



Government of Pakistan
PBRR, Pakistan

Plant Breeders' Rights Registry

Plant Breeders' Rights Journal



Official Journal of Plant Breeders' Rights Registry, Pakistan

April 2024

PLANT BREEDERS' RIGHTS JOURNAL

An official journal

of

**Plant Breeders' Rights Registry
Ministry of National Food Security and Research
Government of Pakistan**

Plant Breeders' Rights Registry G-9/4,
Maive Area, Islamabad, Pakistan

CONTENTS

Sr. No.	TITLE	PAGE No.
1	Editorial	i
2	Cases for Opposition	1
3	News and Events	41

EDITORIAL



I welcome all readers of this edition of the Plant Breeders' Rights Journal. Being a new incumbent of the post of the Registrar of the plant Breeders' Rights Registry, I will try to improve the technical capacity and efficiency of the organization. The Registry is being digitized. A Management Information System (MIS) is under development for online receiving and processing of the the Plant Varietal Protection (PVP) applications. This will facilitate national as well as international applications with much better efficiency.

Coordination with allied departments like Federal Seed Certification and Registration Department (FSC&RD), Plant Genetic Resource Institute (PGRI), Intellectual Property Organization (IPO) of Pakistan, etc., will be improved for effective implantation of Plant Varietal Protection regime in the country. Efforts will also start to contact UPOV to explore possibility of Pakistan becoming member of this international forum.

Scope of crop species protectable in Pakistan will get significantly extended. This will make the Registry capable to facilitate R&D companies working in a wide range of crops. A digitized morphological and molecular database of existing plant varieties in Pakistan will be compiled for a ready reference to check the novelty of a new variety.

The Registry will have special focus on establishment of determination, collection and distribution mechanism of the Royalty received from business of propagating material of a protected variety. Moreover, the forum of Plant Variety Protection Advisory Committee (PVPAC) will be used to establish a well-integrated setup for control of infringement of the Plant Breeders' Rights.

It is hoped that coming days will see a significant improvement in PVP context, motivation in plant varietal research and business and availability of promising plant varieties in Pakistan. All suggestions for improvement received at www.pbrr.gov.pk are highly welcomed and will get due consideration.

Dr. Muhammad Naeem

CASES FOR OPPOSITION

1. Application No.: PBRR-Cot-13/21

Name of the applicant: Centre of Excellence in Molecular Biology, Lahore

Institute: Centre of Excellence in Molecular Biology, Lahore

Name of Breeder(s):

- i. Dr. Idrees Ahmad Nasir
- ii. Dr. Abdul Qayyum Rao

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: CKC-03

Crop: Cotton (*Gossypium hirsutum*)

Type of the variety: OPV

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity duration	Medium
Days to opening 50%	105
Seedling characteristics	
Seedling length	7.5 cm
Seedling colour	Green
Foliage spot	Absent
Plant characteristics	
Growth habit	Medium compact
Plant height (cm)	148
Plant shape	Conical
Fruiting branch type	Short
Monopodia attitude	Semi erect
Sympodia attitude	Semi erect

Nodes to 1st monopodia	0-11
Monopodia/plant	0-3
Sympodia/plant	30-41
Stem pigmentation	Medium
Stem tip hairiness	Medium
Bud gossypol	Normal
Leaf characteristics	
Foliage density	Intermediate
Leaf colour	Green
Leaf length	9.5 cm
Leaf width	10 cm
Petiole length	9 cm
Petiole anthocyanin	Present
Leaf attitude	Semi erect
Leaf type	Normal
Leaf appearance	Flat
Leaf nectaries	Present
Leaf hairiness	Medium
Flower characteristics	
Days to flowering 50%	60
Flowering duration	Medium
Flower size	Medium
Sepal pigmentation	Present
Petal spot	Absent
Nectaries	Present
Petal colour	Creamy
Anther colour	Creamy
Stamen density	Semi dense
Position of stigma	Exserted
Stigma exertion (mm)	3
Stigma height (mm)	15.7

Calyx size	Intermediate
Boll characteristics	
Boll bearing habit	Solitary
Boll shape	Round/Oval
Boll colour	Green
Boll size (boll width at maximum point)	Medium
Beak size	Medium
Boll length (cm)	3.8
Boll breadth (cm)	3
Boll broad at	Middle
Peduncle length	1.3 cm
Boll surface	Smooth
Gossypol	Normal
Bracteole length	Medium
Bracteole width	Medium
Bolls/plant	32-36
Boll opening	Open
Boll weight (g)	3
Seed characteristics	
Seed size	Medium
Seed shape	S.Orbi
Seed length (mm)	8.3
Seed width (mm)	4.8
Seed index (g)	7.8
Seed coat colour	D.Brown
Seed fuzz	Fuzzy
Fuzz colour	D.White
Fiber characteristics	
Fibre colour	White
Got/lint%	39.5
Staple length (mm)	27.5

Fineness (micronaire)	4.8
Fibre strength (tppsi)	29.1
Lint index (g)	6.5
Uniformity%	84.2
Fibre length group	Medium long

