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PBRR, Pakistan

Plant Breeders' Rights Registry

Plant Breeders' Rights Journal



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Mauve Area, Islamabad, Pakistan

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EDITORIAL

Pakistan is an agricultural country having 37.4% of its labor force engaged in this sector. The country is bestowed with a range of Agro-climates. It has world's largest irrigation system. The country has hills and mountains decorated with fruits, vegetables and forests. Whereas, plains of Punjab and Sindh provinces are source of staple and cash crops produce which not only fulfills need of the world's fifth highly populated country but also get exported. Moreover, tropical fruits like mango, orange and banana are also specialty of these plains.

To meet the versatile demand of seed, Pakistan has a well-developed seed industry. More than eleven hundred commercial companies are engaged in seed business at various levels and in different crops. A well-established Seed Regulatory setup is also in place to facilitate the seed business. However, R&D activities, specially in private sector, are limited. One of many reasons was absence of any legal security to harvest the financial gain as result of business of propagating material of a variety developed after a long, difficult and expensive breeding effort. Enactment of the Plant Breeder's Rights Act, 2016 overcame this deficiency.

After establishing the Plant Breeders' Rights (PBR) Registry, one of the main targets was to become able to entertain PVP applications for all crops under cultivation in country. With addition of two more sites i.e., Islamabad and Tandojam (Sind), the varietal evaluation system has been strengthened. This addition coupled with skilled team of the PBR Registry has enable extension of scopes, from 32 to about 263 of crop species, eligible to get the PBR Rights in Pakistan. This marked improvement is expected to facilitate a wide range of R&D organizations and will make available climate resilient high yielding varieties of major as well as minor crop species.

Dr. Muhammad Naeem
Registrar
Plant Breeders' Rights Registry, Pakistan

SCOPE

Plant breeders' Rights Registry was entertaining 32 crop species for plant variety protection while the scope has been expanded for following crop species:

S. No.	Crop Group	Name Of Crops
1.	Cereals	Triticale (<i>Triticosecale</i> spp.), Quinoa (<i>Chenopodium quinoa</i> Willd.) Durum Wheat (<i>Triticum durum</i> L.)
2.	Vegetables	Okra (<i>Abelmoschus esculentus</i> L.), Spinach (<i>Spinacia oleracea</i> L.), Radish (<i>Raphanus sativus</i> L.), Carrot (<i>Daucus carota</i> L.), Cabbage (<i>Brassica oleracea</i> L.), Turnip (<i>Brassica rapa</i> L.), Cauliflower (<i>Brassica oleracea</i> var. botrytis), Ginger (<i>Zingiber officinale</i> L.), Corriander (<i>Coriandrum sativum</i> L.), Fenugreek (<i>Trigonella foenum-graecum</i> L.), Lettuce (<i>Lactuca sativa</i> L.), Pepper (<i>Capsicum annum</i> L.), Sugarbeet (<i>Beta vulgaris</i> L.), Turmeric (<i>Curcuma longa</i> L.), Gourds (<i>Cucurbita</i> spp., <i>Lagenaria siceraria</i> Molina Standl.), Taro (<i>Colocasia esculenta</i> L.), Brinjal (<i>Solanum melongena</i> L.), Common Beans (<i>Phaseolus vulgaris</i> L.), Pigeon Pea (<i>Cajanus cajan</i> L.), Broccoli (<i>Brassica oleracea</i> var. italica L.), Sweet Potato (<i>Ipomoea batatas</i> L.), Beet Root (<i>Beta vulgaris</i> L.), Celery (<i>Apium graveolens</i> L.), Parsley (<i>Petroselinum crispum</i> L.), Leek (<i>Allium porrum</i> L.), Cowpea (<i>Vigna unguiculata</i> L. Walp.), Mushroom (<i>Agaricus bisporus</i> L., <i>Pleurotus ostreatus</i> L.)
3.	Fruits	Apple (<i>Malus domestica</i> L., <i>Pyrus malus</i> L.), Grapes (<i>Vitis vinifera</i> L.), Loquat (<i>Eriobotrya japonica</i> L.), Pomegranate (<i>Punica granatum</i> L.), Apricot (<i>Prunus armeniaca</i> L.), Fig (<i>Ficus carica</i> L. Moraceae), Guava (<i>Psidium guajava</i> L.), Strawberry (<i>Fragaria</i> × <i>ananassa</i> , <i>Fragaria nubicola</i> , <i>Fragaria vesca</i>), Litchi (<i>Litchi chinensis</i> Sonn.), Papaya (<i>Carica papaya</i> L.), Jujube (<i>Ziziphus jujuba</i> Mill.), Black Berry (<i>Rubus fruticosus</i> L.), Avocado (<i>Persia americana</i> L.), Almond (<i>Prunus dulcis</i> L.), Melon (<i>Cucumis melo</i> L.), Walnut (<i>Juglans regia</i> L.), Pineapple (<i>Ananas comosus</i> L. Merr.), Quince (<i>Cydonia oblonga</i> Mill.), Pecan Nut (<i>Carya illinoensis</i> Wangenh. K. Koch), Phalsa (<i>Grewia asiatica</i> L.), Jamun (<i>Syzygium cumini</i> L. Skeels), Dragon Fruit (<i>Selenicereus undatus</i> L.), Passion Fruit (<i>Passiflora edulis</i> L.), Persimmon (<i>Diospyros kaki</i> L.), Plum (<i>Prunus domestica</i> L.), Cherry (<i>Prunus avium</i> L.), Chikku (<i>Manikara zapota</i> L. P. Royen)
4.	Oil Seeds	Linseed (<i>Linum usitatissimum</i> L.), Soybean (<i>Glycine max</i> L. Merr.), Safflower (<i>Carthamus tinctorius</i> L.), Coconut (<i>Cocos nucifera</i> L.), Castor Bean (<i>Ricinus communis</i> L.), Taramira (<i>Eruca sativa</i> L.), Mustard (<i>Brassica</i> spp.)
5.	Ornamentals	Rose (<i>Rosa</i> spp.), Jasmine (<i>Jasminum</i> spp.), Common Ivy (<i>Hedera</i> spp.), Bougainvillea (<i>Bougainvillea</i> spp.), Marigold (<i>Calendula officinalis</i> L.), Lotus (<i>Nelumbo nucifera</i> Gaertn.), Tulip (<i>Tulipa</i> spp.), Daffodil (<i>Narcissus</i> spp.)
6.	Fodders	Clover (<i>Trifolium</i> spp.), Lucerne (<i>Medicago sativa</i> L.), Rhodes Grass (<i>Chloris gayana</i> Kunth.), Nappier Grass (<i>Cenchrus purpureus</i> Schumach.), Sorghum-Sudangrass (<i>Sorghum sudanense</i>), Guar (<i>Cyamopsis tetragonoloba</i> L.), Alfalfa (<i>Medicago sativa</i> L.), Berseem (<i>Trifolium Alexandrium</i> L.)

7.	Medicinals	Moringa (<i>Moringa oleifera</i> L.), Saffron (<i>Crocus sativus</i> L.), Henna (<i>Lawsonia inermis</i> L.), Tea (<i>Camellia sinensis</i> L.), Tobacco (<i>Nicotiana tobaccum</i> L.), Kalongi (<i>Nigella sativa</i> L.), Fennel (<i>Foeniculum vulgare</i> L.), Stevia (<i>Stevia rebaudiana</i> Bertoni), Ispaghul (<i>Plantago ovata</i> L.), Chia Seed (<i>Salvia hispanica</i> L.)
8.	Fibers	Hemp (<i>Canabis</i> spp.), Jute (<i>Corchorus</i> spp.)
9.	Spices	Mint (<i>Mentha spicata</i> L.), Black Pepper (<i>Piper nigrum</i> L.)

