ANNUAL PROGRAM

OF

RESEARCH WORK

KAHRIF 2016-17

VEGETABLE RESEARCH INSTITUTE

FAISALABAD

1. MUSKMELON *(Cucumis melo)*	
1. TITLE	**DEVELOPMENT OF HYBRIDS IN MUSKMELON**
OBJECTIVE	Hybrid seed production in muskmelon
RESEARCH WORKERS	Kaiser Latif Cheema Riaz Ahmad Kainth Muhammad Najeebullah
LOCATION	VRI, Faisalabad.
DURATION /TREATMENTS	2017 VRIM-9 × VRIM-10 and VRIM-10 × VRIM-9.
METHODOLOGY	Above selected inbred lines will be sown during 2nd fortnight of November 2016, keeping plant to plant and row to row distance of 60 cm and 300 cm, respectively, under plastic tunnel to enhance temperature. During first week of March, 2017 the tunnel will be covered with nylon net to make isolation chamber to avoid pollinators. Female flowers will be crossed with respective male parent manually. Furthermore all genotypes will be selfed/sibed to get at least one mature fruit in each genotype. Selfed fruits as well as F_1 fruits will be harvested for next year evaluation.
PREVIOUS YEAR'S RESULTS	Twenty fruits were selfed and hybrid has been sown for evaluation in trial under plastic along with adaptability.
2. TITLE	**ADAPTABILTY TRIALS OF MUSKMELON VARIETIES/ HYBRIDS UNDER LOW PLASTIC TUNNEL**
OBJECTIVE	To evaluate muskmelon varieties / hybrids under low plastic tunnel
RESEARCH WORKERS	Kaiser Latif Cheema Raiz Ahmad Kainth Muhammad Najeebullah
LOCATION	VRI, Faisalabad
DURATION /TREATMENTS	2017 Genotypes = 5 (Super one, White Hero Acs, VRIM-9 × VRIM-10, VRIM-10 × VRIM-9 and T-96)
METHODOLOGY	The seed of five varieties / hybrid will be sown during 2nd fortnight of 2016 under low plastic tunnels. Sowing will be done on both sides of three meter wide raised beds with plant-to-plant distance of 45 cm. Layout of the experiment will be adopted according to the RCBD with three replications. The plot size will be kept as 7m x 3m. Data regarding Brix % and yield will be recorded.

PREVIOUS YEAR'S RESULTS

Rank	Varieties	Yield (t/ha)	TSS (%)
1	T-96	10.36a	13
2	VRIM-10	7.80b	12
3	KHSM-1	7.78b	9
4	HSM0.53B	7.19bc	9
5	GOLDEN QUEEN	6.15cd	10
6	G-HSM-1 F_1	6.11cd	9
7	SWEET BEAUTY	5.09d	11
8	SNOW WHTE F_1	0e	
	LSD 0.05	3.00	

3. TITLE — **ADAPTABILTY TRIAL OF MUSKMELON VARIETIES / HYBRIDS IN OPEN FIELD**

OBJECTIVE — To evaluate adaptability of variety / hybrid in open field.

RESEARCH WORKERS — Kaiser Latif Cheema
Raiz Ahmad Kainth
Muhammad Najeebullah

LOCATION — VRI, Faisalabad

DURATION /TREATMENTS — 2017
Genotypes =33 (Two sets)

METHODOLOGY — The seed of 33 varieties / hybrid will be sown during 2nd fortnight of February 2017. The sowing will be done on raised beds with plant to plant and row to row spacing of 45 and 300 cm, respectively, on both sides of the beds. Layout will be done according to the RCBD with three replications. The plot size will be kept as 7 m × 3 m. At maturity, data regarding Brix % and yield will be recorded.

PREVIOUS YEAR'S RESULTS

S. No.	Varieties	Yield (t/ha)	TSS (%)
1	Isabeel F_1	9.52a	9
2	Badsha F_1	9.34ab	7
3	**T-96**	9.22ab	14
4	NSC-7 F_1	9.12ab	13
5	Sweety F_1	8.61ab	9

6	Star-1-F_1	8.31ab	7
7	Rchana, F_1	7.74abc	12
8	HSM062A	7.73abc	9
9	Honey-7 F_1	5.57abc	10
10	Sweat 010	7.46abc	11
11	Honey -15- F_1	7.32abc	6
12	HSM-051A	7.22bc	13
13	Honey plus F_1	7.19bc	13
14	**VRIM-10**	5.64cd	13
15	NSC-1	5.54cd	9
16	Ye-68-11	3.40d	10
LSD 0.05		5.40	

4. TITLE	**PRE-BASIC SEED PRODUCTION OF MUSKMELON VARIETIES**
OBJECTIVE	To maintain the purity of varieties.
RESEARCH WORKERS	Kaiser Latif Cheema Raiz Ahmad Kainth Muhammad Najeebullah
LOCATION	VRI, Faisalabad
DURATION /TREATMENTS	2017 Varieties = Two i.e. T-96 and Ravi
METHODOLOGY	Pre-basic seed of both varieties will be sown in isolation during 1st fortnight of March 2017 on both sides of 300 cm wide beds keeping plant-to-plant distance of 45 cm. All off-type and diseased plants will be roughed before flowering and later stages of crop growth. At maturity, fruits will be harvested and seed of true to type fruits keeping in view of brix % will be collected and stored after drying.
PREVIOUS YEAR'S RESULTS	80 true to type fruits of each variety (T-96 & Ravi) were selected
5. TITLE	**MAINTENANCE OF OPEN POLLINATED MUSKMELON GENOTYPES**
OBJECTIVE	To maintain O.P. Genotypes
RESEARCH WORKERS	Kaiser Latif Cheema Raiz Ahmad Kainth Muhammad Najeebullah

LOCATION	VRI, Faisalabad
DURATION /TREATMENTS	2017 Varieties = Four i.e. No.3., No.12., Green Flesh & ST-96
METHODOLOGY	Four elite genotypes were sown in plot size of 7 × 3 m on both sides of 3 meter wide beds with plant to plant spacing of 45 cm in isolation on March 2017. Diseased and undesirable plants were rouged out and remaining plants in each genotype were allowed to random mate. At maturity desirable fruits were harvested and selection was made on the basis of quality traits. Seed of selected fruits was collected for further selection cycle. Characteristics of the selected fruits of four lines are mentioned below in table.
PREVIOUS YEAR'S RESULTS	

Line Name	Rind color	Fruit Shape	Stripes type	Flesh color	Flesh Texture	Weight Range (gm)	Brix % (TSS)
NO.3	**Yellow**	**oblate**	**No stripes**	**White**	**Soft**	**400-500**	**13**
NO.12	**Yellow**	**-do-**	**No stripes**	**White**	**Soft**	**700-800**	**12**
Green Flesh	**Green**	**-do-**	**No stripes**	**Light green**	**Mediu m hard**	**600-800**	**14**
ST-96	**Green with stripes**	**-do-**	**Stripes**	**Light orange**	**Mediu m hard**	**200-300**	**16**

2. CHILLIES (*Capsicum annuum*)

1. TITLE	**COLLECTION AND MAINTENANCE OF CHILIES GERMPLASM**
OBJECTIVE	To maintain the germplasm and to utilize the desirable genotypes in the breeding program
RESEARCH WORKER (S)	Muneeb Munawar Dr. Muhammad Ikram Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS/	Genotypes =163
METHODOLOGY	Nursery sowing = 20.10.2016 Transplanting =18.12.2016 (under Isolation chambers) Layout = Observational rows Plant Spacing = 75 × 45 cm Two to three true to type plants will be selected from each line and seed will be harvested separately for further use.
PREVIOUS YEAR'S RESULTS	80 genotypes based on plant structure and fruit shape were selfed under cloth tunnel during 2015-16.