Opposition can be filed up to: 30-04-2024

2. Application No.: PBRR-Cot-14/21

Name of the applicant: Centre of Excellence in Molecular Biology, Lahore

Institute: Centre of Excellence in Molecular Biology, Lahore

Name of Breeder(s):

- i. Dr. Idrees Ahmad Nasir
- ii. Dr. Abdul Qayyum Rao

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: CKC-01

Crop: Cotton (*Gossypium hirsutum*)

Type of the variety: OPV

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity duration	Medium
Days to opening 50%	105
Seedling characteristics	
Seedling length (cm)	8.5
Seedling colour	Green
Foliage spot	Absent
Plant characteristics	
Growth habit	Compact

Plant height	157
Plant shape	Cylindrical
Fruiting branch type	Short
Monopodia attitude	Semi erect
Sympodia attitude	Semi erect
Nodes to 1st monopodia	0-8
Monopodia/plant	0-1
Sympodia/plant	23-26
Stem pigmentation	Medium
Stem tip hairiness	Medium
Bud gossypol	Normal
Leaf characteristics	
Foliage density	Intermediate
Leaf colour	Green
Leaf length (cm)	11.5
Leaf width (cm)	12
Petiole length (cm)	8
Petiole anthocyanin	Present
Leaf attitude	Horizontal
Leaf type	Normal
Leaf appearance	Flat
Leaf nectaries	Present
Leaf hairiness	Medium
Flower characteristics	
Days to flowering 50%	61
Flowering duration	Medium
Flower size	Medium
Sepal pigmentation	Present
Petal spot	Absent
Nectaries	Present
Petal colour	Creamy

Anther colour	Creamy
Stamen density	Semi dense
Position of stigma	Exserted
Stigma exertion (mm)	1.5
Stigma height (mm)	15
Calyx size	Intermediate
Boll characteristics	
Boll bearing habit	Solitary
Boll shape	Round
Boll colour	Green
Boll size (boll width at maximum point)	Medium
Beak size	Short/medium
Boll length (cm)	3.6
Boll breadth (cm)	2.87
Boll broad at	Middle
Peduncle length (cm)	1.4
Boll surface	Finely
Gossypol	Normal
Bracteole length	Medium
Bracteole width	Medium
Bolls/plant	28-34
Boll opening	Open
Boll weight (g)	3.2
Seed characteristics	
Seed size	Medium
Seed shape	S.obl.obovate
Seed length (mm)	8.8
Seed width (mm)	4.5
Seed index (g)	7.43
Seed coat colour	D. Brown
Seed fuzz	Fuzzy

Fuzz colour	D. white
Fiber characteristics	
Fibre colour	White
Got/lint%	40.44
Staple length (mm)	24.2
Fineness (micronaire)	5.4
Fibre strength (tppsi)	28.5
Lint index (g)	5.2
Uniformity%	79.5
Fibre length group	Medium

Opposition can be filed up to: 30-04-2024

3. Application No.: PBRR-Cot-58/22

Name of the applicant: Centre of Excellence in Molecular Biology, Lahore

Institute: Centre of Excellence in Molecular Biology, Lahore

Name of Breeder(s):

- i. Dr. Idrees Ahmad Nasir
- ii. Dr. Abdul Qayyum Rao

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: CKC-06

Crop: Cotton (*Gossypium hirsutum* L.)

Type of the variety: OPV

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity duration	Medium
Days to opening 50%	91
Seedling characteristics	

Seedling length (cm)	9
Seedling colour	Light Green
Foliage spot	Absent
Plant characteristics	
Growth habit	Medium compact
Plant height (cm)	148
Plant shape	Conical
Fruiting branch type	Normal
Monopodia attitude	Semi erect
Sympodia attitude	Semi erect
Nodes to ist monopodia	4
Monopodia/plant	2
Sympodia/plant	23
Stem pigmentation	Medium
Stem tip hairiness	Medium
Bud gossypol	Normal
Leaf characteristics	
Foliage density	Intermediate
Leaf colour	Green
Leaf length (cm)	10
Leaf width (cm)	14
Petiole length (cm)	9
Petiole anthocyanin	Present
Leaf attitude	Horizontal
Leaf type	Normal
Leaf appearance	Flat
Leaf nectaries	Present
Leaf hairiness	Sparse
Flower characteristics	
Days to flowering 50%	57
Flowering duration	Medium

Flower size	Medium
Sepal pigmentation	Absent
Petal spot	Absent
Nectaries	Present
Petal colour	Creamy
Anther colour	Creamy
Stamen density	Dense
Position of stigma	Exerted
Stigma exertion (mm)	2
Stigma height (mm)	13
Calyx size	Intermediate
Boll characteristics	
Boll bearing habit	Solitary
Boll shape	Round
Boll colour	Green
Boll size (boll width at maximum point)	Medium
Beak size	Short
Boll length (cm)	3.6
Boll breadth (cm)	2.8
Boll broad at	Middle
Peduncle length (cm)	1.5
Boll surface	Smooth
Gossypol	Normal
Bracteole length	Medium
Bracteole width	Medium
Bolls/plant	27-30
Boll opening	Open
Boll weight (g)	3.5
Seed characteristics	
Seed size	Medium
Seed shape	Oblong.S.Orbi.