CASES FOR OPPOSITION

1. Application No.: PBRR-Cotton-11/21

Name of the applicant: Lucky Core Industries (LCI) Formerly ICI Pkistan Limited

Institute: LCI Research Station Multan

Name of Breeder(s):

- i. Abdul Razaque Soomro
- ii. Waqas Ahmad

Name of Co-breeder(s): Lucky Core Industries (LCI)

Application for: New Plant Variety

Denomination of variety: ICI-2424

Crop: Cotton (*Gossypium hirsutum* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Days to maturity	145-155
Maturity duration	Early
Earlier than	IUB-2013
Later than	No
Days to opening 50%	110
Seedling Characteristics	

Seedling colour	Green
Foliage spot	Present
Plant Characteristics	
Growth habit	Medium Compact
Plant height (cm)	125-145
Plant shape	Spreading
Fruiting branch type	Normal
Monopodia attitude	Semi erect
Sympodia attitude	Semi erect
First Sympodial node number	5.5
Monopodia/plant	2-4
Sympodia/plant	22-29
Stem pigmentation	Medium
Stem tip hairiness	Medium
Bud gossypol	Normal
Leaf Characteristics	
Foliage density	Intermediate
Leaf colour	Green
Leaf length (cm)	7.9
Leaf width (cm)	12.1
Petiole length (cm)	7.91
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%	110
Flowering duration	Long

Flower size	Medium
Sepal pigmentation	Present
Petal spot	Absent
Nectaries	Present
Petal colour	Creamy
Anther colour	Creamy
Stamen density	Semi Dense
Position of stigma	Exerted
Stigma exertion (mm)	2.7
Stigma height (mm)	2.4
Calyx size	Intermediate
Boll Characteristics	
Boll bearing habit	Solitary
Boll shape	oval
Boll colour	Green
Boll size (boll width at maximum point)	Medium
Beak size	Short
Boll length (cm)	NR
Boll breadth (cm)	NR
Boll broad at	lower.Midd
Peduncle length (cm)	NR
Boll surface	Smooth
Gossypol	Normal
Bracteole length	Medium
Bracteole width	Medium
Bolls/plant	50-60
Boll opening	open
Boll weight (g)	4.1
Yield (seed cotton) (kg/acre)	2300
Yield (lint) kg/acre	760
Seed Characteristics	

Seed size	Medium
Seed shape	Oblong
Seed length (mm)	NR
Seed width (mm)	NR
Seed index (g)	7.9
Seed coat colour	Brown
Seed fuzz	Fuzzy
Fuzz colour	Dusky white
Oil contents (%)	22.25
Fiber Characteristics:	
Fiber colour	Shiny white
GOT/Lint (%)	42.5
Staple length (mm)	30.03
Fineness (micronaire)	4.43ug/inch
Fiber strength (tppsi)	98.7-105 tppsi (30.9G/Tax)
Lint index (g)	5.22
Uniformity (%)	49.98
Spinning index	NR
Fiber length group	Long (28.5-33mm)
Environmental Adaptability:	
Flowering response to seasons	Stable
Drought Tolerance	Most Tolerant
Tolerance to Salinity	Most Tolerant
Tolerance to Acid soils	Most Tolerant
Cold Tolerance	Medium
Heat Tolerance	Most Tolerant
Resistance to Insect Pests	Resistant to American and other bollworms. Tolerant to sucking complex
Resistance to Diseases	High CLCV tolerance

Opposition can be filed up to: 30-11-2024

2. Application No.: PBRR-Potato-37/21

Name of the applicant: IPR B.V. (HZPC), Netherland

Institute: IPR B.V. (HZPC), Netherland

Name of Breeder(s):

HZPC Research B.V., Roptawei 4, NL-9123 JB Metslawier, The Netherlands

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Alverstone Russet

Crop: Potato (*Solanum tuberosum* L.)

Type of the variety: Vegetatively propagated

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Origin	Exotic
Lightsprout Characteristics	
Proportion of blue in anthocyanin coloration of base	Medium
Size	Medium to large
Shape of base	Ovoid
Intensity of anthocyanin coloration of base	Medium to strong
Pubescence of base	Medium to strong
Size of tip in relation to base	small to medium
Habit of tip	closed to intermediate
Anthocyanin coloration of tip	medium
Pubescence of tip	medium
Number of root tips	many

Length of lateral shoots	short to medium
Proportion of blue in anthocyanin coloration of base	Medium
PLANT CHARACTERISTICS	
foliage structure	leaf type
growth habit	upright to semi-upright
Height	tall
Frequency of flowers	medium to high
time of maturity	late
Leaf Characteristics	
outline size	large to very large
openness	intermediate
presence of secondary leaflets	medium to strong
Flower size	Large
Second pair of lateral leaflets: width in relation to length	narrow to medium
Terminal and lateral leaflets: frequency of coalescence	absent or very low
green color	light
anthocyanin coloration on midrib of upper side	weak
Stem Characteristics	
anthocyanin coloration	weak
Inflorescence Characteristics	
Size	Medium
Flower bud: anthocyanin coloration	medium
anthocyanin coloration on peduncle	absent or very weak
Floral Characteristics	
Corolla size	Medium
Intensity of anthocyanin coloration on inner side	medium
Proportion of blue in anthocyanin coloration on inner side	high
Extent of anthocyanin coloration on inner side	medium
Tuber Characteristics	

Shape	Oval
depth of eyes	Shallow to medium
color of skin	Yellow
color of base of eye	Yellow
color of flesh	White
anthocyanin coloration of skin in reaction to light	Strong

Opposition can be filed up to: 02-11-2024

3. Application No.: PBRR-Potato-38/21

Name of the applicant: IPR B.V. (HZPC), Netherland

Institute: IPR B.V. (HZPC), Netherland

Name of Breeder(s):

HZPC Research B.V., Roptawei 4, NL-9123 JB Metslawier, The Netherlands

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Sababa

Crop: Potato (*Solanum tuberosum* L.)

Type of the variety: Vegetatively propagated

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Origin	Exotic
Lightsprout Characteristics	
Size	Medium to large
Shape of base	Ovoid
Anthocyanin coloration of base	Medium to strong
Pubescence of base	Weak
Size of tip in relation to base	Small to medium

Habit of tip	Intermediate
Anthocyanin coloration of tip	Very weak to weak
Pubescence of tip	Weak
Number of root tips	Medium to many
Length of lateral shoots	Short
Proportion of blue in anthocyanin coloration of base	Absent or low
Plant Characteristics	
Foliage structure	Stem type
growth habit	upright to semi-upright
Height	Tall
Frequency of inflorescences	High
time of maturity	Medium to late
Leaf Characteristics	
outline size	large to very large
openness	closed to intermediate
presence of secondary leaflets	Strong
Second pair of lateral leaflets: width in relation to length	Medium
Terminal and lateral leaflets: frequency of coalescence	absent or very low
Green color	Medium
anthocyanin coloration on midrib of upper side	Absent or very weak
Stem Characteristics	
Anthocyanin coloration	weak
Inflorescence Characteristics	
Size	Medium
Flower bud: anthocyanin coloration	absent or very weak
anthocyanin coloration on peduncle	absent or very weak
Floral Characteristics	
Corolla size	Medium
Intensity of anthocyanin coloration on inner side	absent or very weak
Tuber Characteristics	

Shape	Oval
depth of eyes	Shallow to medium
color of skin	Yellow
color of base of eye	Yellow
color of flesh	Cream
Smoothness of skin	Smooth