S. No.	Character	Range

			Minimum	**Maximum**
	1	Plant height (cm)	20	120
	2	Fruit Length (cm)	2	15
	3	Fruit diameter (cm)	0.5	3.0
	4	Growth habit	Dwarf to tall	
	5	Fruit position	Upward to downward	
	6	Fruit color	Light green to dark purple	
	7	Fruit bitterness	Less bitter to bitter	
	8	Fruit behavior	Solitary to bunch	

2. TITLE	**FILIAL GENERATION STUDIES TO DEVELOP OPEN POLLINATED VARIETIES IN CHILLIES**
OBJECTIVE:	To select the desirable material for the evolution of open pollinated varieties
RESEARCH WORKER (S)	Muneeb Munawar Dr. Muhammad Ikram Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS/	**F_1** Generation = 30 Crosses **F_2** = 25 Pops. **F_3** = 16 single plant progenies of 14 crosses **F_4** = 18 single plant progenies of 15 crosses **F_5** = 13 single plant progenies of 04 crosses **F_6** = 7 single plant progenies of 03 crosses **F_7** = 10 single plant progenies of 03 crosses
METHODOLOGY	Nursery sowing = 18.11.2016 Transplanting = 2nd week of February Layout = Observational rows Plant Spacing = 75 x 45 cm Single plant selections will be accomplished in each progeny on the basis of plant structure and fruit shape, size, and color. Selected plants will be selfed manually.
PREVIOUS YEAR'S RESULTS	**F_1** Generation = 30 Crosses **F_2** = 16 Pops. **F_3** = 28 single plant progenies of 14 crosses **F_4** = 37 single plant progenies of 15 crosses **F_5** = 18 single plant progenies of 04 crosses **F_6** = 13 single plant progenies of 03 crosses
3. TITLE	**NUYT TRIAL FOR HOT PEPPER**
OBJECTIVE	To evaluate the performance of varieties / hybrids received from NARC.
RESEARCH WORKER (S)	Muneeb Munawar Dr. Muhammad Ikram Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	2016-17

TREATMENTS/	Varieties/Hybrids received from NARC
METHODOLOGY	Nursery sowing = 07.12.2016 Transplanting = 2nd fortnight of February (open field) Layout = RCBD Plot size = 4 m × 0.75 m Replications = 03 Spacing = 45 cm Data will be recorded for Days to 50% flowering, Days to 1st green fruit picking, fruits /Plant, Fruit weight/plant, single fruit weight, fruit shape, fruit length, fruit width and fresh red fruit yield.
PREVIOUS YEAR'S RESULTS	**NUYT trial results for 2014-15**

Sr. #	Genotype	Fruit Weight (gm)	Fruit Length (cm)	No. of Fruit / Plot	Fruit Shape	Fruit Color	Yield (T/ha)
1	**CH15103**	2.40	6.05	1278	Narrow Triangular	Green	6.81^{D}
2	**CH15111**	2.48	7.80	1220	-do-	-do-	6.80^{D}
3	**CH15116**	3.78	8.10	1805	-do-	-do-	15.42^{A}
4	**CH15123**	3.02	6.65	1763	-do-	-do-	12.30^{B}
5	**CH15130**	4.39	7.85	1623	Horse shaped	-do-	16.05^{A}
6	**CH15133**	2.05	7.60	1790	Narrow Triangular	-do-	8.28^{D}
7	**CH15138**	2.35	5.90	1443	-do-	-do-	7.52^{D}
8	**CH15140**	4.35	8.15	1720	-do-	-do-	16.80^{A}
9	**CH15144**	3.34	7.90	520	Triangular	-do-	3.27^{E}
10	**CH15148**	3.29	8.00	1396	Narrow Triangular	-do-	10.09^{C}
11	**P-6 (Standard)**	4.19	8.10	1260	Horse shaped	-do-	11.53BC
	LSD (5%)						**1.7**

4. TITLE	**ADAPTABILITY TRIAL FOR HOT PEPPER UNDER PLASTIC TUNNEL**
OBJECTIVE	To check the adaptability of exotic varieties / hybrids received from various private companies
RESEARCH WORKER (S)	Muneeb Munawar Dr. Muhammad Ikram Muhammad Najeebullah

LOCATION	Faisalabad
DURATION	2016-17
TREATMENTS/	Varieties/Hybrids = 6 viz; THP-033, THP-034, Uttal, SV9736HM, Revival and P-6 (standard)
METHODOLOGY	Nursery sowing = 27.10.2016 Transplanting = 02.01.2017 Layout = RCBD Plot size = 4 m x 1.5 m (tunnel) Replications = 03 Spacing = 60 cm
PREVIOUS YEAR'S RESULTS	**Performance of Hot pepper varieties/hybrids under tunnel in Kharif 2015-16**

Rank	**Entry**	**Yield (T/Ha)**
1	Fengaio No. 02	34.80
2	Super Hot F_1	33.86
3	BSS-410	30.30
4	SV7864HM	30.06
5	P-6 (Check)	27.33
6	Green King	27.31
7	Big Daddy	27.13
8	Big Red AB	27.00
9	Glory F_1	26.95
10	Patyala F_1	26.92
11	Super Sky AB	26.87
12	Uttal	26.74
13	Omega	24.73
14	Hot Shot F_1	23.10
15	Super King F_1	23.07
16	Galaxy 2 F_1	22.80
17	Hot-708	22.77
18	Revival	21.83
19	BPVCL 14-1	20.99
20	Silky Red F_1	20.95
21	Tejal	20.39
22	Amber F_1	18.48
23	HP-033	17.12
24	Angel F_1	16.27
25	PH-275	14.88
26	G-HHP-01	14.38
LSD (α = 5%)		**1.79**

5. TITLE	**ADAPTABILITY TRIAL FOR HOT PEPPER IN OPEN FIELD**
OBJECTIVE	To check the adaptability of exotic varieties / hybrids
RESEARCH WORKER (S)	Muneeb Munawar

	Dr. Muhammad Ikram Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	2016-17
TREATMENTS/	**Varieties/Hybrids:** 46 viz; 1130F1, 1240F1, Fire cracker, Fire volcano, Sierra, Numex, Smarty F_1, Simrun, CBS-214, GSL-119, N-Xiangla 2, Xiangla-712, Super hot, Super King, Patyala F_1, Green King, Hot-409, MDS-5748, PE-102 F_1, Sundari, Skycross F_1, 007 F_1, PE-404 F_1, PE-101, German, Skyway, Rainbow, Galaxy 2, Green Gold, Hot pepper 01, Hot pepper 02, Asian Hot F_1, Skyline 2, Sky red, Laser F_1, Indu F_1, No. 1031, HP-264 F_1, SVHA-1182, HP-1449, High Sky F_1, Olvya F_1, Disney, Kent, P-6 and High Fly 2.
METHODOLOGY	Nursery sowing = November-December, 2016 Transplanting = 2nd fortnight of February Layout = RCBD Plot size = 4 m x 0.75 m Replications = 03 Spacing = 60 cm Data will be recorded for fresh green fruit yield.
PREVIOUS YEAR'S RESULTS	**Performance of hot pepper in open field (Set-II)**

Rank	Entry	Yield t/ha
1	Quick Mirch	22.65
2	Star Mirch	19.76
3	Laal Mirch	19.22
4	GSL 119	19.02
5	KHHP-081A	18.94
6	1130 F_1	18.23
7	Skyway	17.25
8	Asian Hot F_1	17.02
9	Tez Mirch	16.10
10	GSL 111	14.77
11	P-6 (Check)	14.58
12	Advanta 5017 F_1	14.38
13	Advanta 512 F_1	13.98
14	Chief Mirch	13.95
15	EW 1208 F_1	13.77
16	Sky Red	13.77
17	Skyline 2	13.62
18	German	13.53
19	CBS 1292	13.50
20	THP-033	13.15
21	Nun 2074 F_1	12.31
22	KP 1305 F_1	12.09

