 5T
12.	KVX30-309-6G	28.	TZA 256
13.	Padituya (GH-3)	29.	TZA 2746
14.	Zamzam (GH-4)	30.	TZA 3160
15.	Fuampea-1	31.	C 196
16.	IT99-K-573-1-1	32.	TZA 4139

Genotypes	Yield(kg)
GC-3	406
GC-6	511
PL-1	491
PL-2	953
PL-4	736
PL-5	881
RC-101	424
RC-19	844
CBD-119	855
TN5-78	402
UAM09-1055-6	746
KVX30-309-6G	347
Padituya (GH-3)	268
Zamzam (GH-4)	616
Fuampea-1	474
IT99-K-573-1-1	633

Genotypes	Yield(kg/ha)
Nizwe	69
NARO COWPEA 2	71
NARO COWPEA 3	40
NARO COWPEA 4	45
NARO COWPEA 5	47
NARO COWPEA 6	55
SECOW 1T	104
SECOW – 2W	184
SECOW 3B	30
SECOW 4W	20
SECOW 5T	87
TZA 256	450
TZA 2746	137
TZA 3160	114
C 196	166
TZA 4139	226

4TH YEAR ACTIVITY

Cowpea (ABD)

Early Flowering & Maturity

- IT-99-K-573-1, RC-101, PL-4, GC-6, GC-3, PL-1, CBD-119, PL-5

Overall Performances

Cowpea (ABD):PL-2, PL-5, CBD-119, RC-19

Bambara groundnut Germplasm

S. No.	Name of Variety	S. No.	Name of Variety
1.	CMV01-18	13.	CVdz-3
2.	CMV03-18	14.	CVdz-4
3.	CMV04-18	15.	CVdz-6
4.	CMV05-18	16.	CVdz-7
5.	CMV06-18	17.	CVdz-8
6.	CMV07-18	18.	CVdz-9
7.	CMV08-18	19.	IsukluKorikor
8.	CMV011-18	20.	Isuk Lu Arengak
9.	CMV012-18	21.	Isuk Lu Inyanga (Acen)
10.	CMV07-18-2	22.	Isuk Lu Lol (Akwii)
11.	CVdz-1	23.	Isuk Lu Iriokok
12.	CVdz-2	24	Isuk Lu Kol (Moses)

Mungbean AVRDC Lines

S. No.	Name of Variety		S. No.	Name of Variety
1	AVMU 21256		20	AVMU 21282
2	AVMU 21259		21	AVMU 21284
3	AVMU 21260		22	AVMU 21287
4	AVMU 21261		23	AVMU 21288
5	AVMU 21262		24	AVMU 21289
6	AVMU 21263		25	AVMU 21291
7	AVMU 21265		26	AVMU 1676
8	AVMU 21266		27	AVMU 1677
9	AVMU 21267		28	AVMU 1679
10	AVMU 21268		29	AVMU 1683
11	AVMU 21269		30	AVMU 1685
12	AVMU 21272		31	AVMU 1688
13	AVMU 21273		32	AVMU 1689
14	AVMU 21276		33	AVMU 1690
15	AVMU 21277		34	AVMU 1695
16	AVMU 21278		35	AVMU 1698
17	AVMU 21279		36	AVMU 1699
18	AVMU 21280		37	AVMU 16100
19	AVMU21281		38	AVMU 16101

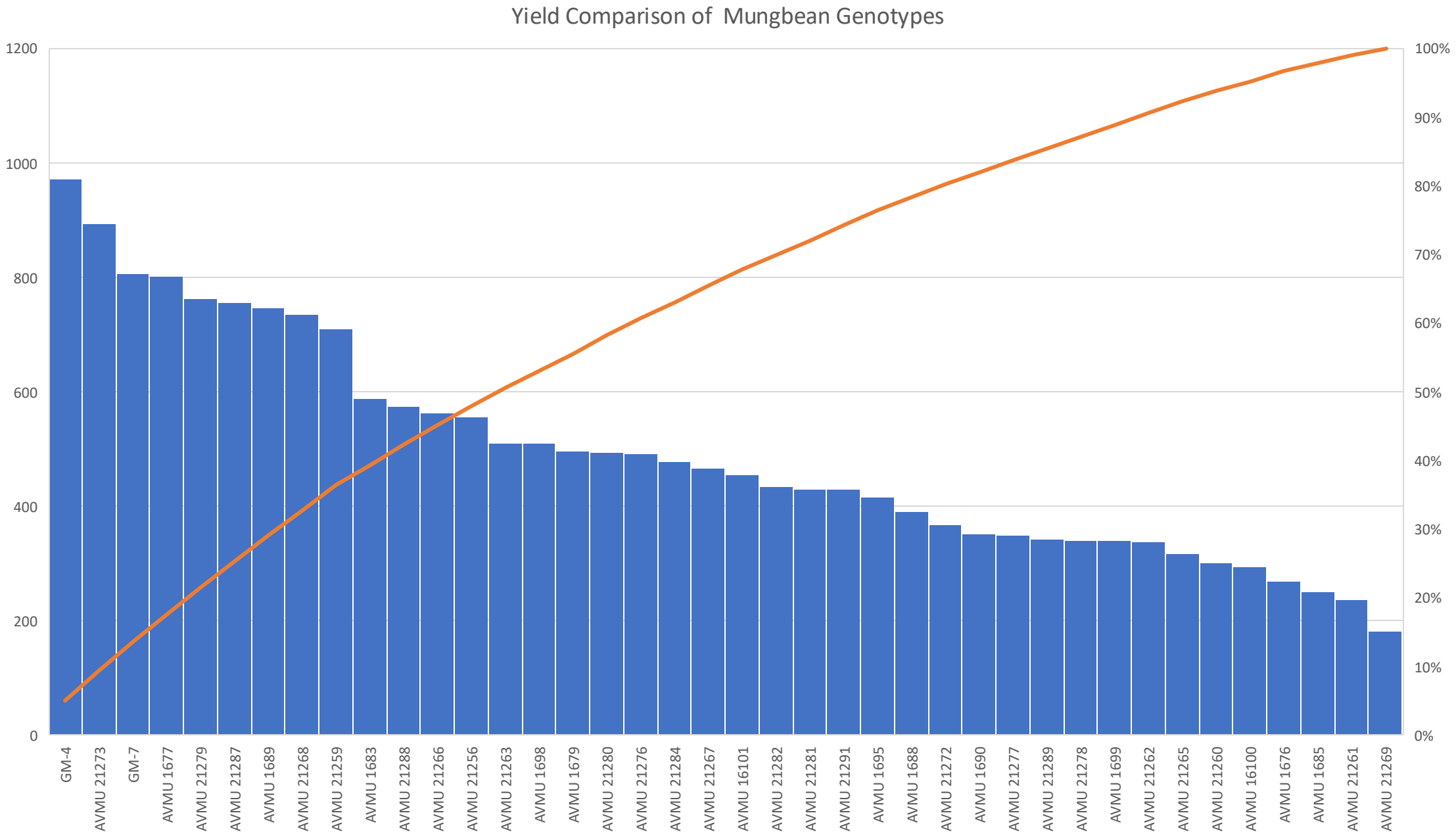
Mungbean -AVRDC

S.No.	Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	plant ht. (cm)	Branches /Plant	Pods /Plant	Pod length (cm)	Seeds /pod	Test wt. (g)
1	AVMU 21273	894	42	82	46	5	24	7	8	40.4
2	AVMU 1677	803	42	82	61	4	21	9	8	46.5
3	AVMU 21279	763	44	81	50	4	20	8	8	28.4
4	AVMU 21287	756	41	81	51	4	21	8	7	33.7
5	AVMU 1689	747	43	80	58	4	22	8	8	32.7
6	AVMU 21268	736	42	79	64	4	21	8	9	40.8
7	AVMU 21259	710	43	87	52	4	20	9	8	41.2
8	AVMU 1683	588	41	78	55	4	19	7	7	39.7
9	AVMU 21288	575	41	81	50	4	18	7	7	45.4
10	AVMU 21266	564	44	79	44	3	21	7	5	37.5
	GM-4	971	43	80	51	4	19	9	8	41.1
	GM-7	807	44	79	47	3	21	9	8	44.2
	G. Mean	494	43	79	48	4	20	7	8	38
	SEm±	120	0.9	1.9	2.3	0.6	1.0	0.6	0.8	1.0
	CD at 5%	337	2.6	5.3	6.4	1.6	2.9	1.8	2.2	2.9
	CV (%)	10	3.8	4.1	8.1	7.2	8.7	8.4	8.0	3.7

Continue..