Seed length (mm)	7.5
Seed width (mm)	4.5
Seed index (g)	8.68
Seed coat colour	Brown
Seed fuzz	Fuzzy
Fuzz colour	D. White
Fiber characteristics	
Fibre colour	White
Got/lint %	42
Staple length (mm)	28.3
Fineness (micronaire)	4.6
Fibre strength (tppsi)	29
Lint index (g)	6.5
Uniformity %	86.7
Fibre length group	Long

Opposition can be filed up to: 30-04-2024

4. Application No.: PBRR-Maize-66/22

Name of the applicant: Mohsin Raza

Institute: Rawal Seed Corporation, Sadiqabad

Name of Breeder(s):

Mohsin Raza

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: RS-8104

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Sowing time	Long
Seedling characteristics	
Seedling length (cm)	5
Coleoptile's anthocyanin	Medium
First leaf colour	Other
First leaf tip	Pointed
First leaf length (mm)	65
First leaf width (mm)	30
Plant characteristics for Hybrid and open Pollinated varieties only	
Plant length up to flag leaf	Long
Stem characteristics	
Stem length (cm)	200-210
Internodal length (cm)	15
Internodal diameter (cm)	3
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
Leaf characteristics	
Leaf angle between blade and stem (on leaf just above upper ear)	Wide
Leaf attitude of blade (on leaf just above upper ear)	Semi drooping
Leaf width of blade (leaf of upper ear)	Broad
Tassel characteristics	
50% tassel emergence (days)	90-95
50% tassel emergence (days)	Late
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present
Angle between main axis and lateral branches	Wide
Attitude of lateral branches (in lower third of tassel)	Curved

Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Present
Density of spikelets (in middle third of tassel)	Dense
Tassel angle between main axis and lateral branches	Wide
Tassel length (cm)	40
Tassel stalk length (cm)	45
Exertion above flag leaf (cm)	5
No. of lateral branches	18-20
Lateral branches density	Dense
Flower characteristics	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Creamy
Pollen color	Yellow
Glume color	Purple
Ear characteristics	
50% silk emergence(days)	93-98
Silk color	Green
Insertion height (cm)	110-115
Peduncle length (cm)	4
Ear leaf extensions	Absent
Ear husk length	Medium
No. of husk blades	6
Ear shape	Conico Cylindrical
Ear length (cm)	29
Ear diameter (cm)	4
Seed rows/ear	16
Seed/row	48
Seed row arrangement	Straight
No. of ears/plant	1-2
Cob color	White

Seed characteristics	
Seed color	Yellow
Seed tip color	White
Color of sides	Yellow
Seed shape	Toothed
Seed length (mm)	11.5
Seed width (mm)	7.5
Seed thickness (mm)	4.2
Seed type	Semi dent
Seed wax	Absent
Seed size	Bold
Seed weight/ear (g)	146
1000 seed weight (g)	288
Grain. Cob ratio%	85
Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Present
Environmental adaptability:	
Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to salinity	Medium
Tolerance to acid soil	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to: 30-04-2024

5. Application No.: PBRR-Maize-67/22

Name of the applicant: Mohsin Raza

Institute: Rawal Seed Corporation, Sadiqbqad

Name of Breeder(s):

Mohsin Raza

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: 9067

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity duration	Medium
Sowing time	Mid July to end August
Seedling characteristics	
Coleoptile's anthocyanin	Medium
First leaf colour	Green
First leaf tip	Pointed
First leaf length (mm)	30
First leaf width (mm)	5
Plant characteristics for Hybrid and open Pollinated varieties only	
Plant length up to flag leaf	Medium
Stem characteristics	
Stem length (cm)	210
Internodal length (cm)	15
Internodal diameter (cm)	10
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
Leaf characteristics	
Leaf angle between blade and stem (on leaf just above upper ear)	Small
Leaf attitude of blade (on leaf just above upper ear)	Stright

Leaf width of blade (leaf of upper ear)	Broad
Tassel characteristics	
50% tassel emergence (days)	50-60
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present
Angle between main axis and lateral branches	Narrow
Attitude of lateral branches (in lower third of tassel)	Straight
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Present
Density of spikelets (in middle third of tassel)	Dense
Tassel angle between main axis and lateral branches	Narrow
Tassel length (cm)	48
Exertion above flag leaf (cm)	39
No. of lateral branches	8-9
Lateral branches density	Semi dense
Flower characteristics	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Creamy
Pollen color	Yellow
Glume color	Purple
Ear characteristics	
50% silk emergence(days)	58-62
Insertion height (cm)	80-90
Peduncle length (cm)	7-8
Ear leaf extensions	Absent
Ear husk length	28
No. of husk blades	8
Ear length (cm)	24-26
Ear diameter (cm)	20