23	KHHP-083 C	11.94
24	Rainbow	11.07
25	CBS 129	10.81
26	KHHP-082 B	8.65
27	Green Fire	8.33
28	7-AP	8.32
29	Thong Khao 20	7.19
LSD (α = 5%)		**1.1**

Performance of hot pepper in open field (Set-III)

Rank	Entry	Yield t/ha
1	PE-101 F_1	6.26
2	P-6 (Check)	6.21
3	007 F_1	5.95
4	PE-404 F_1	5.69
5	PE-102 F_1	5.55
6	Sky Cross F_1	5.51
7	Sky Shot F_1	5.42
8	KHHP-085 E	4.89
9	Red Gold	4.82
10	Sundari F_1	4.78
11	Xiangla-712	3.78
12	Rexy F_1	3.40
13	N-Xiangla-2	3.17
LSD (α = 5%)		**0.72**

3. SWEET PEPPER (*Capsicum annuum*)

1. TITLE	**ADAPTABILITY TRIAL ON SWEET PEPPER VARIETIES/ HYBRIDS**
OBJECTIVE	To study the adaptability and performance of exotic varieties/ hybrids.
RESEARCH WORKER (S)	Muneeb Munawar Dr. Muhammad Ikram M. Najeebullah
LOCATION	Faisalabad
DURATION	2016-17
TREATMENTS/	**For Tunnel** = 2 TSP-041 and Aristotle (Standard). **Open Field** = 2 viz; Freedom, Savio, MDS-9026, Orbit, Capisto and Aristotle
METHODOLOGY	Nursery sowing = 27.10.2016 (tunnel) 24-11-2016 (Open field) Transplanting = 02.01.2017 (tunnel) 2nd fortnight of February (Open field) Layout = RCBD Plot size = 4 x 1.5 m (tunnel) & 4 x 0.75 m (open) Replications = 03

	Spacing = 60 cm Data will be recorded for fresh green fruit yield.
PREVIOUS YEAR'S RESULTS	Varieties / Hybrids = 05

SET I (Tunnel)

Rank	Entry	Yield t/ha
1	Asha F_1	33.26
2	Kanzo Commander Shimla	29.79
3	SP-41	29.67
4	SP-42	27.75
5	Kanzo Jumbo Shimla	27.54
6	Freedom F_1	26.28
7	Capino F_1	23.60
8	Super Globe	22.05
LSD (α = 5%)		**2.06**

SET II (Open Field)

Rank	Entry	Yield t/ha
1	Savio	27.89
2	Coral F_1	27.75
3	TSP 041	26.66
4	Astra-2	25.36
5	Alina F_1	12.88
LSD (α = 5%)		**2.8**

4. CUCUMBER (*Cucumis sativus*)

1.	**MAINTENANCE OF CUCUMBER GERMPLASM**
OBJECTIVE	To maintain and select lines with desirable traits for use in hybridization programme
RESEARCH WORKER (S)	Muhammad. Muzaffar Raza Etlas Amin Dr. Muhammad Iqbal Muhammad Najeebullah
LOCATION	VRI, Faisalabad
DURATION	Continuous
TREATMENTS	Varieties = 03
METHODOLOGY	Sowing time = 1st week of March 2017 Plant to plant distance = 30 cm on both sides of 2.5 m wide beds The genotypes will be planted in a bed size of 6.0 × 2.5 m by keeping plant to plant distance of 30 cm. The genetic makeup of the open pollinated varieties will be maintained through sib-mating.

PREVIOUS YEAR'S RESULTS	Three genotypes were maintained through sib mating.
2. TITLE	**DEVELOPMENT OF INBRED LINES IN PARTHENOCARPIC CUCUMBER UNDER HIGH TUNNEL.**
OBJECTIVE	To develop parthenocarpic cucumber hybrid
RESEARCH WORKER (S)	Muhammad Muzaffar Raza Etlas Amin Dr. Muhammad Iqbal Muhammad Najeebullah
LOCATION	VRI, Faisalabad.
DURATION	Continuous
TREATMENTS	13 (F_2)
METHODOLOGY	Sowing time = 17-11- 2016 Plant to plant distance = 30 cm on both sides of 01 m wide beds under isolation chamber. When the plants will be at four to six leaves stage chemical will be sprayed at the apical meristem of the plants. Due to this, plants will change their flowering habit from gynoecious to monoecious. Then genotypes will be selfed to advance generation.
PREVIOUS YEAR'S RESULTS	13 hybrids were selfed to get F_2 generation
3. TITLE	**ADAPTABILIT TRIAL OF EXOTIC CUCUMBER HYBRIDS/VARIETIES UNDER WALK IN TUNNELS.**
OBJECTIVE	To check the adaptability of varieties/ hybrids received from different seed companies.
RESEARCH WORKER (S)	Muhammad Muzaffar Raza Etlas Amin Dr. Muhammad Iqbal Muhammad Najeebullah
LOCATION	VRI, Faisalabad.
DURATION	Continuous
TREATMENTS	Varieties/ Hybrids = 24
METHODOLOGY	Sowing time = November 21, 2016 Design = RCB Replications = 3 Plot size = 1.5 × 12 m Plant to plant distance = 30 cm on both sides of 2 feet wide beds Data regarding number of fruits per plant and fruit yield will be recorded

PREVIOUS YEAR'S RESULTS	The results are tabulated below			
	Varieties	**Germination %**	**No. of fruits / plant**	**Fruit yield (t/ ha)**
	Termessos F_1	77.5	10.7	60.8
	GSL-550	83.3	9.6	57.6
	CBS-552	75.0	10.4	53.9
	G-HC-2 F_1	83.3	9.7	52.5
	SV-8047-CB	69.2	11.5	51.6
	Saeed F_1 (Check)	**81.7**	**9.7**	**50.6**
	Babilla F_1	75.0	7.9	35.8
	Poyraz F_1	83.3	5.2	26.0
	Sahin F_1	75.0	5.1	25.6
	Neddal F_1	68.3	6.4	23.7
	ICI-716	71.7	3.8	16.5
	ICI-717	67.5	4.3	15.0
	LSD 5%	**14.2**	**2.1**	**17.0**
4. TITLE	**ADAPTABILITY TRIAL OF EXOTIC CUCUMBER HYBRIDS/VARIETIES IN OPEN FIELD**			
OBJECTIVE	To check the adaptability of varieties/ hybrids received from different seed companies.			
RESEARCH WORKER (S)	M. Muzaffar Raza Etlas Amin Dr. Muhammad Iqbal Muhammad Najeebullah			
LOCATION	VRI, Faisalabad.			

DURATION	Continuous
TREATMENTS	Varieties/ Hybrids = 36 (Two sets)
METHODOLOGY	Sowing time = Last week of February, 2017 Design = RCB Replications = 3 Plot size = 6.0 × 2.5 m Plant to plant distance = 30 cm on both sides of 2.5 m wide beds The trials will be comprised of 3 sets along with one local check. Data regarding number of fruits per plant and fruit yield will be recorded
PREVIOUS YEAR'S RESULTS	The results are tabulated below **Table 1: Performance of Cucumber hybrids/varieties in an adaptability trial** **(Set-I) at Vegetable Research Institute, Faisalabad during Kharif 2016.**

Varieties	**Germination %**	**No. of fruits/ plant**	**Fruit yield (t/ha)**
Local (Check)	75.6	4.6	17.1
Badshah	77.8	8.7	16.5
Messi F_1	76.7	7.6	15.3
Florus F_1	76.7	5.6	10.2
Hoosier F_1	82.2	6.4	8.9
CU-971	81.1	5.1	8.6
Raneem F_1	80.0	5.5	7.7
MDS- INX-732	67.8	6.7	7.4
Hady F_1	77.8	5.8	7.2
MDS-13 CU - 5757	75.6	5.1	7.0

MDS-12 CU-5513	60.0	6.5	6.6	
LSD 5%	**15.8**	**2.3**	**4.5**	

Table 2: Performance of Cucumber hybrids/varieties in an adaptability trial

(Set-II) at Vegetable Research Institute, Faisalabad during Kharif 2016.