S.No.	Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	plant ht. (cm)	Branches/Pl (pri)	Pods/Plant	Pod length (cm)	Seeds/pod	Test wt
11	AVMU 21256	556	45	76	45	5	21	6	8	33.7
12	AVMU 21263	511	43	80	62	4	19	8	8	43.0
13	AVMU 1698	511	42	79	48	4	19	9	9	34.0
14	AVMU 1679	496	43	80	54	5	21	8	8	34.0
15	AVMU 21280	494	43	79	59	4	21	7	8	36.3
16	AVMU 21276	492	42	80	54	4	21	8	8	46.4
17	AVMU 21284	478	45	80	42	4	22	8	8	36.3
18	AVMU 21267	467	44	78	47	4	20	7	8	38.1
19	AVMU 16101	456	43	77	44	4	21	7	7	40.5
20	AVMU 21282	435	41	75	48	4	18	7	8	39.6
21	AVMU 21281	429	43	78	44	3	19	4	5	36.8
22	AVMU 21291	429	43	80	43	4	21	7	9	40.0
	GM-4	971	43	80	51	4	19	9	8	41.1
	GM-7	807	44	79	47	3	21	9	8	44.2
	G. Mean	494	43	79	48	4	20	7	8	38
	SEm±	120	0.9	1.9	2.3	0.6	1.0	0.6	0.8	1.0
	CD at 5%	337	2.6	5.3	6.4	1.6	2.9	1.8	2.2	2.9
	CV (%)	10	3.8	4.1	8.1	7.2	8.7	8.4	8.0	3.7

S.No.	Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	plant ht. (cm)	Branches/Pl (pri)	Pods/Plant	Pod length (cm)	Seeds/pod	Test wt
23	AVMU 1695	417	43	78	47	5	20	8	8	30.9
24	AVMU 1688	390	43	81	48	4	20	8	8	40.7
25	AVMU 21272	368	44	80	44	3	22	7	7	37.7
26	AVMU 1690	351	43	78	44	4	20	7	8	30.5
27	AVMU 21277	350	42	78	40	4	18	5	7	41.1
28	AVMU 21289	343	43	79	44	4	19	8	7	30.1
29	AVMU 21278	340	41	79	45	4	23	8	7	44.7
30	AVMU 1699	340	42	79	43	4	21	6	7	44.2
31	AVMU 21262	338	43	78	41	4	23	6	8	45.3
32	AVMU 21265	317	45	81	44	4	20	8	8	29.1
33	AVMU 21260	301	44	81	43	4	21	7	8	37.3
34	AVMU 16100	294	44	80	44	4	20	7	8	35.4
35	AVMU 1676	268	43	77	51	5	22	6	8	34.2
36	AVMU 1685	251	41	77	46	2	20	8	5	28.9
37	AVMU 21261	236	44	77	44	4	21	8	8	41.4
38	AVMU 21269	181	42	77	40	4	19	7	7	31.8
39	GM-4	971	43	80	51	4	19	9	8	41.1
40	GM-7	807	44	79	47	3	21	9	8	44.2
	G. Mean	494	43	79	48	4	20	7	8	38
	SEm±	120	0.9	1.9	2.3	0.6	1.0	0.6	0.8	1.0
	CD at 5%	337	2.6	5.3	6.4	1.6	2.9	1.8	2.2	2.9
	CV (%)	10	3.8	4.1	8.1	7.2	8.7	8.4	8.0	3.7


Yield Comparison of Mungbean Genotypes
1200
1000
800
600
400
200
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
GM-4
AVMU 21273
GM-7
AVMU 1677
AVMU 21279
AVMU 21287
AVMU 1689
AVMU 21268
AVMU 21259
AVMU 1683
AVMU 21288
AVMU 21266
AVMU 21256
AVMU 21263
AVMU 1698
AVMU 1679
AVMU 21280
AVMU 21276
AVMU 21284
AVMU 21267
AVMU 16101
AVMU 21282
AVMU 21281
AVMU 21291
AVMU 1695
AVMU 1688
AVMU 21272
AVMU 1690
AVMU 21277
AVMU 21289
AVMU 21278
AVMU 1699
AVMU 21262
AVMU 21265
AVMU 21260
AVMU 16100
AVMU 1676
AVMU 1685
AVMU 21261
AVMU 21269

4TH YEAR ACTIVITY

Crop	Character	Genotype
Mungbean	**Early Flowering & Maturity**	AVMU-21282, AVMU-1685, AVMU-1698, AVMU-1683, AVMU-21273, AVMU-21287, AVMU-21265, AVMU-21256, AVMU-1685, AVMU-21262, AVMU-16101, AVMU-1676 (12)

Overall Performances

- AVMU-21279,AVMU-21287, AVMU-1689,AVMU-21273, AVMU-1677, AVMU-21259 (6)

MungbeanVarieties Raised in Farmer's Field

Four varieties of Mungbean (GM-4, GM-7, RMG-975 and MH-421) and three varieties of Mothbean (RMO-2251, RMO-435 and RMO-257) were planted in strips at farmer's fields at different locations for their performance evaluation

COMPARATIVE OBSERVATION BASED ON FARMERS' FEEDBACK ACROSS LOCATIONS

S. No.	Locations	Observation	Mungbean				Mothbean		
			GM-4	GM-7	MH-421	RMG-975	RMO-257	RMO-435	RMO-2251
1	Maulasar, Nagaur	Earliness	A	C	D	B	C	B	A
		Pods bearing	A	C	B	D	B	C	A
		Fodder Yield	C	A	D	B	A	C	B
		Seed Yield	A	D	B	C	C	B	A
		Suitable under drought	A	D	C	B	C	B	A
		Disease tolerance	A	D	C	B	C	B	A
		Overall best variety	**A**	**D**	**B**	**C**	**C**	**B**	**A**
2.	Keshwana, Jalore		A	B	D	C	C	B	A
3.	Bhavi, Bilara		A	D	B	C	C	B	A
4.	Utthamann, Sirohi		A	B	D	C	-	-	-
5.	Gudamalani, Barmer		A	D	C	B	C	B	A

Result of the Field Demonstration of Mungbean and Moth Bean

- For Mungbean, the GM-4 variety performs the best overall in terms of most of the observed parameters across the locations. The RMG-975 variety also shows decent performance
- Among the Mothbean varieties, RMO-2251 and RMO-435 appear to be the top performers, with RMO-257 also showing decent results.
- The performance of the varieties varies across the different locations, indicating the importance of evaluating their suitability for specific growing conditions.
- Parameters like disease tolerance, drought suitability, and yield (both seed and fodder) are crucial in selecting the most appropriate variety for a given farming scenario.
- The data provides a comparative assessment that can help farmers and researchers make informed decisions about the choice of Mungbean and Mothbean varieties based on their specific needs and local conditions.

4TH YEAR ACTIVITY AT ARSS SUMERPUR

COWPEA(14)

S. No	Variety Name
1	**GC-3**
2	**GC-6**
3	**PL-1**
4	**PL-2**
5	**PL-4**
6	**PL-5**
7	**RC-101**
8	**RC-19**
9	**CBD-119**
10	**TN 5-78**
11	**UAM 09-1055-6**
12	**KVX 30-309-6G**
13	**GH-3**
14	**GH-4**
15	
16	

HORSEGRAM(10)

S. No	Variety Name
1	AK-21
2	AK-52
3	BGHG-1
4	IC-342685
5	IC-344181
6	VL GAHAT -8
7	VL GAHAT -15
8	VL GAHAT - 19
9	CRHG - 4
10	MARU KULTHI
11	
12	
13	
14	
15	
16	

DOLICHOS (12)

S. No.	Variety Name
1	IC-0623052
2	IC-0623062
3	IC-0623063
4	IC-0623069
5	IC-0623075
6	IC-0623088
7	IC-0623093
8	HA-3
9	HA-17-2
10	HA-17-3
11	HA-17-4
12	HA-10-2
13	
14	
15	
16	