Seed rows/ear	16
Seed/row	40-45
Seed row arrangement	Straight
No. of ears/plant	1
Cob color	White
Seed characteristics	
Seed color	Yellow
Seed tip color	White
Color of sides	Yellow
Seed length (mm)	5
Seed width (mm)	3.5
Seed thickness (mm)	1.25
Seed type	Semi flint
Seed wax	Absent
Seed size	Medium
Seed weight/ear (g)	140
Grain. Cob ratio	87%
Seed sweetness	Absent
Seed waxiness	Absent
Environmental adaptability:	
Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to salinity	Medium
Tolerance to acid soil	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to: 30-04-2024

6. Application No.: PBRR-Maize-77/23

Name of the applicant: Petal Seed Company

Institute: Petal Seed Company

Name of Breeder(s):

- i. Muhammad Ishfaq
- ii. Muhammad Mushtaq

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: CS-230

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Sowing time	Autumn
Seedling characteristics	
Seedling length (cm)	1.3
Coleoptile's anthocyanin	Present
First leaf colour	Green
First leaf tip	Obtuse
First leaf length (mm)	3.6
First leaf width (mm)	1.1
Plant characteristics for hybrid and open pollinated varieties only	
Plant length up to flag leaf	Medium
Stem characteristics	
Stem length (cm)	198.12
Internodal length (cm)	17.78
Internodal diameter (cm)	2.2

Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
Leaf characteristics	
Leaf angle between blade and stem (on leaf just above upper ear)	Small
Leaf attitude of blade (on leaf just above upper ear)	Semi drooping
Leaf width of blade (leaf of upper ear)	7.62
Tassel characteristics	
50% tassel emergence (days)	54
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Absent
Angle between main axis and lateral branches	Narrow
Attitude of lateral branches (in lower third of tassel)	Curved
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Absent
Density of spikelets (in middle third of tassel)	Semi dense
Tassel angle between main axis and lateral branches	Narrow
Tassel length (cm)	33.02
Tassel stalk length (cm)	12.7
Exertion above flag leaf (cm)	10.16
No. of lateral branches	10
Lateral branches density	Semi dense
Anther fertility	Normal
Pollen shading	Medium
Anther color	Yellowish
Pollen color	Yellow
Glume color	Green
50% silk emergence(days)	56
Peduncle length (cm)	10.1
Ear leafy extensions	Absent

Ear husk length	Medium
No. Of husk blades	5-8
Ear shape	Conico cylindrical
Ear length (cm)	12-15
Ear diameter (cm)	4.3
Seed rows/ear	12-14
Seed/row	30-40
Seed row arrangement	Straight
No. of ears/plant	1-2
Ear weight (g)	364
Cob color	White
Seed characteristics	
Seed color	White
Seed tip color	Whitish
Color of sides	Whitish
Seed shape	Indent
Seed size	Large
Seed weight/ear (g)	318
1000 seed weight (g)	450
Yeild/ha.(mt)	11

Opposition can be filed up to: 30-04-2024

7. Application No.: PBRR-Canola-82/23

Name of the applicant: Chief Scientist, ORI, Faisalabad

Institute: Oil Seeds Research Institute, Faisalabad

Name of Breeder(s):

- i. Tariq Mahmood, Principal Scientist, Oil Seeds Research Institute, Faisalabad
- ii. Hafiz Saad Bin Mustafa, Scientific Officer, Oil Seeds Research Institute, Faisalabad

- iii. Dr. Sundas Shahzad, Senior Scientist, Oil Seeds Research Institute, Faisalabad
- iv. Dr. Marium Hassan, Scientific Officer, Oil Seeds Research Institute, Faisalabad
- v. Huma Qamar, Scientific Officer, Oil Seeds Research Institute, Faisalabad
- vi. Dr. Ejaz ul Hassan, Scientific Officer, Oil Seeds Research Institute, Faisalabad
- vii. Muhammad Riaz, Chief Scientist, Oil Seeds Research Institute, Faisalabad

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: TM Canola

Crop: Canola (*Brassica napus* L.)

Type of the variety: OPV

Name of initial variety (in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity duration	Medium
Sowing time	October
Plant characteristics	
Plant height cm	Tall 165-188
Plant type	Determinate
Growth habit	Intermediate
Plant color	Green
Leaf characteristics	
Leaf color	Dark green
Leaf attitude	Open
Leaf length cm	Long 23-25
Leaf width cm	Broad 12-19
Petiole base	Deeply lobed
Petiole length cm	21-23

Leaf lobes	Present
No. Of lobes	Many
Dentations of margin	Lyrate
Leaf margin indent	Weak
Terminal segment	Large
Leaf hair	Absent
Leaf anthocyanin	Absent
Leaf attachment	Stalked
Stem characteristics	
Main shoot length	Long 110-122
Stem shape	Round
Stem thickness mm	15.5-16.1
Stem stiffness	Medium-stiff
Stem pith	Hollow
Ramification	High level
Flower characteristics	
Flowering duration	Medium
Petal color	Yellow
Petal length	Medium 1.3-1.5
Petal width	Medium 0.8
Anther dotting	Absent
Pod characteristics	
Pod shape	Intermediate
Pod attitude	Divaricated
Pod length mm	7.7-8.5
Pod width mm	0.5-0.6
Pod surface texture	Smooth-intermediate
Pedicle length (mm)	3.3-3.4
Beak shape	Conical
Beak length (mm)	1.2-1.4
Shattering	Medium