Opposition can be filed up to: 02-11-2024

4. Application No.: PBRR-Mungbean-87/23

Name of the applicant: Arid Zone Research Institute, Bhakkar

Institute: Arid Zone Research Institute, Bhakkar

Name of Breeder(s):

- i. Mr. Abdul Ghaffar, Scientific Officer, AZRI, Bhakkar
- ii. Mr. Niaz Hussain, Scientific Officer, AZRI, Bhakkar
- iii. Mr. Mudassar Khaliq, Scientific Officer, AZRI, Bhakkar
- iv. Dr. Muhammad Aslam, Economic Botanist, AZRI, Bhakkar
- v. Dr. Khalid Hussain, Director, AZRI, Bhakkar

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: AZRI-Mung-2021

Crop: Mungbean (*Vigna radiate* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Origin	Local
Breeding method	Hybridization
Areas of adaptation	Punjab
Planting time	Summer

Maturity Duration	Medium
Suitable for sowing	Early & medium
Type of variety	Indeterminate
Earlier than	NM-2016
Seedling Characteristics	
Hypocotyl anthocyanin	Absent
Seedling length	11-13 days (after two weeks)
Seedling pubescence	Present
Intensity of pubescence	Medium
Plant Characteristics	
Growth habit	Semi erect (30-60)
Growth type	Indeterminate
Plant height	Short (45-50 cm)
Shorter than	NM-2016
Canopy spread	Medium
Stem Characteristics	
Stem colour	Green
Stem hairiness	Medium
No. Of nodes/ stem	3 to 6
Twining tendency	Slight
Branching pattern	Central
No. of secondary branches	5 to 7
Lodging	Resistant
Leaf Characteristics	
Leaf attitude	Semi erect
Petiole anthocyanin	Medium
Petiole colour	Green with purple splashes
Petiole length	8-9 cm
Leaf colour	Green
Leaf vein colour	Greenish purple
Terminal leaflet shape	Deltoid

Leaf pubescence	Present
Leaf size	Medium
No. of leaflets leaf	3
Terminal Leaflet length	6-8 cm
Terminal Leaflet width	7-10 cm
Flower Characteristics	
Days to 50% flowering	36-40 days
Flowering duration	Medium
Color of petal	Yellowish purple
Flower size	Medium
Peduncle anthocyanin	Medium
Raceme position	Intermediate
Pod Characteristics	
Immature pod colour	Green
Pod position	Intermediate
Mature pod colour	Brownish/black
Pod shape	Rounded
Pod size	Large
Pod length	8-10 cm
Pod width	6-8 cm
Larger than	NM-2016
Pod curvature	Medium
Pod beak length	6-11 mm
Pod beak shape	Straight
Pod pubescence	Profuse
Pod constriction	Strong
Pod attachment	Erect
Pod shattering	Low
Pod shedding	Low
Peduncle length	3.6 cm
No. of clusters/plant	3 to 5

Pods/clusters	2 to 4
Pods/plant	35-43
Seeds/pod	7 to 11
Seed Characteristics	
Seed colour	Light green
Seed shape	Drum
Seed coat pattern	Absent
Seed testa texture	Smooth
Seed luster	Shiny
Seed size	Medium
Seed length	6-6.5 mm
Seed width	3.5-4 mm
Seed thickness	3.8-4 mm
Cotyledon colour	Light yellow
Hilum shape	Not concave
1000 seed weight	6 g
Yield	2400 kg/ha

Opposition can be filed up to 02-11-2024

5. Application No.: PBRR-Mungbean-88/23

Name of the applicant: Arid Zone Research Institute, Bhakkar

Institute: Arid Zone Research Institute, Bhakkar

Name of Breeder(s):

- i. Mr. Niaz Hussain, Scientific Officer, AZRI, Bhakkar
- ii. Mr. Mudassar Khaliq, Scientific Officer, AZRI, Bhakkar
- iii. Mr. Abdul Ghaffar, Scientific Officer, AZRI, Bhakkar
- iv. Dr. Muhammad Aslam, Economic Botanist, AZRI, Bhakkar
- v. Dr. Khalid Hussain, Director, AZRI, Bhakkar

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Jumbo Mung

Crop: Mungbean (*Vigna radiate* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Origin	Local
Breeding method	Hybridization
Areas of adaptation	Punjab
Planting time	Summer
Maturity Duration	Medium
Suitable for sowing	Early & medium
Type of variety	Indeterminate
Earlier than	AM-2018
Seedling Characteristics	
Hypocotyl anthocyanin	Absent
Seedling length	9-13 cm
Seedling pubescence	Present
Intensity of pubescence	Medium
Plant Characteristics	
Growth habit	Semi erect (30-60)
Growth type	Indeterminate
Plant height	Medium (50-70 cm)
Taller than	AM-2006
Shorter than	NM-2016
Canopy spread	Medium
Stem Characteristics	
Stem colour	Greenish purple
Stem hairiness	Medium
No. Of nodes/ stem	3 to 7
Twining tendency	Slight
Branching pattern	Central

No. of secondary branches	6 to 9
Lodging	Resistant
Leaf Characteristics	
Leaf attitude	Semi erect
Petiole anthocyanin	Weak
Petiole colour	Green with purple splashes
Petiole length	7-10 cm
Leaf colour	Light green
Leaf vein colour	Green
Terminal leaflet shape	Ovate
Leaf pubescence	Present
Leaf size	Medium
No. of leaflets leaf	3
Terminal Leaflet length	6-9 cm
Terminal Leaflet width	6-10 cm
Flower Characteristics	
Days to 50% flowering	35-44 days
Flowering duration	Medium
Color of petal	Purplish green
Flower size	Large
Peduncle anthocyanin	Weak
Raceme position	Above canopy
Pod Characteristics	
Immature pod colour	Green
Pod position	Above canopy
Mature pod colour	Brownish/black
Pod shape	Rounded
Pod size	Large
Pod length	9-11 cm
Pod width	5-7 cm
Smaller than	AM-2006

Larger than	NM-2016
Pod curvature	Medium
Pod beak length	6-8 mm
Pod beak shape	Knob
Pod pubescence	Profuse
Pod constriction	Strong
Pod attachment	Erect
Pod shattering	Absent
Pod shedding	Low
Peduncle length	3.6 cm
No. of clusters/plant	3 to 5
Pods/clusters	2 to 3
Pods/plant	34-40
Seeds/pod	9 to 11
Seed Characteristics	
Seed colour	Light green
Seed shape	Any other
Seed coat pattern	Absent
Seed testa texture	Smooth
Seed luster	Dull
Seed size	Bold
Seed length	5.7-6 mm
Seed width	3.5-4 mm
Seed thickness	3.9-4 mm
Cotyledon colour	Light yellow
Hilum shape	Concave
1000 seed weight	5-5.6 g
Yield	2450 kg/ha

Opposition can be filed up to: 02-11-2024

6. Application No.: PBRR-Rice-100/23

Name of the applicant: Principal Scientist, Rice Research Institute, Kala Shah Kaku

Institute: Rice Research Institute, Kala Shah Kaku

Name of Breeder(s):