Mean Values of Quantitative Characters of cowpea Accessions at ARSS Sumerpur

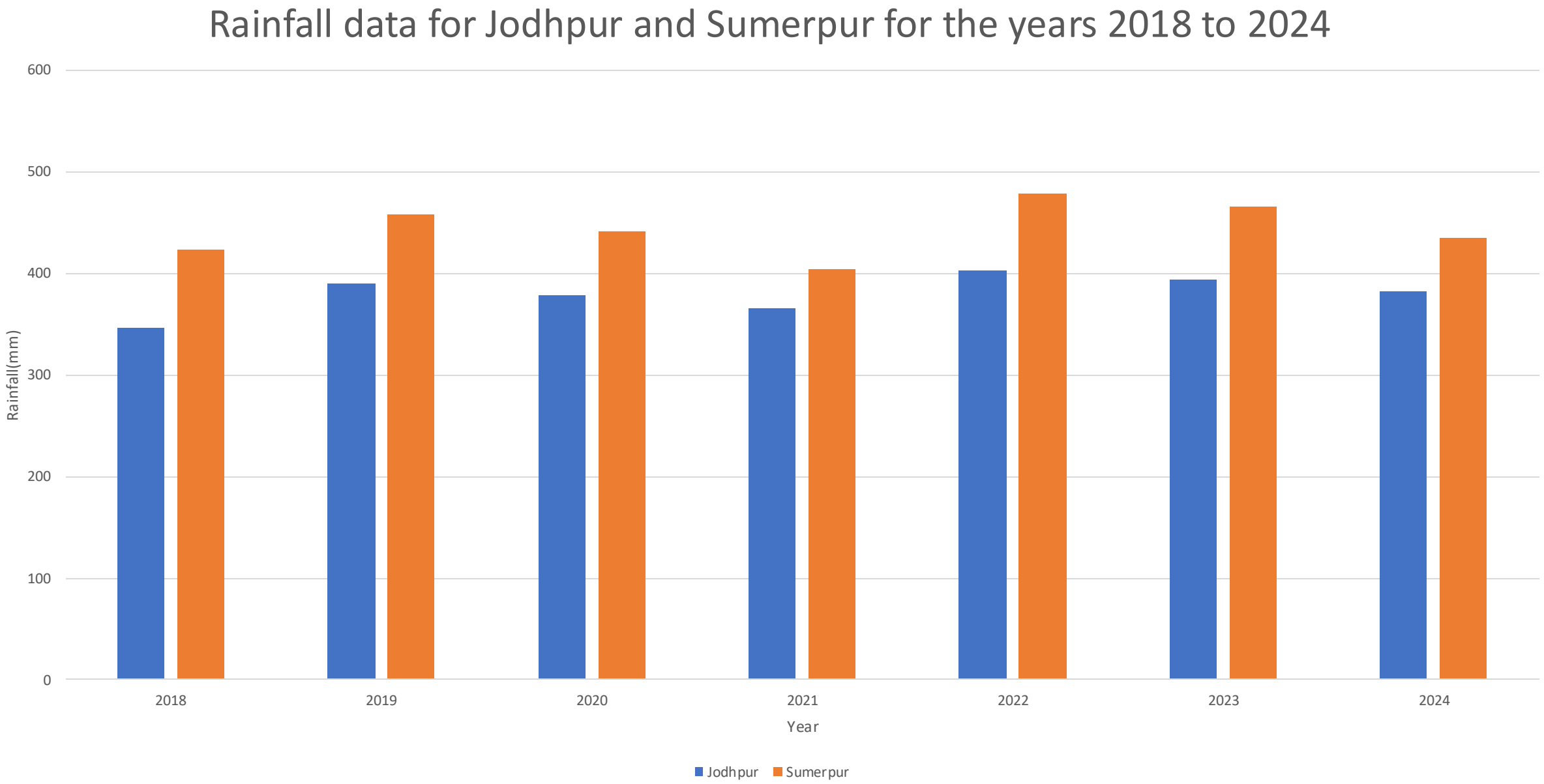
	Entry	Days to Flowering	Days to Maturity	Plant Height (cm)	Primary Branches/plant	No. of Pods/Plant	No. of seeds/pod	Pod length (cm.)	Seed Yield (Kg/ha)
1	GC-3	47	78	53.00	**4.89**	13.11	11.22	13.28	**641.67**
2	GC-6	45	76	55.11	3.33	14.00	**9.33**	12.71	530.56
3	PL-1	44	74	52.33	3.78	10.78	10.67	15.01	411.11
4	PL-2	47	78	50.00	3.56	12.89	10.78	13.24	422.22
5	PL-4	43	76	49.44	4.00	16.33	10.78	15.52	394.44
6	PL-5	**52**	**83**	52.11	3.44	10.56	11.33	13.59	405.56
7	RC-101	46	79	**59.78**	3.33	13.44	11.33	13.62	519.44
8	RC-19	46	78	50.78	3.33	**17.33**	11.11	14.87	366.67
9	CBD-119	45	75	58.55	3.67	11.33	11.00	13.23	400.00
10	TN 5-78	**43**	74	45.67	2.56	**8.44**	10.33	14.11	**58.33**
11	UAM 09-1055-6	45	76	**48.55**	2.78	10.33	11.67	14.91	241.67
12	KVX 30-309-6G	44	75	49.67	3.33	9.33	**12.44**	13.94	322.22
13	GH-3	45	74	49.22	3.33	13.00	11.78	14.97	305.56
14	GH-4	47	80	50.67	**2.33**	9.00	11.56	14.87	141.67
	Mean	46	77	51.78	3.40	12.13	11.10	14.13	369
	SEm±	0.7868	1.6975	1.5974	0.2007	0.8400	0.56	0.5	0.0300
	CD at 5%	2.2872	4.9346	4.6437	0.5835	2.4400	1.63	1	0
	CV (%)	2.9764	3.8220	5.3437	10.2115	11.9600	8.76	6	10

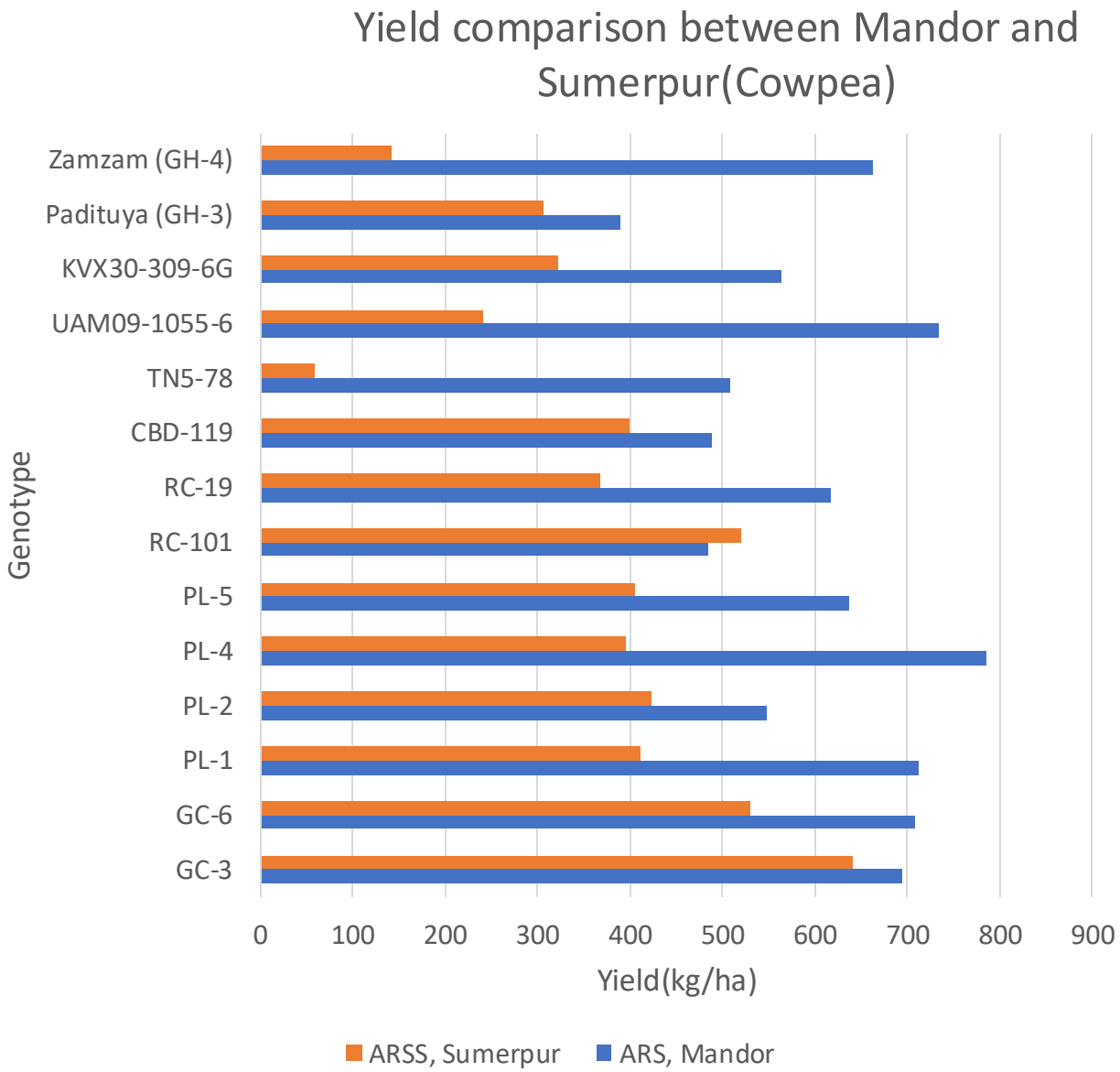
Mean Values of Quantitative Characters of Dolichos Accessions at ARSS Sumerpur