Varieties	**Germination %**	**No. of fruits / plant**	**Fruit yield (t/ha)**
Advanta F_1-702	87.8	7.5	20.0
Advanta F_1-701	87.8	7.1	18.5
Local (Check)	**78.9**	**4.9**	**18.0**
Saram F_1	87.8	7.5	17.8
Asian-I	82.2	7.0	14.6
Dinar F_1	92.2	6.2	14.0
Liza	93.3	6.8	13.5
CU-4562	86.7	6.7	13.2
Alpha Prime	85.6	6.9	12.9
Safaa	78.9	7.1	11.3
Thamin II	83.3	5.8	10.4
Jarrar F_1	83.3	5.9	8.5
LSD 5%	**12.4**	**2.1**	**5.5**

Table 3: Performance of Cucumber hybrids/varieties in an adaptability trial (Set-III) at Vegetable Research Institute, Faisalabad during Kharif 2016.

Varieties	Germination %	No. of fruits / plant	Fruit yield (t/ha)
Local (Check)	**77.8**	**5.0**	**15.4**
Karizma	74.4	3.9	11.6
Dania 730 F_1	84.4	4.4	8.3
Vella F_1	95.6	3.6	7.0
Spider F_1	91.1	4.5	6.9
Zoro F_1	86.7	4.7	6.9
Porto F_1	90.0	3.9	6.5
Tiger 990 F_1	88.9	3.7	6.3
Vareene F_1	87.8	3.6	6.3
Chaman F_1	85.6	3.1	4.2
Falcon F_1	86.7	2.7	3.9
Indus F_1	86.7	2.7	3.5
LSD 5%	**13.3**	**0.9**	**3.4**

5. TITLE **DEVELOPMENT OF OPEN POLLINATED VARIETY**

OBJECTIVE	To create maximum variability for the development of open pollinated variety.
RESEARCH WORKER (S)	M. Muzaffar Raza Etlas Amin Dr. Muhammad Iqbal Muhammad Najeebullah
LOCATION	VRI, Faisalabad.
DURATION	Continuous
TREATMENTS	10 lines/ varieties
METHODOLOGY	Sowing time = Last week of February, 2017 Plant to plant distance = 30 cm on both sides of 2.5 m wide beds Pollen of all lines having male flower will be collected and used for pollination of 10 lines with better fruits. Seed will be planted in isolation for the selection of desirable plants for further study. Seed of source population (developed previous year) will be planted on 10 marla. The plants in good appearance will be sibed. After recording observation of fruit and plants, desirable plants will be marked for ripening of sibbed fruits. At maturity sibbed fruits will be harvested for collection of seed for further evaluation.
PREVIOUS YEAR'S RESULTS	Seed of source population comprising of 2 different lines was harvested.

5. BITTER GOURD (*Momordica charantia*)

1. TITLE	**COLLECTION AND MAINTENANCE OF BITTER GOURD GERMPLASM**
OBJECTIVE	To collect and maintain the germplasm in order to preserve the genetic purity of the germplasm
RESEARCH WORKERS	Mudassar Iqbal Dr. Saeed Ahmad Shah Chishti Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Entries = 15
METHODOLOGY	Sowing Date = 1st week of March, 2017 Layout = Single row Bed Size = 6.0 m × 2.5 m Plant Spacing = 60 cm The genetic makeup of the open pollinated varieties will be maintained through sibbing.
PREVIOUS YEAR'S RESULTS	Fourteen (14) open pollinated varieties were maintained through sibbing.

S. No	Traits	Minimum	Maximum

		1.	**Fruit color**	Light Green	Dark green
		2	**Fruit surface**	Plane ridges	Spiny ridges
		2.	**Avg. Fruit weight (g)**	70.0 g	218.0 g
		3.	**Avg. Fruit length(cm)**	12.0 cm	29.0 cm

2. TITLE	**DEVELOPMENT OF INBRED LINES IN BITTER GOURD**
OBJECTIVE	To synthesis synthetic varieties in bitter gourd
RESEARCH WORKERS	Mudassar Iqbal Dr. Saeed Ahmad Shah Chishti Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	S_0 = 02 S_1 = 03 S_2 = 03 S_3 = 02 S_4 = 07 S_6 = 05 S_7 = 25 S_8 = 11 S_9 = 12
METHODOLOGY	Sowing Date = 1st week of March, 2017 Layout = Non-replicated Bed Size = 6.0 × 2.5 m Plant Spacing = 60 cm All genotypes in S_1 to S_9 generations will be sown in the field during 1st week of March. Flowers of selected plants of these genotypes will be selfed to advance the generations. Selfed fruits will be collected, separately along with characterization of all the selected plants and fruits.
PREVIOUS YEAR'S RESULTS	S_0 = 03 S_1 = 03 S_2 = 02 S_3 = 07 S_5 = 05 S_6 = 25 S_7 = 11 S_8 = 12 S_9 = 07
3. TITLE	**DEVELOPMENT OF SYNTHETIC VARIETY IN BITTER GOURD**

OBJECTIVE	To synthesis synthetic varieties in bitter gourd
RESEARCH WORKERS	Mudassar Iqbal Dr. Muhammad Iqbal Dr. Saeed Ahmad Shah Chishti Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Inbred lines: 7
METHODOLOGY	Sowing Date = 1st week of March, 2017 Layout = Non-replicated Bed Size = 5.0 × 2.5 m Plant Spacing = 60 cm All inbred lines will be sown in the field during 1st week of March along with an open pollinated tester variety. The inbred lines will be crossed with a common tester and the progeny will be evaluated in replicated trials for general combining ability of yield and yield contributing characters.
PREVIOUS YEAR'S RESULTS	New experiment
4. TITLE	**DEVELOPMENT OF BITTER GOURD (MEDIUM SIZED) VARIETY for OFF SEASON CULTIVATION**
OBJECTIVE	To develop high yielding and disease tolerant, medium sized Bitter gourd variety for prolonged availability of bitter gourd from August to December
RESEARCH WORKERS	Mudassar Iqbal Dr. Saeed Ahmad Shah Chishti Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	New experiment
TREATMENTS	Varieties/ hybrids = 05 Seed obtained from sib mating of varieties/Hybrids = 03
METHODOLOGY	Sowing Date = 1st week of June, 2017 Bed Size = 4.0 × 2 m Plant Spacing = 60cm Seed obtained from different resources will be sown to check their

	adaptation in off season of Bitter gourd
5. TITLE	**ADAPTABILITY EVALUATION OF BITTER GOURD VARIETIES FOR FEBRUARY-MARCH SOWING SEASON**
OBJECTIVE	To find out high yielding, early fruiting, and disease resistant/tolerant varieties
RESEARCH WORKERS	Mudassar Iqbal Dr. Saeed Ahmad Shah Chishti Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Varieties/ hybrids = 10 including check
METHODOLOGY	Sowing Date = 1st week of March, 2017 Layout = RCBD Replications = 3 Bed Size = 6.0 × 2.5 m Plant Spacing = 45 cm Data regarding disease incidence, early fruiting and yield will be recorded.
PREVIOUS YEAR'S RESULTS	Performance of different Bitter Gourd Varieties/Hybrids in Adaptability Trials during kharif, 2016.