- i. Syed Sultan Ali, RRI, KSK
- ii. Dr. Muhammad Sabar, RRI, KSK
- iii. Dr. Muhammad Akhter, AARI, Fsd.
- iv. Ch. Muhammad Rafiq, RRI, KSK
- v. Mr. Muhammad Iqbal, RRI, KSK
- vi. Dr. Muhammad Ijaz, RRS, Bahawalpur
- vii. Mr. Tahir Latif, RRI, KSK
- viii. Mr. Zulqarnain Haider, RRI, KSK
- ix. Mr. Rana Ahsan Raza Khan, RRI, KSK
- x. Mrs. Misbah Riaz, RRI, KSK
- xi. Mrs. Tahira Bibi, RRI, KSK
- xii. Mr. Awais Riaz, RRI, KSK
- xiii. Mrs. Fariha Shahzadi, RRI, KSK
- xiv. Mrs. Hira Sehar, RRI, KSK

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Sultan Super Basmati

Crop: Rice (*Oryza sativa* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Area of adaptation	All rice growing areas of Pakistan
Variety origin	Local cross
Days to maturity	108-110 days
Earlier than	PK1121 aromatic
Later than	Chenab basmati
Photo sensitivity	Sensitive
Sowing date	15th to 30th of June
Transplanting suitability	4 weeks

Seedling Characteristics	
Seedling color	Light green
Seedling length (cm)	30
Stem Characteristics	
Mature stem length (cm)	115-122
Stem height	Tall
Taller than	Kissan basmati
Shorter than	Basmati 515
Stem diameter (mm)	6-7
Stem attitude	Tall
Stem stiffness	Semi stiff
Tillers/plant	24
Internode color	Light yellow
No. Of nodes/ stem	5
Maturity straw color	Straw
Leaf Characteristics	
Leaf length (cm)	40.2-56
Leaf width (cm)	0.9-1.3
Leaf pubescence	Sparse
Leaf color	Green
Leaf sheath color	Green
Flag leaf attitude	Semi erect
Flag leaf length (cm)	35.1-55
Flag leaf width (cm)	0.9-1.2
Ligule colour	Papery
Ligule length (mm)	10
Auricle colour	Pale green
Collar colour	Pale green
Ligule shape	Acuminate
Leaf senescence	Intermediate
Panicle Characteristics	

Days to 50% heading	86-90 days
Panicle length (cm)	24-28
Panicle type	Open
Spikelet density	Semi dense
Spikelets/panicle	120
Branches/ panicle	Moderate
Secondary branches	Light
Panicle exertion	Well exerted
Attitude	Drooping
Awning at maturity	Short & partial
Awning at flowering	Short & partial
Awn color at flowering	Straw
Awn color at maturity	Straw
Sterility	Low
Shattering	Low
Thresh ability	Easy
Yield/ ha. (MT)	4.1
Seed Characteristics	
Seed awning	Absent
Stigma colour	White
Apiculus color (anthesis)	Straw
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Weak
Husk pubescence	Medium
Pubescence length	Short
Seed shape	Intermediate
Seed length (mm)	12.5-14.5
Seed width (mm)	2.5-2.9
Sterile lemma length (mm)	3
Sterile lemma color	Straw

1000 grain weight	30 g
Seed thickness (mm)	1.9-2.5
Seed size	Extra long
Seed dormancy	Low
Kernel size	Extra long
Kernal shape	Slender
Kernal colour	Light yellow
Kernal appearance	Translucent
Chalkiness	Present
Chalk position	Germ pit
Kernal aroma	Strong
Kernal quality	Fine
Resistance	
Lodging	Medium
Caterpillars	Medium
Borers	Medium
Hoppers	Medium
Rice blast	MS
BLB	MS
Stem rot	MS
Distinctness	Long grain, high yielding, early maturity and aromatic line

Opposition can be filed up to: 30-11-2024

7. Application No.: PBRR-Rice-101/23

Name of the applicant: Principal Scientist, Rice Research Institute, Kala Shah Kaku

Institute: Rice Research Institute, Kala Shah Kaku

Name of Breeder(s):

- i. Syed Sultan Ali, RRI, KSK
- ii. Dr. Muhammad Sabar, RRI, KSK
- iii. Dr. Muhammad Akhter, AARI, Fsd.
- iv. Ch. Muhammad Rafiq, RRI, KSK
- v. Mr. Muhammad Iqbal, RRI, KSK

- vi. Dr. Muhammad Ijaz, RRS, Bahawalpur
- vii. Mr. Tahir Latif, RRI, KSK
- viii. Mr. Zulqarnain Haider, RRI, KSK
- ix. Mr. Rana Ahsan Raza Khan, RRI, KSK
- x. Mrs. Misbah Riaz, RRI, KSK
- xi. Mrs. Tahira Bibi, RRI, KSK
- xii. Mr. Awais Riaz, RRI, KSK
- xiii. Mrs. Fariha Shahzadi, RRI, KSK
- xiv. Mrs. Hira Sehar, RRI, KSK

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Sona Super Basmati

Crop: Rice (*Oryza sativa* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Days to maturity	105-115 days
Earlier than	Super basmati
Later than	Kissan basmati
Photo sensitivity	Sensitive
Seedling Characteristics	
Seedling color	Green
Seedling length	30 cm
Stem Characteristics	
Mature stem length	90-100 cm
Stem height	Tall
Taller than	Kissan basmati
Shorter than	PK 1121 Aromatic
Stem diameter	5.1 mm
Stem attitude	Semi erect

Stem stiffness	Semi stiff
Tillers/plant	15
Internode color	Light yellow
No. Of nodes/ stem	5
Maturity straw color	Straw
Leaf Characteristics	
Leaf length	50-70 cm
Leaf width	0.3-1.1 cm
Leaf pubescence	Sparse
Leaf color	Green
Leaf sheath color	Green
Flag leaf attitude	Semi erect
Flag leaf length	40-50 cm
Flag leaf width	1.0-1.8 cm
Ligule colour	Papery
Ligule length	1.4 mm
Auricle colour	Pale green
Collar colour	Pale green
Ligule shape	Cleft
Leaf senescence	Intermediate
Panicle Characteristics	
Days to 50% heading	80 days
Panicle length	28-31 cm
Panicle type	Open
Spikelet density	Semi dense
Spikelets/panicle	110
Branches/ panicle	Moderate
Secondary branches	Light
Panicle exertion	Well exerted
Attitude	Drooping
Awning at maturity	Short & partial

Awning at flowering	Short & partial
Awn color at flowering	Straw
Awn color at maturity	Straw
Sterility	Low
Shattering	Low
Thresh ability	Easy
Yield/ha.	4.8 MT
Seed Characteristics	
Seed awning	Absent
Stigma colour	White
Apiculus color (anthesis)	Straw
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Absent
Husk pubescence	Sparse
Pubescence length	Short
Seed shape	Spear
Seed length	13-14 mm
Seed width	2.2-2.7 mm
Sterile lemma length	3 mm
Sterile lemma color	Straw
1000 grain weight	28 g
Seed thickness	1.9-2.2 mm
Seed size	Extra long
Seed dormancy	Low
Kernel size	Extra long
Kernal shape	Slender
Kernal colour	White
Kernal appearance	Translucent
Chalkiness	Present
Kernal aroma	Medium

Kernal quality	Very fine
Resistance	
Lodging	Medium
Caterpillars	Medium
Borers	Medium
Hoppers	Medium
Rice blast	MS
BLB	MS
Stem rot	MS
Distinctness	Extra-long grain, high yielding, early maturity basmati line

Opposition can be filed up to: 30-11-2024

8. Application No.: PBRR-Rice-102/23

Name of the applicant: Principal Scientist, Rice Research Institute, Kala Shah Kaku

Institute: Rice Research Institute, Kala Shah Kaku

Name of Breeder(s):