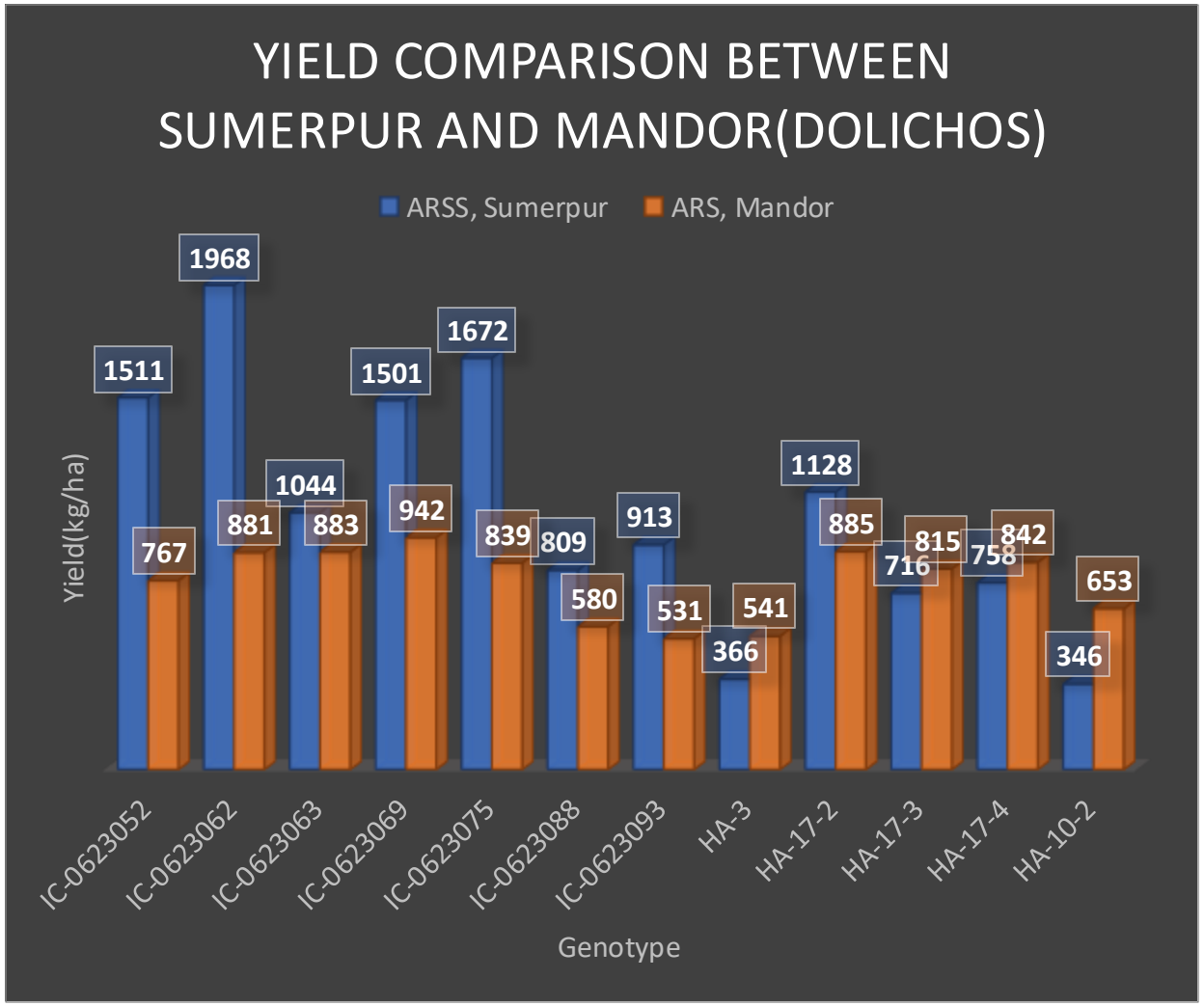
SN.	Treatment	DTF	DTM	NPPP	NBPP	PH	NSPP	YLD(kg/ha)
1	IC-0623052	92.67	151.00	141.33	3.99	101.67	3.67	1.511
2	IC-0623062	76.33	153.00	161.00	4.15	119.00	3.67	1.97
3	IC-0623063	94.00	150.00	110.67	4.09	102.33	3.67	1.04
4	IC-0623069	96.00	154.00	127.67	4.03	92.33	3.78	1.50
5	IC-0623075	89.00	146.00	162.33	3.66	104.67	3.89	1.67
6	IC-0623088	92.00	154.00	83.00	3.67	85.00	3.67	0.81
7	IC-0623093	90.00	143.33	108.33	2.50	99.67	4.22	0.91
8	HA-3	58.00	130.00	71.00	4.44	71.00	3.11	0.37
9	HA-17-2	94.00	151.00	148.33	4.50	96.33	4.33	1.13
10	HA-17-3	73.00	144.00	123.67	3.00	85.67	3.67	0.72
11	HA-17-4	68.00	140.00	91.00	3.09	77.33	4.78	0.76
12	HA-10-2	71.00	141.00	82.00	3.50	94.67	4.11	0.35
	Total	994.00	1757.33	1410.33	44.63	1129.67	46.56	12.73
	SEm±	0.13	0.10	1.93	0.08	0.51	0.16	0.04
	CD at 5%	0.39	0.28	5.67	0.24	1.49	0.48	0.12
	CV (%)	0.28	0.11	2.85	3.85	0.94	7.24	6.78
	Mean	83	146	117.5	3.7	94.1	3.9	1.1

Mean Values of Quantitative Characters of Horsegram Accessions at ARSS Sumerpur

S.No.	Treatments	Days to Flowering	Days to Maturity	No of pod	No of branches	Plant height	No of Seeds Per Pods	Yield (kg/ha)
1	AK-21	50	86	43	7	64.33	6	450.0
2	AK-52	**47**	82	50	9	74.67	5	**555.3**
3	BGHG-1	80	91	48	8	83.33	6	387.7
4	IC-342685	63	101	**69**	**12**	78.67	6	527.0
5	IC-344181	**74**	102	59	7	70.33	5	356.7
6	VL GAHAT -8	71	**112**	47	12	**84.00**	6	461.7
7	VL GAHAT -15	48	82	51	9	82.33	6	453.0
8	VL GAHAT - 19	48	83	61	8	**54.33**	5	84.0
9	CRHG - 4	72	98	**42**	9	60.67	6	494.0
10	MARU KULTHI	49	84	110	10	81.33	5	523.3
	Total	602	921	579	91	734	54	4293
	SEm±	0.211	0.183	2.633	0.363	1.426	0.339	13.913
	CD at 5%	0.626	0.542	7.824	1.080	4.237	1.007	41.338
	CV (%)	0.607	0.343	7.873	6.943	3.365	10.802	5.614
	Mean	60.2	92.1	57.9	9.1	73.4	5.4	429.3


Rainfall data for Jodhpur and Sumerpur for the years 2018 to 2024
600
500
400
300
200
100
0
Rainfall(mm)
2018
2019
2020
2021
2022
2023
2024
Year
Jodhpur
Sumerpur


Yield comparison between Mandor and Sumerpur(Cowpea)
Zamzam (GH-4)
Padituya (GH-3)
KVX30-309-6G
UAM09-1055-6
TN5-78
CBD-119
RC-19
RC-101
PL-5
PL-4
PL-2
PL-1
GC-6
GC-3
Genotype
0
100
200
300
400
500
600
700
800
900
Yield(kg/ha)
ARSS, Sumerpur
ARS, Mandor