Set-I

R. No.	Variety/Hybrid	Fruit Yield (T/ha)
1	**Black King (Check)**	**14.35**
2	Prime F_1	14.14
3	**Faisalabad long (Check)**	**13.42**
4	HBG-153B	12.04
10	Cross-888	7.55
11	HBG-154c	6.50
12	Advanta F_1 103	5.65
LSD (0.05)		3.13

R.No.	Variety/Hybrid	Fruit Yield (T/ha)
1	Ammara F_1	**18.59**
2	HBG-153B	18.19
3	**Faisalabad long (Check)**	**17.10**

Set-II	4	Heera F_1	16.36
	5	Hareem F_1	**16.04**
	6	NA-241	9.36
	LSD (0.05)		**3.51**

6. OKRA (*Abelmoschus esculentus*)

1. TITLE	**COLLECTION AND MAINTENANCE OF OKRA GERMPLASM**
OBJECTIVE	To maintain the germplasm and to utilize the desirable genotypes in the breeding programme
RESEARCH WORKERS	Dr. Akhtar Saeed Rashida Aslam Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Varieties / Lines = 41
METHODOLOGY	Sowing date = 22-02-2017 Plot Size = 7.0 × 1.5 m Spacing = 75 × 30 cm Ten flowers of each genotype of selected true to type plants will be selfed to maintain the genotypes.
PREVIOUS YEAR'S RESULTS	38 lines were maintained and 03 new accessions was collected for further study. These lines will be used in the future breeding programme.

S. No	Traits	Minimum	Maximum
1.	Days to 1st flower initiation	35	45
2.	Inter-nodal length (cm)	2.5	5.0
3.	Pod Length (cm)	13	18
4.	Pod Width (cm)	1.6	2.2
5.	Beak length (cm)	2.5	3.5

2. TITLE	**HYBRIDIZATION AND STUDY OF FILIAL GENERATIONS OF OKRA**
OBJECTIVE	To create genetic variability for the development of high yielding and disease resistant varieties
RESEARCH WORKERS	Dr. Akhtar Saeed Rashida Aslam Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	(i)-New Crosses between parents *viz*; **High yielding:** OK-1505, OK-1506, OK-1507, OK-1509 and OK-1510 **Disease tolerant:** OK-1401, China Red, OK-1313 and OK-1314 **(ii) F_1 = 10 Crosses** **(iii) F_2 = 12 Crosses** **(iv) F_3 = 05 Crosses**

	(v) F_4 = 12 Crosses
METHODOLOGY	**(i)** Above mentioned parents will be sown during last week of February in separate block to attempt fresh crosses. 8-10 flowers will be crossed in each combination. At maturity, crossed seed of all the crosses will be collected separately for further study in F_1 generation. **(ii)** In F_2, F_3 and F_4 seed of selected plants will be collected and bulked.
PREVIOUS YEAR'S RESULTS	The seed of 12 crosses in F_1, 05 crosses in F_2 and 12 crosses in F_3 were harvested in bulk.
3. TITLE	**ADAPTABILITY TRIAL IN OKRA**
OBJECTIVE	To check the adaptability of okra exotic varieties/hybrids
RESEARCH WORKERS	Dr. Akhtar Saeed Rashida Aslam Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Entries = 25 (two sets)
METHODOLOGY	Sowing date = 23-02-2017 Lay out = RCBD Replication = 3 Plot size = 7.0 ×1.5 m Row to Row = 75 cm Plant to Plant = 10 cm on both sides of 75 cm wide ridges. Entries will be sown along with one check variety Sabz Pari. Data regarding number of pickings and fresh fruit yield will be recorded.
PREVIOUS YEAR'S RESULTS	Performance of Okra varieties /Hybrids in Adaptability Trial during 2016.

Sr. No.	**Variety**	**Fresh fruit yield (t/ha)**
1.	Mahy-64	14.22
2.	Rohi F_1	14.03
3.	Mornee F_1	12.90
4.	Nayab	12.19
5.	KHO-1	11.59
6.	Guard Karishma	10.95
7.	OK-407	10.84
8.	Marvi AB	10.46

9.	Sureeli F_1	10.19
10.	Silky-460	10.07
11.	Sabz Pari	10.03
12.	Shabnum F_1	9.64
13.	Malka F_1	7.31
	LSD(0.05)	1.98

7. WATER MELON *(Citrullus lanatus* Mansf.*)*

1. TITLE	**DEVELOPMENT OF INBRED LINES IN WATER MELON.**
OBJECTIVE	To develop inbred lines for the development of hybrids/composite varieties.
RESEARCH WORKERS	Dr. Muhammad Sarwar Riaz Ahmad Kainth Muhammad Najeebullah
LOCATION	Faisalabad
DURATION /TREATMENTS	Continuous S_6 = Selfed seed of four lines S_0 = Selfed seed of six lines
METHODOLOGY	The seed of 4 S_6 and 6 S_0 progenies/lines will be sown in fruit to row fashion on 25-11-2016 on both sides of 3 meter wide beds keeping plant to plant distance of 60 cm under low plastic tunnel and net. 2-3 flowers on 3-4 selected plants in each bed will be selfed to get at least one mature fruit for generation advancement. At maturity, selfed seed of respective lines will be collected, separately along with characterization of the selected plants and fruits for next generation studies.
PREVIOUS YEAR'S RESULTS	Selfed seed of 4 S_6 and 6 S_0 lines were collected.
2. TITLE	**DEVELOPMENT OF OPEN POLLINATED VARITIES**
OBJECTIVE	To select high yielding and disease resistant plants/fruits to develop open pollinated varieties.

RESEARCH WORKERS	Dr. Muhammad Sarwar Riaz Ahmad Kainth Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Seed of two types of fruits (Green oblong and green round).
METHODOLOGY	Seed of From broad based population, two types of fruits were selected (Green oblong and green round) and maintained by sowing in isolation. These will be sown during 2end week of march 2017 in isolation on both sides of 3 meter wide beds, keeping plant to plant distance of 60 cm. Plants having desirable fruits on the basis of rind color, shape and TSS %age will be selected.
PREVIOUS YEAR'S RESULTS	Seed of selected plants/fruits from both groups (Green oblong and green round) was collected.
3. TITLE	**ADAPTABILITY TRIAL ON WATER MELON VARIETIES/ HYBRIDS.**
OBJECTIVE	To evaluate exotic varieties/hybrids of water melon
RESEARCH WORKERS	Dr. Muhammad Sarwar Riaz Ahmad Kainth Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Varieties/Hybrids = Varieties/Hybrids received from seed companies
METHODOLOGY	Sowing time = March, 2017 Plot Size = 7 m x 3 m Design = RCBD Replications = 3 Plant to plant distance = 60 cm.

	Sowing Method / = On both sides of 3 meter wide beds. Data regarding disease incidence and fruit yield will be recorded.
PREVIOUS YEAR'S RESULTS	Yield performance of various varieties/hybrids of watermelon during 2016

Set-I

Sr. No.	Variety / Hybrid	Yield (T/ha)
1	Shoulder	23.83
2	1250-F_1	21.72
3	Bpvw-14-1	20.99
4	Capsule-F_1	20.95
5	WM-1648	20.75
6	My Honey	20.47
7	Ayesh	20.43
8	Noor- F_1	20.16
9	Big Top ACS	19.76
10	**Sugar Baby**	**19.42**
11	Cobra	19.34
12	WM-483	18.87
13	Veer-F_1	18.78
14	WM-482	18.54
15	Super Star ACS	18.23
16	Laal Badshah	17.74

LSD 5%	**2.4**

Set-II

Sr. No.	**Variety / Hybrid Codes**	**Yield (T/ha)**
1	Advanta-1401	27.06
2	Advanta- F_1-1431	24.20
3	KHWM-063	23.90
4	Advanta- F1 -1445	23.59
5	Aswm-72-55	23.24
6	G-HWM-1	22.24
7	Advanta- F_1 -1436	22.19
8	Black Happy- F_1	21.71
9	**552-** F_1	21.55
10	HWM-271 A	21.26
11	Rocket- F_1	21.15
12	Turi- F_1	20.54
13	Sweet King	19.68
14	HWM-251 A	19.63