- i. Syed Sultan Ali, RRI, KSK
- ii. Dr. Muhammad Sabar, RRI, KSK
- iii. Dr. Muhammad Akhter, AARI, Fsd.
- iv. Ch. Muhammad Rafiq, RRI, KSK
- v. Mr. Muhammad Iqbal, RRI, KSK
- vi. Dr. Muhammad Ijaz, RRS, Bahawalpur
- vii. Mr. Tahir Latif, RRI, KSK
- viii. Mr. Zulqarnain Haider, RRI, KSK
- ix. Mr. Rana Ahsan Raza Khan, RRI, KSK
- x. Mrs. Misbah Riaz, RRI, KSK
- xi. Mrs. Tahira Bibi, RRI, KSK
- xii. Mr. Awais Riaz, RRI, KSK
- xiii. Mrs. Fariha Shahzadi, RRI, KSK
- xiv. Mrs. Hira Sehar, RRI, KSK

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Vital Super Basmati

Crop: Rice (*Oryza sativa* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Days to maturity	100-110 days
Earlier than	PK 1121 Aromatic
Later than	Kissan basmati
Seedling Characteristics	
Seedling color	Green
Seedling length	30 cm
Stem Characteristics	
Mature stem length	148-175 cm
Stem height	Tall
Taller than	Super basmati
Shorter than	Basmati 2000
Stem diameter	5.3 mm
Stem attitude	Semi erect
Stem stiffness	Semi stiff
Tillers/plant	15
Internode color	Light yellow
No. Of nodes/ stem	5
Maturity straw color	Straw
Leaf Characteristics	
Leaf length	40-78 cm
Leaf pubescence	Sparse
Leaf color	Green
Leaf sheath color	Green
Flag leaf attitude	Semi erect
Flag leaf length	59-63 cm
Flag leaf width	1.0-1.8 cm

Ligule colour	Papery
Ligule length	0.8 mm
Auricle colour	Green
Collar colour	Green
Ligule shape	Cleft
Leaf senescence	Early
Panicle Characteristics	
Days to 50% heading	75-80 days
Panicle length	30.3-33.5 cm
Panicle type	Open
Spikelet density	Semi dense
Spikelets/panicle	160
Branches/ panicle	Moderate
Secondary branches	Medium
Panicle exertion	Well exerted
Attitude	Drooping
Awning at maturity	Short & partial
Awning at flowering	Short & partial
Awn color at flowering	Straw
Awn color at maturity	Straw
Sterility	Very low
Shattering	Low
Thresh ability	Easy
Yield/ha.	4.5 MT
Seed Characteristics	
Seed awning	Absent
Stigma colour	White
Husk color	Straw
Husk pigment	Weak
Husk pubescence	Sparse
Pubescence length	Short

Seed shape	Spear
Seed length	12.5-14.5 mm
Seed width	2.5-2.9 mm
Sterile lemma length	3 mm
Sterile lemma color	Straw
1000 grain weight	22.7 g
Seed thickness	1.9-2.5 mm
Seed size	Extra long
Seed dormancy	Low
Kernel size	Extra long
Kernal shape	Slender
Kernal colour	White
Kernal appearance	Translucent
Chalkiness	Absent
Kernal aroma	Strong
Kernal quality	Very fine
Resistance	
Lodging	Medium
Caterpillars	Medium
Borers	Medium
Hoppers	Medium
Rice blast	MS
BLB	MS
Stem rot	MS
Distinctness	Extra-long grain, high yielding, early maturity and aromatic fine line

Opposition can be filed up to: 30-11-2024

9. Application No.: PBRR-Rice-103/24

Name of the applicant: Principal Scientist, Rice Research Institute, Kala Shah Kaku

Institute: Rice Research Institute, Kala Shah Kaku

Name of Breeder(s):

- i. Syed Sultan Ali, RRI, KSK
- ii. Dr. Muhammad Sabar, RRI, KSK
- iii. Dr. Muhammad Akhter, AARI, Fsd.
- iv. Ch. Muhammad Rafiq, RRI, KSK
- v. Mr. Muhammad Iqbal, RRI, KSK
- vi. Dr. Muhammad Ijaz, RRS, Bahawalpur
- vii. Mr. Tahir Latif, RRI, KSK
- viii. Mr. Zulqarnain Haider, RRI, KSK
- ix. Mr. Rana Ahsan Raza Khan, RRI, KSK
- x. Mrs. Misbah Riaz, RRI, KSK
- xi. Mrs. Tahira Bibi, RRI, KSK
- xii. Mr. Awais Riaz, RRI, KSK
- xiii. Mrs. Fariha Shahzadi, RRI, KSK
- xiv. Mrs. Hira Sehar, RRI, KSK

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: PK 2021 Aromatic

Crop: Rice (*Oryza sativa* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Earlier than	Super Basmati
Later than	Kissan Basmati
Maturity duration	Medium
Type of variety	Fine
Seedling Characteristics	
Seedling color	Green
Coleoptile color	Colorless
Stem Characteristics	

Mature stem length	110-115 cm
Stem height	Tall
Taller than	Kissan Basmati
Shorter than	Basmati 515
Stem attitude	Erect
Stem length	Medium (111-130 cm)
Stem thickness	Medium (0.4-0.55 cm)
Stem stiffness	Stiff
No. Of nodes/ stem	8
Internode color	Light yellow
Tillers/plant	22-24
Maturity straw color	Straw
Leaf Characteristics	
Leaf length	80-85 cm
Leaf length of blade	Long (> 45 cm)
Leaf width	Medium (1-2 cm)
Leaf color	Green
Leaf anthocyanin	Absent
Leaf pubescence	Absent
Leaf senescence	Intermediate
Ligule colour	Papery
Ligule length	1-2 mm
Ligule shape	Acute
Leaf auricle	Absent
Collar colour	Pale green
Flag leaf attitude	Semi erect
Flag leaf length	37-45 cm
Flag leaf width	0.9-1.9 cm
Panicle Characteristics	
Days to 50% heading	88 days
Panicle length	Long (26-30 cm)

Panicle type	Medium compact
Spikelet density	Semi dense
Panicle curvature	Semi-straight
Branches/ panicle	Moderate
Secondary branches	Present
Intensity of secondary branches	Weak
Attitude of branches	Erect to semi-erect
Awning at flowering	Short & partly
Awning at maturity	Absent
Awn color at flowering	Straw
Awn color at maturity	Straw
Spikelets/panicle	135
Sterility	Very low
Shattering	Low
Thresh ability	Intermediate
Seed Characteristics	
Seed awning	Absent
Stigma colour	White
Apiculus color (anthesis)	Brown
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Absent
Husk pubescence	Sparse
Pubescence length	Short
Seed shape	Spear
Seed length	11.1 mm
Seed width	1.4 mm
Seed thickness	1.3 mm
Seed size	Extra long
1000 seed weight	21 g
Seed dormancy	Low

Sterile lemma color	Straw
Yield	3890 (kg/acre)
Kernel Characteristics	
Kernel size	Extra long
Kernel length	8.2 mm
Kernel thickness	1.2 mm
Kernal colour	White
Kernal appearance	Translucent
Chalkiness	Absent
Kernal quality	Fine
Kernal aroma	Strong
Cooking quality	Excellent
Environment Stability	
Drought tolerance	Least tolerant
Tolerance to salinity	Least tolerant
Tolerance to acid soils	Least tolerant
Cold tolerance	Least tolerant
Heat tolerance	Least tolerant

Opposition can be filed up to: 30-11-2024

10. Application No.: PBRR-Rice-104/24

Name of the applicant: Principal Scientist, Rice Research Institute, Kala Shah Kaku

Institute: Rice Research Institute, Kala Shah Kaku

Name of Breeder(s):

- i. Syed Sultan Ali, RRI, KSK
- ii. Dr. Muhammad Sabar, RRI, KSK
- iii. Dr. Muhammad Akhter, AARI, Fsd.
- iv. Ch. Muhammad Rafiq, RRI, KSK
- v. Mr. Muhammad Iqbal, RRI, KSK
- vi. Dr. Muhammad Ijaz, RRS, Bahawalpur
- vii. Mr. Tahir Latif, RRI, KSK
- viii. Mr. Zulqarnain Haider, RRI, KSK
- ix. Mr. Rana Ahsan Raza Khan, RRI, KSK
- x. Mrs. Misbah Riaz, RRI, KSK

- xi. Mrs. Tahira Bibi, RRI, KSK
- xii. Mr. Awais Riaz, RRI, KSK
- xiii. Mrs. Fariha Shahzadi, RRI, KSK
- xiv. Mrs. Hira Sehar, RRI, KSK

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: KSK-111 (H)

Crop: Rice (*Oryza sativa* L.)