Seed characteristics	
Seed color	Dark brown
Seed size	Medium-bold
Reticulation	Absent
Seed erucic acid	Low
Seed glucosinolate	Low
Seed oil content	High

Opposition can be filed up to 30-04-2024

8. Application No.: PBRR-Sunflower-83/23

Name of the applicant: Chief Scientist, ORI, Faisalabad

Institute: Oilseed Research Institute, Faisalabad

Name of Breeder(s):

- i. Dr. Sajida Habib
- ii. Dr. Ejaz-ul-Hassan
- iii. Dr. Rizwana Qamar
- iv. Hafiz Saad Bin Mustafa
- v. Dr. Salsabeel
- vi. Muhammad Riaz

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Orisun-741

Crop: Sunflower (*Helianthus annuus* L.)

Type of the variety: Hybrid

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity days	Medium
Normal crop sowing season	Spring

Suitable for sowing	All sowing
Uniformity in maturity	Uniform
Seedling characteristics	
Seedling length cm (14 days)	9.6-10.8
Seedling anthocyanin	Sparse
Seedling color	Green
Hypocotyl anthocyanin	Absent
Size of cotyledon	Medium
Shape of cotyledon	Elliptical
Plant/ stem characteristics	
Main stem color at heading	Green
Growth point	Yellow green
Stem anthocyanin	Absent
Pubescence at the top 5 cm	Absent-weak
Stem pubescence length	Short
Stem stiffness	Intermediate
Stem diameter (at mid)	2.1-2.8 cm
Plant height at full flowering	195-203 cm
Plant height at full flowering	
Stem branching	Absent
Length of internode (in central third of stem)	Medium
Percent stalk breakage	1-2%
Type of root	Tap
Leaf characteristics	
Leaves/plant	23-28
Leaf color	Green
Leaf anthocyanin on margin of young leaves	Absent
Leaf attitude	Semi erect
Leaf surface	Smooth
Leaf pubescence	Sparse
Leaf pubescence length	Short

Leaf length	16.3-20.8 cm
Leaf width	16.8-21.5 cm
Leaf size	Large
Petiole length cm (at bottom)	13.4-17.6
Leaf petiole anthocyanin	Absent
Leaf angle between lower part of petiole stem	Medium
Leaf shape	Cordate
Leaf apex	Acuminate
Leaf base shape	Auriculate
Leaf auricles	Medium-large
Leaf margin	Dentate
Leaf margin indentation depth	Medium
Leaf margin indentation regularity	Irregular
Leaf margin serration (fineness)	Medium-coarse
Leaf venation	Reticulate
Leaf angle of lowest/ lateral veins	Acute
Leaf height of tip of the blade compared to insertion of petiole	Low-medium
Leaf habit of petiole	Semi erect
Leaf petiole pubescence	Medium
Leaf senescence	Late
Leaf glossiness	Absent
Leaf shape of cross section	Weakly concave
Number of leaves on main stem	26-32 high >25
Flower characteristics	
Days to flowering 50%	75-80
Bract tightness on bud	Intermediate
Flowering uniformity	Uniform
Ray floret density/ number	Dense
Ray floret shape	Broad ovate
Ray floret length	4.3-5.8 cm
Ray floret width	1.1-1.5 cm

Ray floret color	Yellow
Ray floret size	Large
Ray floret petal curling	Flat petal
Disc flower color	Yellow
Stigma color	Yellow
Disc flower anthocyanin of stigma	Absent
Disc flower production of pollen	Medium-good
Pollen color	Yellow
Extra floral nectaries	Absent
Head characteristics	
Bract length on bud	2.8-3.7 cm
Heads/ plant	Single
Head size/ diameter	Large >20 cm
Head shape of grain side	Strongly convex
Head shape uniformity	Uniform
Head depth	Medium
Head pubescence	Medium
Involucre length	Medium
Involucre width	Narrow
Involucre anthocyanin	Absent
Head bracts (on back)	Many
Bract shape	Rounded
Bract size	Large
Bract length of tip	Long
Bract green color of outside	Medium
Bract anthocyanin	Absent
Bract attitude in relation of head	Strongly embracing
Bract pubescence	Medium
Bract pubescence length	Short
Head attitude	Turned down with slightly curved stem
Head angle	180°

Threshability	Easy
Shattering	Low
Seed characteristics	
Seed shape	Narrow ovoid
Seed size	Medium-large
Seed length	8.8-9.4 mm
Seed width	4.3-5.4 mm
Seed thickness	3.2-3.4 mm
Seed main color	Black
Seed position of strips	Both
Seed spots/mottling on pericarp	Absent
Seed pericarp thickness	Medium
Seed cross section shape	Ovoid
Seed index (000) gms	44-52
Distinguishing characteristics	
More drought resistance, larger head size, higher oil content, long duration and yield at par with international check hybrid	

Opposition can be filed up to: 30-04-2024

9. Application No.: PBRR-Sunflower-84/23

Name of the applicant:
Faisalabad

Chief Scientist, ORI,

Institute:

Oil Seed Research Institute,
Faisalabad

Name of Breeder(s):

- i. Dr. Sajida Habib, Senior Scientist,
- ii. Dr. Rizwana Qamar, Scientific Officer
- iii. Hafiz Saad Bin Mustafa, Scientific Officer
- iv. Dr. Ejaz ul Hassan, Senior Scientist
- v. Muhammad Anwar, Scientific Officer
- vi. Muhammad Riaz, Chief Scientist

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of the variety: ORISUN-751

Crop: Sunflower (*Helianthus annuus* L.)