15	**Sugar Baby**	**19.23**
LSD 5%		**2.80**

Set-III

Sr. No.	**Variety / Hybrid Codes**	**Yield (T/ha)**
1	Red Star	25.71
2	Lusia	25.00
3	Nun-8674	24.44
4	Round-8	24.34
5	Black Tiger	24.05
6	Hitto- F_1	23.33
7	Vezel- F_1	22.86
8	Zinco- F_1	22.62
9	Ayesha	21.95
10	Mego-10	21.93
11	Puma- F_1	21.78
12	Carlos- F_1	21.44
13	Charlos- F_1	21.42
14	Jerry- F_1	19.64
15	**Sugar Baby**	**18.57**

LSD 5%	**2.50**

Set-IV

Sr. No.	Variety / Hybrid Codes	Yield (T/ha)
1	Vera- F_1	26.18
2	Haider- F_1	24.95
3	Red Tiger-59	24.44
4	Jamjuri-55	24.06
5	Superman- F_1	23.79
6	Dulice- F_1	23.71
7	Capton	23.24
8	Star-434- F_1	22.89
9	3550- F_1	22.52
10	WT-1604	22.18
11	WT-4001	21.91
12	WT-1606	21.86
13	WT-4002	21.79
14	Don- F_1	21.41
15	Doblin	21.23
16	**Sugar Baby**	**20.72**
17	Black Star	17.16
LSD 5%		**4.70**

8. BOTTLE GOURD (*Lagenaria siceraria*)

1. TITLE	**MAINTENANCE OF BOTTLE GOURD GERMPLAM**
OBJECTIVE	Maintenance of lines having desirable characteristics for further use in the breeding program.
RESEARCH WORKERS	Dr. Muhammad Iqbal Mudassar Iqbal Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Number of entries = 02 viz; Faisalabad Round and VRIBG-2
METHODOLOGY	Sowing time = Last week of February Plot Size = 7 × 4 m Spacing = 45 cm At the time of flowering, pollen of each line will be collected and flowers of respective line will be pollinated. Seed will be extracted from fruits, resulting from manual pollination.
PREVIOUS YEAR'S RESULTS	Two lines were maintained.

Sr. No.	Varieties	Fruit Shape
1	VRIBG 2	Long
2	Faisalabad Round	Round

2. TITLE	**DEVELOPMENT OF SOURCE POPULATION IN BOTTLE GOURD**
OBJECTIVE	To create genetic variability in bottle gourd
RESEARCH WORKERS	Dr. Muhammad Iqbal

<table>
<tr><td></td><td>Mudassar Iqbal
Muhammad Najeebullah</td></tr>
<tr><td>LOCATION</td><td>Faisalabad</td></tr>
<tr><td>DURATION</td><td>Continuous</td></tr>
<tr><td>TREATMENTS</td><td>Number of entries= = 04 varieties viz, Pride F_1, 4590 F_1, Diamond AB and Faisalabad Round (Varieties from adaptability trial)</td></tr>
<tr><td>METHODOLOGY</td><td>Sowing time = Last week of February
Plot Size = 7 × 4 m
Spacing = 45 cm.
At the time of flowering, pollen of different lines will collected and bulked and 10 flowers of each line will be pollinated. Seed will be extracted from successful fruits.</td></tr>
<tr><td>PREVIOUS YEAR'S RESULTS</td><td>Due to high temperature fruit setting was not successful.</td></tr>
<tr><td>3. TITLE</td><td>ADAPTABILITY TRIAL ON EXOTIC BOTTLE GOURD VARIETIES/ HYBRIDS</td></tr>
<tr><td>OBJECTIVE</td><td>To test the imported varieties/hybrids for their performance evaluation</td></tr>
<tr><td>RESEARCH WORKERS</td><td>Dr. Muhammad Iqbal
Kashif Nadeem
Muhammad Najeebullah</td></tr>
<tr><td>LOCATION</td><td>Faisalabad</td></tr>
<tr><td>DURATION</td><td>Continuous</td></tr>
<tr><td>TREATMENTS</td><td>Entries = 38 varieties provided by different seed companies along with standard varieties Faisalabad Round and VRIBG-2 (Long)</td></tr>
<tr><td>METHODOLOGY</td><td>Sowing time = Last week of February
Plot Size = 7 × 4 m
Design = RCBD
Replications = 3
Spacing = 45 cm. (on both sides)
Data will be recorded regarding fruit shape, number of fruits per plant and fruit yield.</td></tr>
<tr><td>PREVIOUS YEAR'S RESULTS</td><td>
<table>
<tr><th>Rank</th><th>Varieties/ Hybrid</th><th>Fruit Yield (T/ha)</th></tr>
<tr><td>1</td><td>Green Golu F_1</td><td>8.55</td></tr>
<tr><td>2</td><td>Pride-F_1</td><td>8.53</td></tr>
<tr><td>3</td><td>4590 - F_1</td><td>7.95</td></tr>
<tr><td>4</td><td>Faisalabad Round (Check)</td><td>7.77</td></tr>
<tr><td>23</td><td>Arya</td><td>3.43</td></tr>
</table>
</td></tr>
</table>

	LSD | **2.22**

9. BRINJAL (*Solanum melongena*)

1. TITLE	**MAINTENANCE OF BRINJAL GERMPLASM**
OBJECTIVE	To maintain and select lines with desirable traits for use in hybridization programme
RESEARCH WORKERS	Muhammad Muzaffar Raza Tahir Iqbal Shah Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Accessions = 06 (Dilnasheen, Bemisal, Nirala, VRIB-2013, White Round & White Long)
METHODOLOGY	Nursery sowing date = 1st week of January, 2017 Nursery Transplanting date = 2nd fortnight of March 2017 Plot size = 05 m × 2 m. Plant to plant distance = 50 cm Selfing will be done in selected plants of each accession
PREVIOUS YEAR'S RESULTS	06 accessions were maintained. The range of characteristics recorded is as under:

S. No.	Character	Range	
		Minimum	**Maximum**
1	Plant height (cm)	50	110
2	No. of Fruits/plant	7	18
3	Fruit weight (gm)	50	150
4	Growth habit	Erect, Semi erect & Spreading	
5	Leaf Shape	Long, Narrow & Broad	
6	Fruit colour	White, Purple & Black	
7	Fruit Shape	Round, Long & Oblong	

2. TITLE	**HYBRIDIZATION IN BRINJALS**
OBJECTIVE	To create genetic variability for the development of high yielding varieties having market acceptability
RESEARCH WORKERS	Muhammad Muzaffar Raza Tahir Iqbal Shah Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	F_2 of following 20 croses viz; VRIB-13 × Dil, Dil × VRIB-13,WER x Dil,VRIB-13 x WEL, Dil x WEL, Dil x WER, VRIB-13 x WER, WER × WEL, Choto × Dil, Choto × WER, Choto × 2013,

	Choto × Jhansi, WER × Choto, Choto × WEL, Jhansi × Choto, Jhansi × 2013, Jhansi × WER, Jhansi × Dil, Jhansi × Galine, Galine × Dil.
METHODOLOGY	Date of sowing (Nursery) = First week of January, 2017 Transplanting = 2nd fortnight of February, 2017 Spacing = 100 × 50 cm At the time of flowering, hybridization will be carried out manually to develop F_3 generation and seed will be collected at maturity
PREVIOUS YEAR'S RESULTS	F_2 Seed of 20 crosses viz; VRIB-13 × Dil, Dil × VRIB-13, WER × Dil, VRIB-13 × WEL, Dil × WEL, Dil × WER, VRIB-13 × WER, WER × WEL, Choto × Dil, Choto × WER, Choto × 2013, Choto × Jhansi, WER × Choto, Choto × WEL, Jhansi × Choto, Jhansi × 2013, Jhansi × WER, Jhansi × Dil, Jhansi × Galine, Galine × Dil were harvested
3. TITLE	**ADAPTABILITY TRIAL OF BRINJAL GENOTYPES**
OBJECTIVE	To test the adaptability of imported varieties/hybrids
RESEARCH WORKERS	Muhammad Muzaffar Raza Tahir Iqbal Shah Muhammad Najeeb Ullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Varieties/Hybrids = 12 viz; Black Badshah, G-HB-1, Cluster King, Advanta-303 F_1, Advanta-306 F_1, EP900, Kokila F_1, Jhansi F_1, TBR-01, TBR-02, VRIB-2013,(Bemisal & Dilnasheen Standard)
METHODOLOGY	Nursery sowing = 1st week of January, 2017 Transplanting = 2nd fortnight of March, 2017 Replications = 03 Design = RCBD Plot size = 5 m × 2 m. Spacing = 100 × 50 cm on raised beds. Data on fruit shape, fruit color and fruit yield will be recorded
PREVIOUS YEAR'S RESULTS	Performance of brinjal varieties during 2016