YIELD COMPARISON BETWEEN SUMERPUR AND MANDOR(DOLICHOS)
ARSS, Sumerpur
ARS, Mandor
Yield(kg/ha)
1511
767
1968
881
1044
883
1501
942
1672
839
809
580
913
531
366
541
1128
885
716
815
758
842
346
653
IC-0623052
IC-0623062
IC-0623063
IC-0623069
IC-0623075
IC-0623088
IC-0623093
HA-3
HA-17-2
HA-17-3
HA-17-4
HA-10-2
Genotype

Promising accessions on the basis of early flowering, maturity and grain yield

Characters			
Crop	Early Flowering	Late Maturing	Grain Yield
Cowpea	PL-4, TN 5-78, PL-1 KVX 30-309-6G	PL-4	GC-3, GC-4, PL-2
Dolichos	HA-3, HA 17-4, HA 10-2	IC-0623088, IC-0623069, IC-0623062	IC-0623062, IC-0623075, IC-0623069
Horsegram	AK-52, VL-Gahat-15,AK-21	BGHG-1, VL Gahat-8, VL Gahat-15	IC-342685, VL Gahat-8, VL Gahat-15
Mungbean	AVMU-1685, AVMU-21281, AVMU-21273	AVMU-21260, AVMU-21259, AVMU-21267	GM-4, GM-7, AVMU-21273, AVMU-21272

4TH YEAR ACTIVITY

FARMERS FIELD DAY

Farmer's Field Day was organized at three locations Dattau, Ladnu; Nosar, Phalodi and Bhavi, Bilara Villages on dated 22, 23 and 28 September, 2022

Farmers field visit at Dattau village near Maulasar

Interaction with Farmers in Dattau Village while Farmer's Field Da

Farmer's Field Day celebration in Nosar village

Interaction with Farmers during Farmer's Field day at Bhawi village

Kirkhouse Trust Supporting research and education in the biological sciences

Field view of Dolichos Crop at ARS, Mandor

Field view of Horsegram Experiment at ARS, Mandor

Mungbean experiments at ARS, Mandor

Field view: Cowpea experiment at ARS, Mandor

FIELD PHOTOGRAPHS

Kirkhouse Trust Supporting research and education in the biological sciences

Field view of Dolichos Crop at ARSS, Sumerpur

Field view of Horsegram Experiment at ARSS, Sumerpur

MungbeanAVRDC experiments at ARSS, Sumerpur

Field view: Cowpea experiment at ARSS, Sumerpur

FIELD PHOTOGRAPHS

Kirkhouse Trust Supporting research and education in the biological sciences

Performance of Mungbean and Mothbean varieties at Farmer's Field

Mungbean varieties field performance in Jalore

Mothbean seed production at farmer's field in Jalore

Mungbean varieties demonstration at farmer's field in Sirohi

Mungbean performance at farmer's field in Sirohi district

Mungbean demonstration at farmer's field in Gudamalani, Barmer

Mothbean field performance at farmer's field in Gudamalani, Barmer

Bambara groundnut plants germination at ARS, Mandor

Marama bean plants germination at ARS, Mandor

5th Year Field Activity
ARS, Mandor

Sowing of STOL Experiments

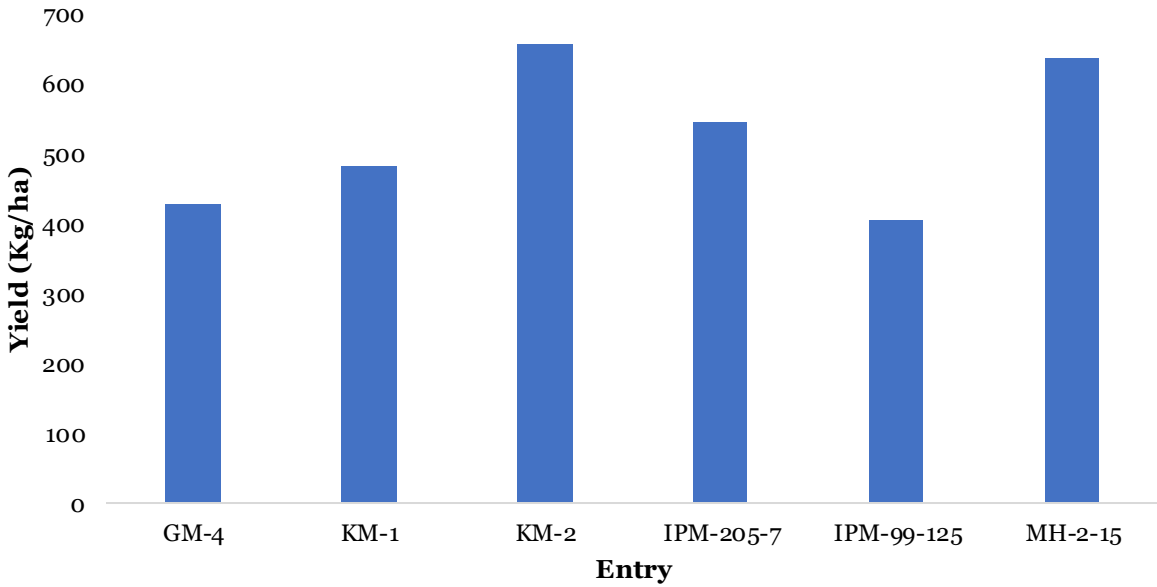

GPS Map Camera
Jodhpur, Rajasthan, India
924W+8V, Jodhpur, Rajasthan 342304, India
Lat 26.355877°
Long 73.049936°
08/07/23 02:10 PM GMT +05:30
Google


GPS Map Camera
Jodhpur, Rajasthan, India
924W+8V, Jodhpur, Rajasthan 342304, India
48575°
09:55 AM GMT +05:30


GPS Map Camera
Jodhpur, Rajasthan, India
924W+8V, Jodhpur, Rajasthan 342304, India
Lat 26.354368°
Long 73.048474°
08/07/23 10:11 AM GMT +05:30
Google

MUNGBEAN

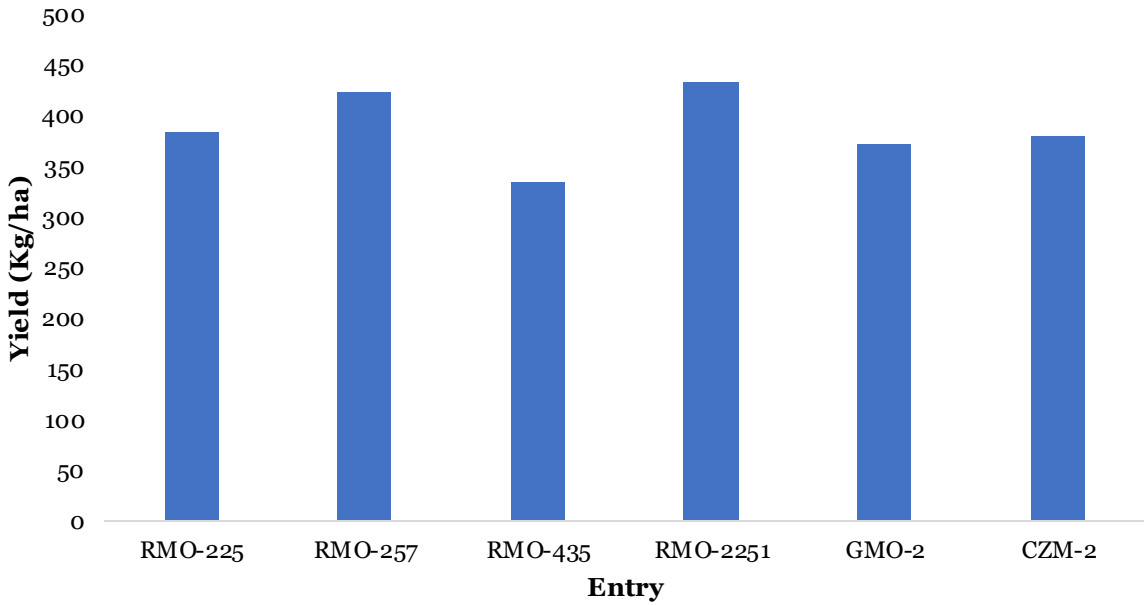
Date of Sowing: 9/07/2023
No of genotypes: 6
No. of Replication:4
Spacing: 60x15 cm
Plot Size: 4x3 m2



Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	plant ht. (cm)	Branches/Pl (pri)	Pods/Plant	Pod length (cm)	Seeds/pod	100 seed wt
GM-4	427	39	64	24.3	5.45	25.9	3.2	8.2	3.31
KM-1	483	42	67	24.6	6.45	29.2	3.0	8.0	2.78
KM-2	658	45	68	25.3	7.5	30.0	3.1	8.1	3.44
IPM-205-7	546	44	67	17.8	6.3	20.5	3.0	8.6	3.38
IPM-99-125	406	43	66	21.7	5.3	25.2	3.2	7.6	3.57
MH-2-15	637	45	67	21.6	5.3	29.6	2.9	8.4	3.32
CV	13.2	2.04	1.1	14.2	3.3	15.2	4.3	4.6	8.8
SE	41.7	0.44	0.35	1.59	0.10	2.03	0.07	0.19	0.07
CD	125.8	1.32	1.05	4.80	0.30	6.12	0.20	0.58	0.44
G.Mean	526.0	43	67.00	22.5	6.04	26.75	3.06	8.13	3.30

MOTHBEAN

Date of Sowing: 9/07/2023
No of genotypes: 6
No. of Replication:4
Spacing: 60x15 cm
Plot Size: 4x3 m2



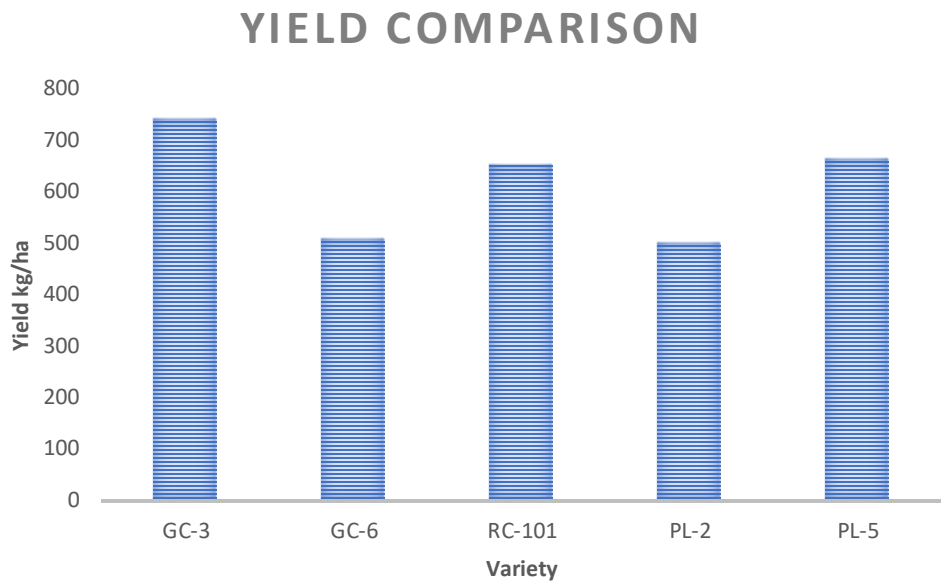
Entry	Seed yield (kg/ha)	Days to Flower	Days to Maturity	plant ht. (cm)	Branches/Pl (pri)	Pods/Plant	Pod length (cm)	Seeds/pod	100 seed wt
RMO-225	383	41	68	12.2	4.782	28.55	3.9	5.8	2.90
RMO-257	423	41	67	10.6	4.264	27.2	3.9	5.4	2.52
RMO-435	333	40	68	12.7	4.847	28.9	4.9	6.1	2.69
RMO-2251	**433**	41	67	11.5	4.696	**28.25**	4.2	5.8	2.62
GMO-2	371	40	66	12.1	4.622	26.3	4.0	6.0	2.64
CZM-2	379	39	65	11.1	4.426	28.85	4.1	6.5	2.59
CV	10.4	2.23	1.50	7.55	4.85	2.02	8.40	11.55	12.21
SE	24.1	0.22	0.25	0.22	0.06	0.14	0.09	0.17	0.08
CD	72.5	1.35	1.51	1.33	0.34	0.85	0.53	1.03	0.49
G.Mean	387	40	67	11.7	4.61	28.01	4.17	5.90	2.66

Cowpea- (RBD)

GC-3
GC-6
RC-101
PL-2
PL-5

Date of Sowing: 9/07/2023
No of genotypes: 5
No. of Replication: 4
Spacing: 60x15 cm
Plot Size: 4x3 m2

Cowpea



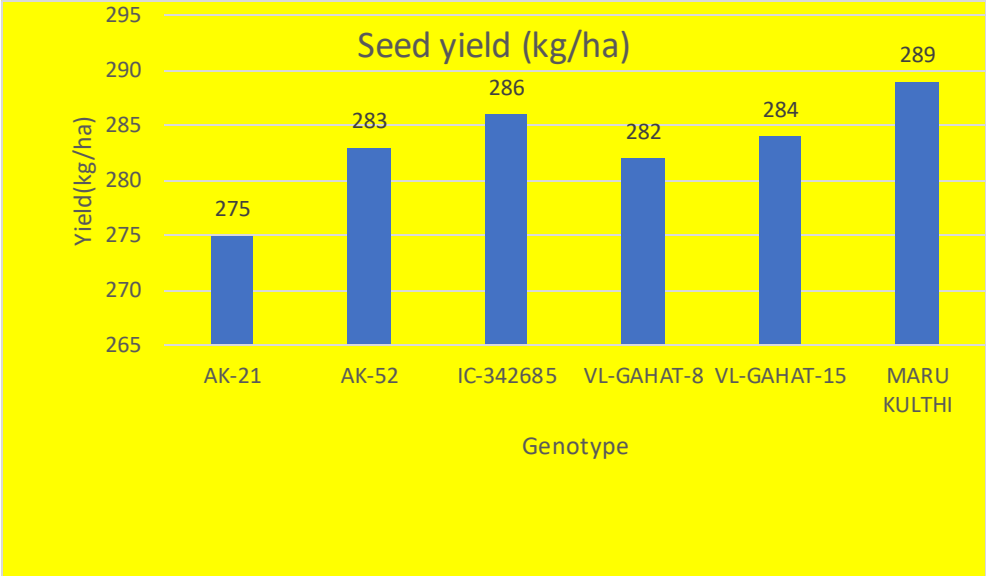
Entry	Seed yield (kg/ha)	DFF	DM	Pht	PBPP	NPPP	PL	NSPP	100 seed wt
GC-3	742	40	67	17.7	8.3	16.9	23.22	17.5	11.38
GC-6	508	40	63	20.0	8.5	17.45	22.66	15.4	10.90
RC-101	652	37	66	21.1	7.7	22	21.44	17.0	11.02
PL-2	502	42	66	14.7	8.3	14.35	21.74	16.9	11.54
PL-5	664	39	66	18.7	8.2	14.95	23.86	17.3	12.24
CV	19.28	3.42	2.04	13.9	2.89	18.79	8.93	3.90	12.54
SE	70.97	0.68	0.67	1.28	0.12	1.61	0.25	0.33	0.36
CD	218.68	2.08	2.06	3.94	0.36	4.96	0.78	1.01	2.21

Horsegram- (RBD)

AK-21
AK-52
IC-342685
VL-Gahat-8
VL Gahat-15
Maru Kulthi

Date of Sowing: 9/07/2023
No of genotypes: 6
No. of Replication: 4
Spacing: 60x15 cm
Plot Size: 4x3 m2

HORSEGRAM



Entry	Seed yield (kg/ha)	DFF	DM	Pht	PBPP	NPPP	PL	NSSP	100 seed wt
AK-21	275	50	119	33.1	13.19	31.3	3.2	5.2	3.9
AK-52	283	49	110	33.9	13.69	37.1	3.4	5.3	3.9
IC-342685	286	52	108	33.3	13.50	32.0	3.4	5.6	3.9
VL-GAHAT-8	282	51	113	34.3	13.69	33.4	3.3	5.4	4.0
VL-GAHAT-15	284	53	113	33.0	13.00	32.9	3.3	5.4	4.0
MARU KULTHI	289	50	114	33.6	13.75	34.9	3.2	5.6	3.9
CV	2.7	5.19	4.26	2.43	5.90	8.85	6.03	16.40	4.09
SE	4.6	1.32	2.40	0.41	0.40	1.49	0.10	0.44	0.08
CD	14	4	7	1.2	1.20	4.48	0.30	1.34	0.24
G Mean	281	51	113.00	33.54	13.47	34.00	3.29	5.4	3.90