Type of the variety: Hybrid

Name of initial variety (in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity days	Medium-late
Normal crop sowing season	Spring
Suitable for sowing	All sowing
Uniformity in maturity	Uniform
Seedling characteristics	
Seedling length cm (14 days)	8.7-9.3
Seedling anthocyanin	Sparse
Seedling color	Green
Hypocotyl anthocyanin	Absent
Size of cotyledon	Medium
Shape of cotyledon	Oval
Plant/ stem characteristics	
Main stem color at heading	Green
Growth point	Yellow green
Stem anthocyanin	Absent
Pubescence at the top 5 cm	Medium-strong
Stem pubescence length	Short
Stem stiffness	Intermediate
Stem diameter (at mid)	2.7-3.3 cm
Plant height at full flowering	164-178 cm
Stem branching	Absent

Length of internode (in central third of stem)	Medium
Percent stalk breakage	1-2%
Type of root	Tap
Leaf characteristics	
Leaves/plant	28-34
Leaf color	Green
Leaf anthocyanin on margin of young leaves	Absent
Leaf attitude	Semi erect
Leaf surface	Smooth
Leaf pubescence	Sparse
Leaf pubescence length	Short
Leaf length	26.9-30.9 cm
Leaf width	23.7-28.9 cm
Leaf size	Large
Petiole length cm (at bottom)	14.7-19.7
Leaf petiole anthocyanin	Absent
Leaf angle between lower part of petiole stem	Large
Leaf shape	Cordate
Leaf apex	Acuminate
Leaf base shape	Auriculate
Leaf auricles	Large
Leaf margin	Dentate
Leaf margin indentation depth	Shallow
Leaf margin indentation regularity	Irregular
Leaf margin serration (fineness)	Coarse
Leaf venation	Reticulate
Leaf angle of lowest/ lateral veins	Obtuse
Leaf height of tip of the blade compared to insertion of petiole	Medium
Leaf habit of petiole	Horizontal
Leaf petiole pubescence	Medium
Leaf senescence	Late

Leaf glossiness	Absent
Leaf shape of cross section	Weakly concave
Number of leaves on main stem	32-34 high >25
Days to flowering 50%	80-85
Bract tightness on bud	Intermediate
Flowering uniformity	Uniform
Ray floret density/ number	Very dense
Ray floret shape	Broad ovate
Ray floret length cm	5.1-6.2
Ray floret width cm	1.9-2.2
Ray floret color	Yellow
Ray floret size	Large
Ray floret petal curling	Flat petal
Disc flower color	Yellow
Stigma color	Yellow
Disc flower anthocyanin of stigma	Absent
Disc flower production of pollen	Medium
Pollen color	Yellow
Extra floral nectaries	Absent
Head characteristics	
Bract length on bud	1.6-2.3 cm
Heads/ plant	Single
Head size/ diameter	Large >20 cm
Head shape of grain side	Strongly convex
Head shape uniformity	Uniform
Head depth	Medium
Head pubescence	Dense
Involucre length	Medium
Involucre width	Medium
Involucre anthocyanin	Absent
Head bracts (on back)	Many

Bract shape	Rounded
Bract size	Large
Bract length of tip	Medium-long
Bract green color of outside	Medium
Bract anthocyanin	Absent
Bract attitude in relation of head	Not embracing
Bract pubescence	Medium
Bract pubescence length	Short
Head attitude	Turned down with slightly curved stem
Head angle	180°
Threshability	Easy-moderate
Shattering	Low
Seed shape	Broad ovoid
Seed size	Medium-large
Seed length	9.7-11.3 mm
Seed width	5.3-6.1 mm
Seed thickness	3.3-4.1 mm
Seed main color	Black
Seed position of strips	Both
Seed spots/mottling on pericarp	Absent
Seed pericarp thickness	Medium
Seed cross section shape	Ovoid
Seed index (000) gms	52-58
Distinguishing characteristics	
More drought resistance, larger head size, higher oil content, long duration and yield and par with international check hybrid	

Opposition can be filed up to: 30-04-2024

10. Application No.: PBRR-Rice-96/23

Name of the applicant: Director, NIGAB, NARC, PARC

Institute: National Institute of Genomics and Advance Biotechnology

Name of Breeder(s):

- i. Dr. Ghulam Muhammad Ali, NIGAB
- ii. Dr. Zaheer Abbas, NIGAB
- iii. Dr. Muhammad Ramzan Khan, NIGAB
- iv. Dr. Kashif Naeem, NIGAB,
- v. Dr. Zhi-Kang Li, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
- vi. Dr. Jian-Long Xu, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: KM-52

Crop: Rice (*Oryza sativa* L.)