Sr. No.	Genotypes	Yield (T/ha)
1	KHBR.205E	14.66
2	KHBR.202B	13.89
3	Rani	12.66
4	**Dilnasheen (Check Round)**	11.42
5	Cluster King	11.37
6	Advanta 326 F_1	10.70
7	**Nirala (Check Long)**	10.24
8	Janak	8.76
9	Bemisal	8.72
10	Advanta 301	8.35
11	KHBR.206 F_1	8.01
12	Advanta 303 F_1	7.91
13	KHBR.201A	6.39
14	KHBR.204D	5.88
15	Sultan	5.27
16	GHB-1	5.19
17	WER(White Round)	5.10
18	Sundar	4.42
19	KHBR.203C	2.34
20	AB.377	1.78
LSD		**3.95**

10. SPONGE GOURD (*Luffa cylindrica*)	
1. TITLE	**COLLECTION AND MAINTENANCE OF SPONGE GOURD GERMPLASM**
OBJECTIVE	Maintenance of lines having desirable characteristics for further use in the breeding program.
RESEARCH WORKERS	Nusrat Parveen Dr. Akhter Saeed Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Entries = 13
METHODOLOGY	Sowing date = 1st week of March, 2017 Plot Size = 6 × 3.0 m Plant spacing = 50 cm (on both sides of 4 meter wide beds) Out of 13 entries, 10 belong to previous year's maintenance, while three new entries have been collected. These entries would be maintained through sib mating. Data on number of marketable fruit/plant, days to 1st flower, color, shape will be recorded.
PREVIOUS YEAR'S RESULTS	10 lines were maintained through sibbing.
2. TITLE	**DEVELOPMENT OF SOURCE POPULATION.**
OBJECTIVE	To develop high yielding and disease resistant OP.
RESEARCH WORKER (S)	Nusrat Parveen Dr. Akhter Saeed Muhammad Najeeullah
LOCATION	VRI, Faisalabad.
DURATION	Continuous
TREATMENTS	Development of new source population (14 diverse lines)
METHODOLOGY	Sowing time = First week of March, 2017 Plant to plant distance = 50 cm on both sides of 3 meter wide beds 10 seeds from each variety will be planted and at flowering pollen from each variety will be collected and bulked. Ten female flowers from each line will be pollinated from the bulked pollen. At maturity, ripened fruits will be picked and seed will be extracted and bulked for further studies.
PREVIOUS YEAR'S RESULTS	New experiment
3. TITLE	**DEVELOPMENT OF INBRED LINES IN SPONGE GOURD.**
OBJECTIVE	To develop inbred lines for the development of hybrids/composite/ synthetic varieties.
RESEARCH WORKERS	Nusrat Parveen Dr. Akhter Saeed Muhammad Najeebullah

LOCATION	Faisalabad
DURATION /TREATMENTS	Continuous S_0=4 S_2= Selfed seed of 5 lines S_3= Selfed seed of 4 line
METHODOLOGY	The seed of S_0, S_2 and S_3 will be sown during 1st week of March, 2017 on both sides of 3 m wide bed keeping plant to plant distance of 50 cm. 10 flowers on 3-4 selected plants in each line will be selfed to get at least one mature fruit for generation advancement. At maturity, selfed seed will be collected, separately for further studies.
PREVIOUS YEAR'S RESULTS	Selfed seed of nine lines was collected.
4. TITLE	**ADAPTABILITY TRIAL OF SPONGE/RIDGE GOURD VARIETIES / HYBRIDS**
OBJECTIVE	To check the adaptability of sponge gourd hybrids / varieties received from seed companies
RESEARCH WORKERS	Nusrat Parveen Dr. Akhtar Saeed Muhammad Najeebullah
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Varieties / hybrids will be supplied by the seed companies and local cultivar will be used as standard check.
METHODOLOGY	Sowing date = 1st week of March, 2017 Design = RCBD Replication = 03 Plot size = 3.0 × 6.0 m Spacing = 50 cm (on both sides of 3 meter wide beds) Data will be recorded regarding fruit shape, color and number of marketable fruits per plant, days to first female flower, fruit length, fruit diameter, days to first fruit harvest, fruit weight, marketable fruit yield and disease resistance.
PREVIOUS YEAR'S RESULTS	Performance of Sponge Gourd Varieties/Hybrids in Adaptability Trial during Kharif, 2017.

Rank	Variety/ Hybrid	Fruit Yield (t/ha)
1	Advanta F_1 1102	24.91
2	Advanta F_1 1101	18.02
3	ASSP-65-90	17.78
4	All Green F_1 NSC	17.70
5	Mira F_1 (Black)	17.55
6	Sarina F_1	16.20
7	All Green F_1 (Chia)	16.06
8	Kohinoor F_1	15.61
9	Lasani F_1	15.51
10	Kiran F_1	14.81
11	Star -555 F_1	14.74
12	White Pari AB	14.30
13	Green Pari AB	13.90
14	Local	13.12
15	Anmol F_1	10.98
LSD (0.05)		**3.46**

Rank	Variety/ Hybrid	Fruit Yield (t/ha)
1	Advanta F_1 1602	7.67
2	Mayuri F_1	18.02
3	Anmol F_1	17.78
4	Local	17.70
5	Mala F_1	17.55
6	Gagan F_1	16.20
7	Dargai F_1	16.06
8	Star-225 F_1	15.61
9	Advanta F_1 1601	15.51
10	Queen F_1	14.81
11	Karina F_1	14.74
12	Benazir 246 F_1	1.97
	LSD (0.05)	**1.62**

11. TINDA GOURD (Praec*itrullus fistulosus*)

1. TITLE	**COLLECTION AND MAINTENANCE OF TINDA GOURD GERMPLAM**
OBJECTIVE	To collect and maintain the germplasm for future use in breeding program.
RESEARCH WORKER (S)	Ghazanfar Hammad Riaz Ahmad Kainth

LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS/ METHODOLOGY	New collections = Suitable material from seed companies Variety maintained = Dilpasand Sowing time = 2nd fortnight of March, 2017 Bed Size = 7.0 × 2.50 m P × P = 40 cm The genetic makeup of the open pollinated varieties will be maintained through sib-mating.
PREVIOUS YEAR'S RESULTS	Variety Dilpasand was maintained in isolation.
2. TITLE	**EVALUATION OF TINDA GOURD ACCESSION FOR FURTHER HYBRIDIZATION PROGRAMME.**
OBJECTIVES	To evaluate the promising accessions for further inbred lines development and production of high yielding OPV varieties.
RESEARCH WORKER (S)	Ghazanfar Hammad Riaz Ahmad Kainth
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS/ METHODOLOGY	New Collection = Three accessions along with Dilpasand (Check) Sowing time = 2nd fortnight of March, 2017 Plot Size = 7.0 × 2.50 m Plant spacing = 40 cm The seed of promising accessions of the tinda gourd will be obtained for further hybridization programme. The superior plant to progenies will be grown in next season for further selection of superior plants.
PREVIOUS YEAR'S RESULTS	20 accessions were evaluated and superior plant selection had been