Type of the variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Breeding method	Hybridization
Earlier than	Basmati varieties
Later than	KSK 133
Photo sensitivity	Intermediate
Type of variety	Medium fine
Seedling Characteristics	
Seedling color	Light green
Coleoptile color	Colorless
Stem Characteristics	
Mature stem length	96 cm
Stem height	Tall
Taller than	KSK 133
Shorter than	Basmati varieties
Stem attitude	Semi erect
Stem length	Medium (111-130 cm)
Stem thickness	Thin (<0.4 cm)
Stem stiffness	Semi stiff
No. Of nodes/ stem	4

Internode color	Light yellow
Tillers/plant	21
Maturity straw color	Straw
Leaf Characteristics	
Leaf length	61 cm
Leaf length of blade	Short (<30 cm)
Leaf width	Narrow <1 cm
Leaf color	Pale green
Leaf anthocyanin	Absent
Leaf pubescence	Sparse
Leaf sheath color	Pale green
Leaf senescence	Late
Ligule colour	Papery
Ligule length	12 mm
Ligule shape	Acute
Auricle colour	Pale green
Collar colour	Pale green
Flag leaf attitude	Semi erect
Flag leaf length	15 cm
Flag leaf width	1.8 cm
Panicle Characteristics	
Days to 50% heading	79 days
Panicle length	Long (26-30 cm)
Panicle type	Medium compact
Spikelet density	Semi dense
Panicle curvature	Semi-straight
Panicle exertion	Well exerted
Branches/ panicle	Moderate
Secondary branches	Present
Intensity of secondary branches	Weak
Attitude of branches	Erect to semi-erect

Awning at flowering	Short & partly
Awning at maturity	Short & partly
Awn color at flowering	Straw
Awn color at maturity	Straw
Spikelets/panicle	162
Sterility	Low
Shattering	Very low
Thresh ability	Easy
Seed Characteristics	
Seed awning	Absent
Stigma colour	White
Apiculus color (anthesis)	Brown
Apiculus color (maturity)	Straw
Husk color	Straw
Husk pigment	Absent
Husk pubescence	Sparse
Pubescence length	Short
Seed shape	Spear
Seed length	8 mm
Seed width	1.4 mm
Seed thickness	1.3 mm
Seed size	Extra long
1000 seed weight	20 g
Seed dormancy	Low
Sterile lemma color	Straw
Yield	3642 (kg/acre)
Kernel Characteristics	
Kernel size	Medium long
Kernel length	7.1 mm
Kernel thickness	1.2 mm
Kernal colour	White

Kernal appearance	Translucent
Chalkiness	Present
Chalky position	Abdominal
Kernal quality	Fine
Kernal aroma	Weak
Cooking quality	Fair
Environment Stability	
Flowering response to seasons	Stable
Drought tolerance	Tolerant
Tolerance to salinity	Tolerant

Opposition can be filed up to: 30-11-2024

11. Application No.: PBRR-Mustard-108/24

Name of the applicant: Regional Agricultural Research Institute, Bahawalpur

Institute: Regional Agricultural Research Institute, Bahawalpur

Name of Breeder(s):

- i. Mr. Abdul Majid Khan, Scientific Officer, RARI, Bahawalpur
- ii. Dr. Lal Hussain Akhtar, Principal Scientist, RARI Bahawalpur

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Cholistani Raya (BRJ-1304)

Crop: Mustard (*Brassica juncea* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Area adaptation	Central & South Punjab
Origin	Local
Maturity duration	Medium

Sowing time	1st fortnight of October
Plant Characteristics	
Growth habit	Compact
Plant type	Determinate
Plant height	Tall (76-100 cm)
Plant colour	Green
Leaf Characteristics	
Leaf colour	Green
Leaf attitude	Semi erect (66-85)
Leaf lobes	Medium (7-8)
No. of lobes	Medium (3-5)
Dentations of margin	Entire
Leaf length	Medium (15-20 cm)
Leaf width	Medium (7-8 cm)
Leaf hairiness	Sparse
Leaf margin indentation	Medium
Terminal segment	Medium
Leaf attachment	Stalked
Petiole base	Medium
Petiole length	2.2-2.5 cm
Leaf anthocyanin	Absent
Stem Characteristics	
Main shoot length	Long > 60 cm
Stem shape	Ridged
Stem thickness mm	32-36 mm
Stem stiffness	Stiff
Stem pith	Moderate
Stem ramification	At high level
Flower Characteristics	
Days to 50 % flowering	Medium (41-50 days)
Petal colour	Yellow

Petal length	Medium (1.2-1.5 cm)
Petal width	Medium (0.7-0.8 cm)
Anther dotting	Present
Pod Characteristics	
Pod attitude	Erect
Pod shape	Cylindricate
Pod length	45 mm
Pod width	50 mm
Beak shape	Conical
Beak length	3-4 mm
Shattering	Resistant
Seed Characteristics	
Seed colour	Black
Seed size	Bold
Reticulation	Absent
1000 seed weight	4.7-5.1 g
Erucic acid%	High (26-50%)
Glucosinolates	High (61-90 µm/g)
Oil %	High (43-46%)
Environmental Adaptation	
Flowering response to seasons	Variable
Drought tolerance	Most tolerant
Tolerance to salinity	Medium
Tolerance to acid soils	Medium
Cold tolerance	Medium
Heat tolerance	Medium
Resistance to insects/pests	Tolerant
Resistance to diseases	Tolerant
DISTINGUISH CHARACTERS	Days to flowering (47), Days to maturity (146), plant height (160cm), lodging resistant, shattering resistant, 1000 seed weight (4.7-5.1 g), yield potential 3014 Kg/ha

Opposition can be filed up to: 02-11-2024

ISSUANCE OF CERTIFICATES TO PBR PROTECTED PLANT VARIETIES

The Plant Breeders' Rights Registry has issued the following Twenty Four (24) certificates of Plant Breeders' Rights in favor of the varieties listed below:

S. No.	Crop	Institute/ Agency	Name of Variety
1	Maize	Pioneer Hi-Bred Private Limited	Surkhaab
2	Cotton	Centre of Excellence in Molecular Biology, Lahore	CKC-03
3	Cotton	Centre of Excellence in Molecular Biology, Lahore	CKC-01
4	Maize	Bayer Pakistan Limited	DK-8022
5	Cotton	Centre of Excellence in Molecular Biology, Lahore	CKC-06
6	Canola	Ayub Agriculture Research Institute	Super Canola
7	Wheat	Cereal Crops Research Institute, Pirsabak Nowshera	Taskeen-2022
8	Wheat	Cereal Crops Research Institute, Pirsabak Nowshera	Abaseen-2021
9	Wheat	Cereal Crops Research Institute, Pirsabak Nowshera	Pirsabak-2021
10	Wheat	Cereal Crops Research Institute, Pirsabak Nowshera	Zarghoon-2021
11	Wheat	Wheat Research Institute, Faisalabad	Arooj-22
12	Maize	Petal Seed Company	CS-230
13	Maize	Kissan Seed Corporation, Sahiwal	SB-1189
14	Maize	Kissan Seed Corporation, Sahiwal	SB-111
15	Maize	Kissan Seed Corporation, Sahiwal	SB-9333
16	Canola	Oil Seeds Research Institute, AARI, Faisalabad	TM Canola
17	Sunflower	Oil Seeds Research Institute, AARI, Faisalabad	Orisun-741
18	Sunflower	Oil Seeds Research Institute, AARI, Faisalabad	Orisun-751
19	Wheat	Cereal Crops Research Institute, Pirsabak Nowshera	Pirsabak-23
20	Wheat	Cereal Crops Research Institute, Pirsabak Nowshera	Khyber-23
21	Sunflower	Crop Science Institute NARC, Islamabad	NARC-SUN-2020
22	Sesame	Oilseeds Research Institute, AARI, Faisalabad	Faisalabad Til
23	Mustard	Regional Agricultural Research Institute, Bahawalpur	Cholistani Raya
24	Sesame	Oilseeds Research Institute, AARI, Faisalabad	Anmol Til

Any action in violation of the provision of subsection (1) of section 22 shall be deemed to be an infringement including;

- a) Using a protected variety under this act without legal authorization to produce an essentially derived variety or F1 hybrid for commercial utilization
- b) Offering for sale or selling or marketing of the reproductive or vegetative propagating material of the protected variety in Pakistan
- c) Importing the reproductive or vegetative propagating material of the protected variety into Pakistan or exporting it from Pakistan
- d) Conditioning or multiplying the reproductive or vegetative propagating material of the protected
- e) Carrying out any of the acts identified in clauses (b), (c) and (d) in relation to an essentially derived variety provided the protected variety is not itself an essentially derived variety
- f) Instigating or promoting any of the acts identified in clause (b), (c), (d) and (e)
- g) Authorizing any person to produce, sell, market or otherwise deal with a protected variety and
- h) Stocking for any of the purposes mentioned in clauses (a) to (g)

In case of proved violation of rights, the court may order compensation to the owner of rights, fine not exceeding the quantum of loss caused or benefit derived from such violation.

DETAILS OF PBR PROTECTED PLANT VARIETIES

1. Application No.: PBRR-Maize-12/21

Name of the Applicant: Corteva Agriscience Pakistan Limited

Institute: Pioneer Hi-Bred Private Limited

Name of Breeder(s):

Anand Pandravada, Pioneer Hi-Bred Private Limited Survey No.
383, 384 & 385, Tunki Kalsa Village, Wargal Mandal, Siddipet
District 502336, Telangana State, India

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Surkhaab

Crop: Maize (*Zea mays* L.)

Type of Variety: Hybrid

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Days to Maturity	110-115	110-115
Maturity Duration	Medium	Medium
Sowing Time	January to end March	January to end March
SEEDLING CHARACTERISTICS		
Seedling length (cm)	9.1	8.02
Coleoptile's anthocyanin	Absent	Absent
First leaf colour	Green	Green
First leaf tip	Round	Round
First leaf length (mm)	39.1	38.5
First leaf width (mm)	12.9	12.3
STEM CHARACTERISTICS		

Stem length (cm)	249.6	248.8
Taller than	Shahkaar	Shahkaar
Shorter than	P1429	P1429
Internodal length (cm)	17.9	17.4
Internodal diameter (cm)	5.4	5.8
Mid node anthocyanin	Absent	Absent
Stem tillering	Absent	Absent
Root anthocyanin	Absent	Absent
LEAF CHARACTERISTICS		
Leaf Color	Dark Green	Dark Green
Mid leaves attitude	Semi Erect	Semi Erect
Leaf Sheath Anthocyanin	Absent	Absent
Leaf Margin waves	Few	Few
Cob Leaf Length cm	98.7	99.8
Cob leaf width cm	8.9	9.5
Sheath hairs	Absent	Absent
Leaf Senescence	Late	Late
Leaves per Plant	21	21
Marginal Serration	Weak	Weak
TASSEL CHARACTERISTICS		
50% Tassel emergence (days)	56-63	56-63
50% Tassel emergence (days)		
Tassel length (cm)	37.2	36.3
Tassel stalk length (cm)	29.5	28.3
Exsertion above flag leaf (cm)	7.8	7.2
No. of lateral branches	12	12
Lateral branches density	Dense	Dense
Lateral branches attitude	Semi Erect	Semi Erect
FLOWER CHARACTERISTICS		
Anther fertility	Normal	Normal
Pollen shading	Heavy	Heavy

Anther color	Purple	Purple
Pollen color	Yellow	Yellow
Glume color	Light Green	Light Green
EAR CHARACTERISTICS		
50% silk emergence(days)	65-67	65-67
Silk color	Light Green	Light Green
Insertion height (cm)	115	113
Peduncle length (cm)	12.6	13.8
Ear leafy extensions	Absent	Absent
Ear husk length	Medium	Medium
No. of husk blades	8	8
Ear shape	Cylindrical	Cylindrical
Ear length (cm)	23	22
Ear width (cm)	15.9	16
Seed rows/ear	18	18
Seed/row	44	44
Seed row attitude	Slight Curve	Slight Curve
No. of ears/plant	1	1
Ear weight (g)	256	245
Cob color	Pink	Pink
SEED CHARACTERISTICS		
Seed color	Yellow	Yellow
Seed tip color	Yellow	Yellow
Color of sides	Orange	Orange
Seed type	Semi flint	Semi flint
Seed wax	Present	Present
Seed size	Medium	Medium
1000 Seed weight (g)	263	258
Grain. Cob ratio	82%	82%
Yeild/ha.(mt)	12.8	13.2
Enviromental Adaptibility		

Resistance		
lodging	low	low



Form PB-10
[See Rule 13(1)]

Serial No. 000016

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 16-MZ/12-2021	Dated:	27-04-2021
Crop: Maize	Denomination of Variety: SURKHAAB	
Type: Enlisted	Conventional/GMC: Conventional	
OP/Hybrid: Hybrid	Local/Exotic: Exotic	

As declared

- That Anand Pandrawada

has/have developed new plant variety and also that he is the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CORTEVA AGRISCIENCE PAKISTAN LIMITED

کورٹیوا ایگری سائنس پاکستان لمیٹڈ

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 27th day of April 2021 and expiring on the 26th day of April 2041



Registrar _____

Date of Grant 30-09-2024

2. Application No.: PBRR-Cotton-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* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity duration	Medium	Medium
Days to opening 50%	101	105
SEEDLING CHARACTERISTICS:		
Seedling length (cm)	6	7.5
Seedling colour	Lt.Green	Green
Foliage spot	Absent	Absent
PLANT CHARACTERISTICS:		
Growth habit	compact	Med.Compact
Plant height (cm)	128	148
Plant shape	Cylindrical/Conical	conical
Fruiting branch type	Normal	Short
Monopodia attitude	S,erect	S.erect
Sympodia attitude	S.erect	S.erect