Type of the variety: OPV

Name of initial variety (in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling color	Light green
Coleoptile color	Colorless
Seedling length	14.2 cm
Leaf length	43 cm
Leaf length of blade	Medium
Leaf anthocyanin	Absent
Leaf width	1.3 cm
Leaf width	Medium
Leaf pubescence	Sparse
Leaf color	Green

Leaf sheath color	Green
Leaf senescence	Intermediate
Ligule color	Papery
Ligule length	2.3 cm
Ligule shape	2-cleft
Collar color	Pale green
Flag leaf attitude	Semi erect
Flag leaf length	36 cm
Flag leaf width	1.4 cm
Mature stem length	105 cm
Stem attitude	Semi erect
Stem thickness	0.35 cm
Stem stiffness	Semi stiff
Tillers/plant	11-14
Internode color	Light yellow
No. of nodes/ stem	3
Maturity straw color	Straw
Panicle length	27 cm
Panicle length	Medium
Panicle type	Compact
Spikelet density	Dense
Spikelets/panicle	180
Branches/ panicle	Moderate
Secondary Branches	Present
Intensity of secondary branches	Profuse
Attitude of Branches	Semi erect
Panicle exertion	Well exerted
Panicle curvature of main axis	Semi straight
Awning at maturity	Absent
Awn color at maturity	Absent
Shattering	Low

Threshability	Easy
Seed Awning	Absent
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Absent
Husk pubescence	Medium
Pubescence length	Short
Seed shape	Semi crescent
Seed length (mm)	10.1
Seed width (mm)	2.1
Seed thickness (mm)	1.5
Remarks	Crop was uniform

Opposition can be filed up to: 30-04-2024

11. Application No.: PBRR-Rice-97/23

Name of the applicant: Director, NIGAB, NARC, PARC

Institute: National Institute of Genomics and Advance Biotechnology

Name of Breeder(s):

- i. Dr. Ghulam Muhammad Ali, NIGAB
- ii. Dr. Zaheer Abbas, NIGAB
- iii. Dr. Kashif Naeem, NIGAB,
- iv. Dr. Zhi-Kang Li, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
- v. Dr. Jian-Long Xu, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: GM Ali-76

Crop: Rice (*Oryza sativa*)

Type of the variety: OPV

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling color	Light green
Coleoptile color	Colorless
Seedling length	6 cm
Leaf length	16 cm
Leaf length of blade	Medium
Leaf anthocyanin	Absent
Leaf width	1 cm
Leaf width	Medium
Leaf pubescence	Sparse
Leaf color	Green
Leaf sheath color	Green
Leaf senescence	Intermediate
Ligule color	Papery
Ligule length	2.28 cm
Ligule shape	2-cleft
Collar color	Pale green
Flag leaf attitude	Semi erect
Flag leaf length	15 cm
Flag leaf width	2 cm
Mature stem length	80 cm
Stem attitude	Semi erect
Stem thickness	0.32 cm
Stem stiffness	Semi stiff
Tillers/plant	10-13
Internode color	Light yellow
No. of nodes/ stem	4
Maturity straw color	Straw
Panicle length	24 cm
Panicle length	Long

Panicle type	Compact
Spikelet density	Semi dense
Spikelets/panicle	230
Branches/ panicle	Moderate
Secondary Branches	Present
Intensity of secondary branches	Moderate
Attitude of Branches	Semi erect
Panicle exertion	Mostly exerted
Panicle curvature of main axis	Drooping
Awning at maturity	Absent
Awn color at maturity	Absent
Shattering	Moderate
Threshability	Easy
Seed Awning	Absent
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Absent
Husk pubescence	Weak
Pubescence length	Short
Seed shape	Semi crescent
Seed length (mm)	10.1
Seed width (mm)	2
Seed thickness (mm)	1.4
Remarks	Crop was uniform

Opposition can be filed up to: 30-04-2024

12. Application No.: PBRR-Rice-98/23

Name of the applicant: Director, NIGAB, NARC, PARC

Institute: National Institute of Genomics and Advance Biotechnology

Name of Breeder(s):

i. Dr. Ghulam Muhammad Ali, NIGAB

- ii. Dr. Zaheer Abbas, NIGAB
- iii. Dr. Muhammad Ramzan Khan, NIGAB
- iv. Dr. Kashif Naeem, NIGAB,
- v. Dr. Zhi-Kang Li, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
- vi. Dr. Jian-Long Xu, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: GM Ali-5

Crop: Rice (*Oryza sativa* L.)