IC-0623062

IC-0623063

IC-0623069

IC-0623075

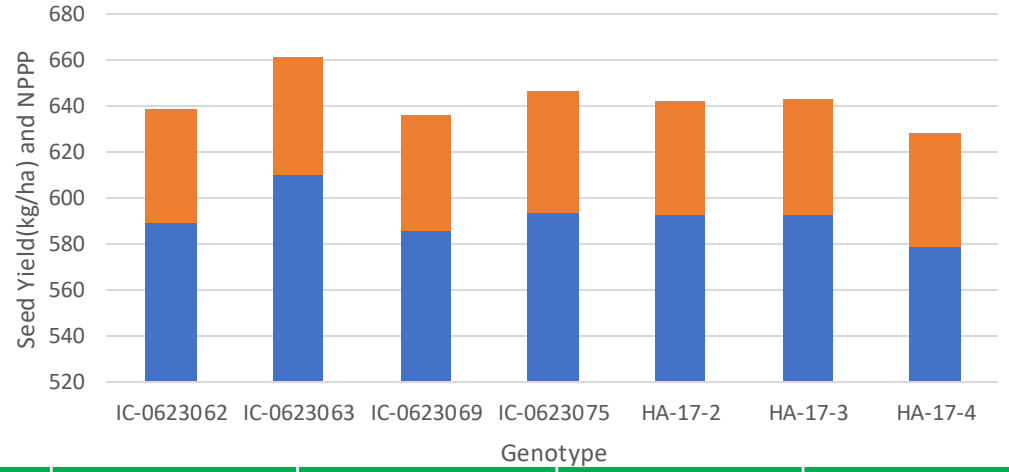
HA-17-2

HA-17-3

Dolichos- (RBD)

Date of Sowing: 9/07/2023
No of genotypes: 7
No. of Replication: 3
Spacing: 90x60 cm
Plot Size: 4x3 m2

DOLICHOS



Genotype	SY(kg/ha)	DFF	DM	Pht	PBPP	NPPP	PL	NSPP	100 seed wt
IC-0623062	589	42	64	104.8	5.45	49.9	13.0	4.4	24.7
IC-0623063	610	43	64	105.3	6.15	51.45	12.9	4.5	24.8
IC-0623069	586	43	65	105.6	6.15	50	12.9	4.4	25.2
IC-0623075	594	43	66	106.9	5.85	52.7	12.7	4.55	25.2
HA-17-2	593	43	66	107.2	5.55	49.45	12.4	4.45	25.1
HA-17-3	593	43	65	107.3	5.35	50.65	12.8	4.55	25.2
HA-17-4	579	44	64.75	105.13	5.35	49.50	13.03	4.3	25.02
CV	3.4	2.09	1.19	2.80	11.25	2.62	4.13	4.85	1.31
SE	11.9	0.45	0.40	1.49	0.66	0.66	0.26	0.11	0.16
CD	35.9	1	1	4.5	2.00	1.99	0.80	0.33	0.49
G Mean	592	43		106.00	5.69		12.82	4.45	25.04

ARSS, Sumerpur

Mean Values of major yield contributing characters of Horsegram

Genotype	DFF	DM	Pht	NBPP	NSPP	NPPP	SY(Kg/ha)
VL GAHAT -15	46	87	78.56	8.78	5.89	48.2	345
CRHG - 4	72	100	57.33	8.33	5.89	41.2	384
IC-344181	75	111	70.56	6.11	5.44	62.7	265
AK-52	54	85	77.56	9.44	4.89	53.6	500
IC-342685	71	105	80.67	12.33	5.22	69.4	401
AK-21	49	86	61.22	7.33	7.00	39.8	318
MARU KULTHI	54	82	82.00	12.33	5.00	101	451
VL GAHAT -8	68	117	87.78	12.11	5.56	42.2	335
CV	1.77	1.40	2.31	5.20	8.61	3.09	3.04
SeM	0.63	0.78	0.99	0.29	0.28	1.02	7.90
CD	1.90	2.36	3.02	0.87	0.85	3.10	23.98
GM	61.00	97.00	74.00	10.00	6.00	57	450

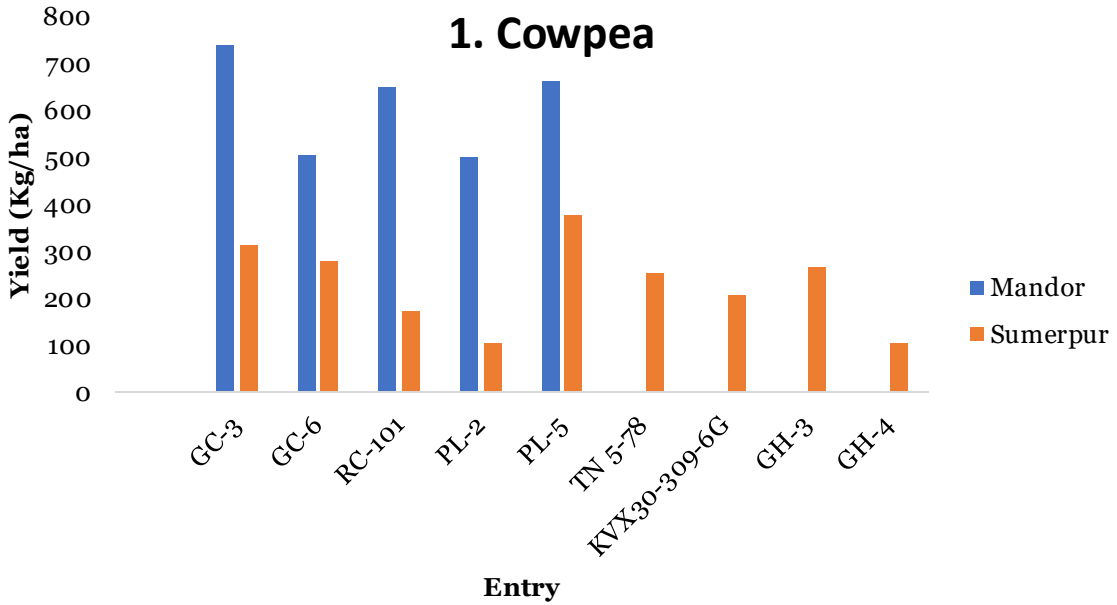
Mean Values of major yield contributing characters of Cowpea

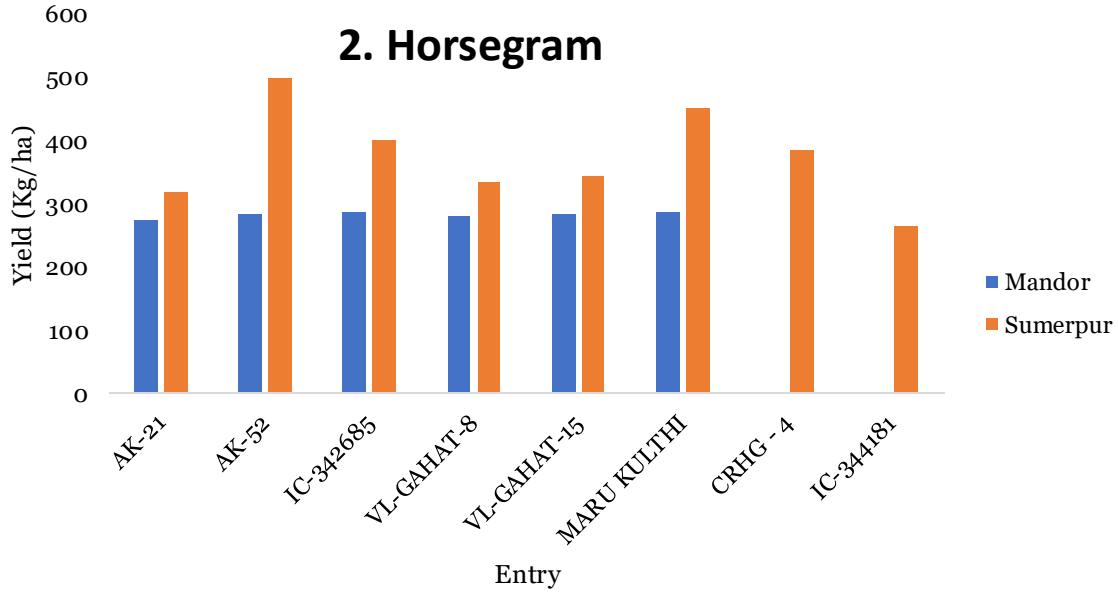
Genotype	DFF	DM	Pht	NBPP	NPPP	NSPP	Seed Yield (Kg/ha)
GC-3	48	77	52	5	12	11	313
GC-6	46	77	55	4	14	9	282
PL-2	47	79	52	4	10	12	107
PL-5	53	83	53	4	10	11	378
RC-101	47	78	57	4	13	12	172
TN 5-78	43	75	47	3	8	10	253
KVX 30-309-6G	45	76	50	3	10	12	210
GH-3	46	76	51	3	11	12	268
GH-4	48	79	52	3	9	11	104
CV	4.64	3.99	6.31	11.739	13.21	6.47	11.79
SeM	1.26	1.79	1.90	0.242	0.82	0.41	15.78
CD	3.77	5.36	5.69	0.725	2.45	1.23	47.30
GM	47	98	52	4	11	11	232