<table>
<tr><td></td><td>accomplished.</td></tr>
<tr><td>3. TITLE</td><td>ADAPTABILITY TRIAL OF TINDA GOURD</td></tr>
<tr><td>OBJECTIVE</td><td>To test the adaptability of exotic genotypes / hybrids of tinda gourd</td></tr>
<tr><td>RESEARCH WORKERS</td><td>Ghazanfar Hammad
Riaz Ahmad Kainth</td></tr>
<tr><td>LOCATION</td><td>Faisalabad</td></tr>
<tr><td>DURATION</td><td>Continuous</td></tr>
<tr><td>TREATMENTS</td><td>Genotypes/hybrids = 02 including Dilpasand as check</td></tr>
<tr><td>METHODOLOGY</td><td>Date of sowing = 2nd fortnight of March, 2017
Design = RCBD
Repeats = 03
Plot Size = 5.50 × 1.25 m
Plant spacing = 40 cm
Data regarding fruit yield were calculated to carry out statistical analysis.</td></tr>
<tr><td>PREVIOUS YEAR'S RESULTS</td><td>
<table>
<tr><th>Rank</th><th>Entry</th><th>Fruit Yield (T/Ha)</th></tr>
<tr><td>1</td><td>Sanwal</td><td>7.49</td></tr>
<tr><td>2</td><td>Dilpasand (Check)</td><td>6.41</td></tr>
<tr><td>3</td><td>Variety 808</td><td>4.90</td></tr>
<tr><td>4</td><td>B. Tinda</td><td>4.39</td></tr>
<tr><td colspan="2">LSD (0.05%)</td><td>0.72</td></tr>
</table>
</td></tr>
</table>

12. VEGETABLE MARROW (*Cucurbita pepo*)

1. TITLE	**COLLECTION AND MAINTENANCE OF VEGETABLE MARROW GERMPLASM**

OBJECTIVE	To evaluate the vegetable marrow germplasm and select the desirable lines for future use in breeding program.
RESEARCH WORKERS	Ghazanfar Hammad Riaz Ahmad Kainth
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	New collections = Suitable material from adaptability trial
METHODOLOGY	Date of sowing = 2nd fortnight of February, 2017 Design = Non-replicated Bed size = 5.50 × 1.25 m Plant spacing = 40 cm The genetic purity of the germplasm will be maintained through sib mating. Off-type and viral disease infected plants will be rouged out.
PREVIOUS YEAR'S RESULTS	Two genotypes maintained through sib mating during Kharif, 2016 .
2. TITLE	**DEVELOPMENT OF INBRED LINES IN VEGETABLE MARROW**
OBJECTIVE	Synthesis of high yielding round and pear shaped hybrids of vegetable marrow.
RESEARCH WORKERS	Ghazanfar Hammad Riaz Ahmad Kainth
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	S_0 seed = Suitable material from adaptability trial S_1 seed = 08 S_2 seed = 03 S_7 seed = 35
METHODOLOGY	Date of sowing = 2nd fortnight of February, 2017 Design = Non-replicated Bed size = 6.0 × 1.25 m Plant spacing = 45 cm The seed of these selfed generations will be planted for further selfing to enhance homozygosity
PREVIOUS YEAR'S RESULTS	S_0 seed = 08 S_1 seed = 03 S_6 seed = 35
3. TITLE	**ADAPTABILITY TRIAL OF VEGETABLE MARROW**
OBJECTIVE	To test the adaptability of exotic genotypes / hybrids of vegetable marrow.
RESEARCH WORKERS	Ghazanfar Hammad Riaz Ahmad Kainth
LOCATION	Faisalabad
DURATION	Continuous
TREATMENTS	Genotypes/hybrids= Suitable material from seed companies
METHODOLOGY	Date of sowing = 2nd fortnight of February, 2017. Design = RCBD Repeats = 03 Plot Size = 5.50 × 1.25 m

Plant spacing = 40 cm

Data regarding fruit yield were recorded to carry out statistical analysis.

PREVIOUS YEAR'S RESULTS

Performance of varieties/hybrids in adaptability trial Kharif 2016

Set-I

Rank	Genotypes	Fruit Yield (T/Ha)
1	Money Pani F_1	25.56
2	Green Star F_1	24.21
3	TSQ-221	23.4
4	Olper F_1	22.86
5	Oskar F_1	21.27
6	Safa F_1	20.91
7	King Ball F_1	20.67
8	Polka F_1	19.71
9	TSQ-223	17.91
10	Marina F_1	15.45
11	Emeraland F_1	14.79
12	Squash- Kamla F_1	14.40
13	Oval Star F_1	14.28
14	Asma F_1	13.71
15	Frozen F_1	12.51
16	**Pear shape (Check)**	**7.53**
LSD (0.05%)		**0.86**

Set-II

Rank	Genotypes	Fruit Yield (T/Ha)
1	Dollar	35.70
2	SQ- 35-52	30.84
3	Dallas F_1	30.15
4	Euro F_1	29.10
5	Scarla	26.55
6	Avila F_1	25.83
7	Clarita	22.62
8	PS- 719	22.14
9	RSQ- 6700	20.55
10	Commander	19.41
11	Founder Ball	18.60
12	Anita	17.40
13	SQ- 35-53	15.96
14	**Pear shape (Check)**	**7.50**
LSD (0.05%)		**0.99**

Set-III

Rank	Genotypes	Fruit Yield (T/Ha)
1	Squash-ICI-1701-F_1	17.19
2	Squash. Vari. Nizza	16.68
3	Summer Squash- SQ-No.1	14.79
4	Squash-ICI-1702-F_1	14.76
5	K-HSQ-1	14.67
6	Squash. Vari. Winters	13.68
7	Squash. Vari. Heat Master	13.23
8	Squash-ICI-1703-F_1	11.52
9	Squash-ICI-1704-F_1	11.46
10	Squash-HSQ- 2	11.46
11	Squash-ICI-1705-F_1	10.56
12	Squash-ICI-1706-F_1	9.78
13	**Pear shape (Check)**	**7.50**
14	Beauty 222 (Chapani Tindi)	5.49
15	Malika F_1	4.05
LSD (0.05%)		**0.31**

Set-1V

Rank	Genotypes	Fruit Yield (T/Ha)
1	Sitara F_1	20.19
2	Squash- Sultan F_1	19.86
3	Hybrid Squash- Amber AB-F_1	18.30
4	Squash.Green Ball F_1	17.49
5	Squash Sarah	16.68
6	Cavili-F_1	15.54
7	Squash- E-260	9.84
8	Squash Ilham F_1	8.97
9	Asian Ball F_1	8.94
10	Mishal-F_1	8.55
11	**Pear shape (Check)**	**7.62**
12	New Eskandrany H_1	1.95
13	Santa F_1	0.90
LSD (0.05%)		**0.38**

13. KITCHEN GARDENING	
2. TITLE	**POPULARIZATION OF KITCHEN GARDENING**
OBJECTIVES	To promote the Kitchen Gardening in the Urban and Peri-Urban areas of Punjab
RESEARCH WORKER (S)	Muhammad Sarwar Dr. Akhtar Saeed Muhammad Najeebullah
LOCATION	Seed kits preparation at VRI., Faisalabad Distribution throughout Punjab
DURATION	Continuous
TREATMENTS	Seed Kits of Summer vegetables = 70,000 Vegetables = 8 (Bitter gourd, Bottle gourd, Sponge gourd, Long melon, Cucumber , Okra, Vegetable marrow)
METHODOLOGY	Seed kits of summer vegetables will be prepared and will be distributed in the Punjab province through AARI Network, Extension Wing of Agriculture Department and other Government Departments & NGO's.
PREVIOUS YEAR'S RESULTS	Last year 70,000 Summer vegetables kits were prepared and sold among the Kitchen Gardeners through AARI Network, Extension Wing of Agriculture Department and other Government Departments & NGO's.