Type of the variety: OPV

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling color	Green
Coleoptile color	Colorless
Seedling length cm	6
Leaf length cm	17
Leaf length of blade	Medium
Leaf anthocyanin	Absent
Leaf width	2 cm
Leaf width	Medium
Leaf pubescence	Absent
Leaf color	Green
Leaf sheath color	Pale green
Leaf senescence	Intermediate
Ligule color	Other
Ligule length	2.2 cm
Ligule shape	Truncate
Collar color	Pale green

Flag leaf attitude	Erect
Flag leaf length	16 cm
Flag leaf width	2 cm
Mature stem length	64 cm
Stem attitude	Erect
Stem thickness	0.33 cm
Stem stiffness	Semi stiff
Tillers/plant	14-16
Internode color	Light yellow
No. Of nodes/ stem	3
Maturity straw color	Straw
Panicle length	9 cm
Panicle length	Medium
Panicle type	Medium compact
Spikelet density	Semi dense
Spikelets/panicle	116
Branches/ panicle	Moderate
Secondary branches	Present
Intensity of secondary branches	Moderate
Attitude of branches	Semi erect
Panicle exertion	Mostly exerted
Panicle curvature of main axis	Drooping
Awning at maturity	Absent
Awn color at maturity	Straw
Shattering	Very low
Threshability	Easy
Seed awning	Absent
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Absent
Husk pubescence	Sparse

Pubescence length	Short
Seed shape	Spear
Seed length	10.8 mm
Seed width	2.2 mm
Seed thickness	2 mm
Remarks	Crop was uniform

Opposition can be filed up to: 30-04-2024

13. Application No.: PBRR-Rice-99/23

Name of the applicant: Director, NIGAB, NARC, PARC

Institute: National Institute of Genomics and Advance Biotechnology

Name of Breeder(s):

- i. Dr. Ghulam Muhammad Ali, NIGAB
- ii. Dr. Zaheer Abbas, NIGAB
- iii. Dr. Kashif Naeem, NIGAB,
- iv. Dr. Zhi-Kang Li, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
- v. Dr. Jian-Long Xu, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: GM Ali-48

Crop: Rice (*Oryza sativa* L.)

Type of the variety: OPV

Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling color	Green
Coleoptile color	Colorless

Seedling length	5 cm
Leaf length	14 cm
Leaf length of blade	Medium
Leaf anthocyanin	Absent
Leaf width	2 cm
Leaf width	Medium
Leaf pubescence	Sparse
Leaf color	Green
Leaf sheath color	Green
Leaf senescence	Intermediate
Ligule color	Other
Ligule length	2 cm
Ligule shape	2-cleft
Collar color	Pale green
Flag leaf attitude	Semi erect
Flag leaf length	14 cm
Flag leaf width	2 cm
Mature stem length	85 cm
Stem attitude	Semi erect
Stem thickness	0.29 cm
Stem stiffness	Semi stiff
Tillers/plant	11-13
Internode color	Light yellow
No. Of nodes/ stem	4
Maturity straw color	Straw
Panicle length	13 cm
Panicle length	Short
Panicle type	Medium compact
Spikelet density	Semi dense
Spikelets/panicle	190
Branches/ panicle	Moderate

Secondary branches	Present
Intensity of secondary branches	Moderate
Attitude of branches	Semi erect
Panicle exertion	Mostly exerted
Panicle curvature of main axis	Drooping
Awning at maturity	Absent
Awn color at maturity	Absent
Shattering	Low
Threshability	Easy
Seed awning	Absent
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Absent
Husk pubescence	Low
Pubescence length	Short
Seed shape	Semi crescent
Seed length	11 mm
Seed width	2 mm
Seed thickness	2 mm
Remarks	Crop was uniform

Opposition can be filed up to: 30-04-2024

NEWS AND EVENTS

CANNABIS CONTROL AND REGULATORY AUTHORITY (CCRA)

Pakistan is working on establishment of the Cannabis Control and Regulatory Authority (CCRA) to manage the cultivation and production of cannabis for medical and industrial purposes, following initiatives initiated by the prior administration. The CCRA, under the administrative control of the Cabinet Division, will be responsible for licensing cannabis cultivation, and a proposed board structure along with a designated map for possible cultivation sites are currently being created.

HYBRID WHEAT

Pakistan is expressing interest in hybrid wheat varieties from China, having improved yield and abiotic stress tolerance. Pakistan is taking initiatives to bring China in partnership of incorporating research innovations in wheat breeding program.

RICE EXPORTS

Pakistan experienced a remarkable increase in rice exports, more than 76% increase in the first half of the fiscal year, amounting to USD 1.63 billion. This surge, characterized by an impressive 48.35% increase in volume, is partly attributed to low export from India, prompting buyers to turn to the Pakistani market. Exporters anticipate that total rice exports may hit a record USD 3.5 billion, particularly with growing demand in the Middle East as Ramadan approaches. Nevertheless, this surge in exports raises alarms regarding domestic food security, as rice prices have escalated by over 45% in urban regions and more than 50% in rural areas, adding to an annual food inflation rate of 27.5%. Policymakers are challenged to find a balance between the economic upsides and the necessity of maintaining affordable rice prices for local consumers, akin to strategies implemented by other rice-exporting countries like Thailand and Vietnam.

MAJOR THREAT FOR RABI CROPS

Winter crops are at risk due to a severe rainfall shortage, impacting farmers' livelihoods and the country's food security. With significantly lower than normal winter rainfall, agricultural production, especially of wheat, faces potential deficits. Experts link these extreme weather conditions to climate change, predicting ongoing challenges for both water availability

and crop yields. The situation highlights the urgent need for adaptive strategies to mitigate the impacts of climate variability on Pakistan's agriculture.