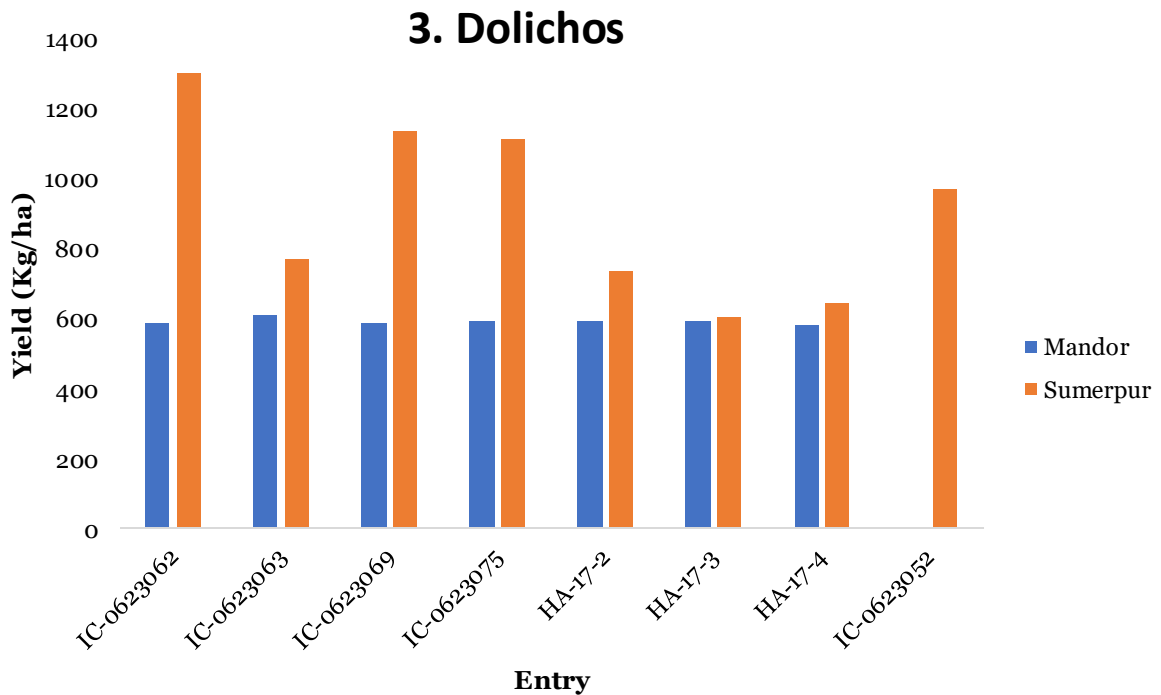
Mean Values of major yield contributing characters of Dolichos

Genotype	DFF	DM	Pht	NBPP	NPPP	NSPP	Seed Yield (Kg/ha)
IC-0623052	89	141	95	4	139	4	970
IC-0623062	73	149	110	4	161	4	1303
IC-0623063	91	141	98	5	109	3	770
IC-0623069	96	151	88	3	122	4	1134
IC-0623075	85	138	98	4	161	4	1113
HA-17-2	90	141	95	5	142	4	734
HA-17-3	71	135	90	4	126	5	602
HA-17-4	70	139	81	4	88	4	642
CV	2.05	1.01	1.90	14.01	2.64	12.05	10.20
SeM	0.99	0.83	1.03	0.33	2.00	0.28	64.20
CD	2.99	2.51	3.14	1.00	6.06	0.84	194.73
GM	83	142	94	4	131	4	1090

Yield comparison between Mandor and Sumerpur







Trials of Dolichos and Horsegram at ARSS, Sumerpur

Mungbean- AVRDC Material (ABD)

GM-1(CH)
AVMU-21268
AVMU-1676
GM-7(CH)
AVMU-21280
AVMU-1677(CH)
AVMU-21276
AVMU-21256
AVMU-21259
AVMU-1679
AVMU-1678
AVMU-1683
AVMU-21273
AVMU-16101
AVMU-21263
AVMU-21279
AVMU-21281
AVMU-21284
AVMU-21282
AVMU-21289
AVMU-21291

Date of Sowing: 13/07/2023
No of genotypes: 21+3
No. of block:3
Spacing: 60x15 cm
Plot Size: 4x3 m2

The following genotypes are performing superior than the check entries

GM-4(CH) (361kg/ha), GM-7(CH)(331 kg/ha), AVMU-1677 (725 kg/ha), AVMU-21263(526 kg/ha) AVMU-21291 (633 kg/ha), AVMU-21280 (747 kg/ha), AVMU-21256 (797 kg/ha), AVMU-21259 (533 kg/ha)

Cowpea (ABD)

GC-6(CH)
RC-19
IT99-K573-1-1
CBD-119
PL-2(CH)
PL-5
TZA-3160
RC-101
GC-3(CH)
UAM-09-1055-6
NARO COWPEA-2
TN 5787
RC 101
FUAMPA-1
TZA-256
IT99-K573-1-1
PL-1
PL-4
GH-3
UAM-09-1055-6
NARO COWPEA-6
ZAM ZAM(GH4)
SEEOW IT
SEEOW-5T
NARO COWPEA-5
NIZ WE
NARO COWPEA-4

Date of Sowing: 13/07/2023
No of genotypes: 24+3
No of block:4
Spacing: 60x15 cm
Plot Size: 4x3 m2

The following genotypes are performing superior than the check entries RC 101(807 kg/ha), IT99-K573-1-1(956 kg/ha),GH-3(959 kg/ha), NARO COWPEA-6(777 kg/ha), SECOW 1T(765 kg/ha)

Identification of Resistant Lines

Mungbean

Out of 38 genotypes, seven lines viz. AVMU 21273, AVMU 1677, AVMU 21279, AVMU 21287, AVMU 21268 and AVMU 21259 were found as resistant against Cercospora leaf spot and anthracnose disease under field condition

Mungbean(RBD)

- Total ten varieties of mungbean were evaluated for their performance and out of which two varieties Keshwanand Mung 1 and Keshwanand mung 2 were found as resistant against Cercospora leaf spot disease and seven varieties mere moderately resistant.
- For anthracnose four varieties viz., GM 6, IPM-99-125, MH-421 and MH-2-15 were found as resistant under field condition.
- For root rot, all varieties were highly resistant and resistant

Mothbean

- Out of nine varieties, one variety RMO 435 was found as resistant and remaining were found as moderately resistant against Cercospora leaf spot disease and one variety RMO 40 was found as susceptible.
- For anthracnose, three varieties (RMO 225, CZM-2 and RMB-25) were found as resistant and remaining were found as susceptible.

Cowpea

- Out of **ten** varieties, one variety was found as highly resistant and remaining were under resistant category against Cercospora leaf spot disease under field condition (UAM09-1055-6)

Dolichos bean

- Out of twelve varieties/lines one line HA-10-2 was found as highly resistant against blight and leaf spot diseases.
- Two varieties were found as moderately resistant (IC-0623062 and IC-0623088) and remaining were under resistant category for blight and other foliar diseases.

CONCLUSION AND WAY FORWARD

- ✓Superior accessions have been identified from each crop on the basis of primary field observations and disease/insect resistance, will be used for future breeding activity
- ✓The material has been shared with the breeder of AICRP(MULLaRP) for trait based breeding for the climate resilient varietal development
- ✓The material of different crops will be stored in the MTS (Midterm storage) facility
- ✓The materials of AVRDC will be stored and utilized for the student research purposes and material development
- ✓The data generated will used for research article writing and catalogue preparation.

Thank You