Nodes to 1st monopodia	0--4	0--11
Monopodia/plant	1--4	0--3
Sympodia/plant	28--28	30--41
Stem pigmentation	Medium	Medium
Stem tip hairiness	Medium	Medium
Bud gossypol	Normal	Normal
LEAF CHARACTERISTICS:		
Foliage density	Intermediate	Intermediate
Leaf colour	Green	Green
Leaf length (cm)	9.5	9.5
Leaf width (cm)	11	10
Petiole length (cm)	8	9
Petiole anthocyanin	Present	Present
Leaf attitude	Horizontal	S. erect
Leaf type	Normal	Normal
Leaf appearance	Flat	Flat
Leaf nectaries	Present	Present
Leaf hairiness	Medium	Medium
FLOWER CHARACTERISTICS:		
Days to flowering 50%	55	60
Flowering duration	Medium	Medium
Flower size	Medium	Medium
Sepal pigmentation	Present	Present
Petal spot	Absent	Absent
Nectaries	Present	Present
Petal colour	Creamy	Creamy
Anther colour	Creamy	Creamy
Stamen density	S. Dense	S. Dense
Position of stigma	Exserted	Exserted
Stigma exertion (mm)	2.5	3
Stigma height (mm)	17	15.7

Calyx size	Intermediate	Intermediate
BOLL CHARACTERISTICS:		
Boll bearing habit	Solitary	Solitary
Boll shape	round	round/Oval
Boll colour	Green	Green
Boll size (boll width at maximum point)	Medium	Medium
Beak size	Medium	Medium
Boll length (cm)	3.6	3.8
Boll breadth (cm)	2.7	3
Boll broad at	Lower.Mid	Middle
Peduncle length (cm)	1.53	1.3
Boll surface	Roughly pitted	smooth
Gossypol	high	Normal
Bracteole length	Medium	Medium
Bracteole width	Medium	Medium
Bolls/plant	37	32--36
Boll opening	Open	Open
Boll weight (g)	3.2	3
SEED CHARACTERISTICS:		
Seed size	Medium	Medium
Seed shape	S.Orbi.Obovate	S.Orbi
Seed length (mm)	8.5	8.3
Seed width (mm)	4.5	4.8
Seed index (g)	8	7.8
Seed coat colour	Brown	D.Brown
Seed fuzz	Fuzzy	Fuzzy
Fuzz colour	D.White	D.White
FIBRE CHARACTERISTICS:		
Fibre colour	White	White
GOT/Lint (%)	40	39.5
Staple length (mm)	27.2	27.5

Fineness (micronaire)	4.7	4.8
Fibre strength (tppsi)	29.1	29.1
Lint index (g)	6.5	6.5
Uniformity (%)	82.3	84.2
Fibre length group	Med.Long	Med.Long



Form PB-10
[See Rule 13(1)]

Serial No. 000017

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	17-COT/13-2021	Dated:	16-06-2021
Crop:	Cotton	Denomination of Variety:	CKC-03
Type:	Registered	Conventional/GMC:	GMC
OP/Hybrid:	OP	Local/Exotic:	Local

As declared

- That **Dr. Idrees Ahmad Nasir & Dr. Abdul Qayyum Rao**

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CENTER OF EXCELLENCE IN MOLECULAR BIOLOGY, LAHORE

سینٹر آف ایکسیلنس ان مالیکیولر بائیولوجی، لاہور

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of **Twenty** years starting from the **16th** day of **June 2021** and expiring on the **15th** day of **June 2041**



Registrar

Date of Grant 30.09.2024

3. Application No.: PBRR-Cotton-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* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity duration	Medium	Medium
Days to opening 50%	105	105
SEEDLING CHARACTERISTICS:		
Seedling length (cm)	11.25	8.5
Seedling colour	Green	Green
Foliage spot	Absent	Absent
PLANT CHARACTERISTICS:		
Growth habit	Med.Compact	compact
Plant height (cm)	145	157
Plant shape	conicle	Cylindrical
Fruiting branch type	short	short
Monopodia attitude	S.erect	S.erect
Sympodia attitude	S.erect	S.erect

Nodes to 1st monopodia	9--10	0--8
Monopodia/plant	1--2	0--1
Sympodia/plant	23--33	23--26
Stem pigmentation	Medium	Medium
Stem tip hairiness	Medium	Medium
Bud gossypol	Normal	Normal
LEAF CHARACTERISTICS:		
Foliage density	Intermediate	Intermediate
Leaf colour	Green	Green
Leaf length (cm)	9	11.5
Leaf width (cm)	12	12
Petiole length (cm)	8.5	8
Petiole anthocyanin	present	Present
Leaf attitude	S.Erect	Horizontal
Leaf type	Normal	Normal
Leaf appearance	Flat	Flat
Leaf nectaries	Present	Present
Leaf hairiness	Medium	Medium
FLOWER CHARACTERISTICS:		
Days to flowering 50%	60	61
Flowering duration	Medium	Medium
Flower size	Medium	Medium
Sepal pigmentation	Present	Present
Petal spot	Absent	Absent
Nectaries	Present	Present
Petal colour	Creamy	Creamy
Anther colour	Creamy	Creamy
Stamen density	S.Dense	S.Dense
Position of stigma	Exserted	Exserted
Stigma exertion (mm)	3	1.5
Stigma height (mm)	27	15

Calyx size	Intermediate	Intermediate
BOLL CHARACTERISTICS:		
Boll bearing habit	Solitary	Solitary
Boll shape	oval	round
Boll colour	Green	Green
Boll size (boll width at maximum point)	Medium	Medium
Beak size	Medium	Short/Medium
Boll length (cm)	3.7	3.6
Boll breadth (cm)	2.9	2.87
Boll broad at	lower.Midd	Middle
Peduncle length (cm)	1.4	1.4
Boll surface	finely	finely
Gossypol	Normal	Normal
Bracteole length	Medium	Medium
Bracteole width	Medium	Medium
Bolls/plant	20.5	28--34
Boll opening	open	open
Boll weight (g)	3	3.2
SEED CHARACTERISTICS:		
Seed size	Medium	Medium
Seed shape	Obovate	S.Obl.Obovate
Seed length (mm)	9	8.8
Seed width (mm)	5	4.5
Seed index (g)	6.57	7.43
Seed coat colour	D.Brown	D.Brown
Seed fuzz	S.Fuzzy	Fuzzy
Fuzz colour	D.White	D.White
FIBRE CHARACTERISTICS:		
Fibre colour	white	white
GOT/Lint (%)	40.5	40.44
Staple length (mm)	26.8	24.2

Fineness (micronaire)	5.4	5.4
Fibre strength (tppsi)	25	28.5
Lint index (g)	4.57	5.2
Uniformity (%)	86.2	79.5
Fibre length group	medium	Medium



Form PB-10
[See Rule 13(1)]

Serial No. 000018

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	18-COT/14-2021	Dated:	16-06-2021
Crop:	Cotton	Denomination of Variety:	CKC-01
Type:	Registered	Conventional/GMC:	GMC
OP/Hybrid:	OP	Local/Exotic:	Local

As declared

- That Dr. Idrees Ahmad Nasir, Dr. Abdul Qayyum Rao & Tayyab Husnain

has/have developed ^{new} plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CENTER OF EXCELLENCE IN MOLECULAR BIOLOGY, LAHORE

سینٹر آف ایکسلینس ان مالیکیولر بائیولوجی، لاہور

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 16th day of June 2021 and expiring on the 15th day of June 2041.



Registrar

Date of Grant 30.09.2024

4. Application No.: PBRR-Maize-33/21

Name of the applicant: Bayer Pakistan Limited

Institute: Bayer Pakistan Limited

Name of Breeder(s):

Prashant Golegaonkar-Monsanto Thailand Limited 56 M006
Dinthong Wongthong Phitsanulok, 65130 Thailand

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: DK-8022

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

Name of initial variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
STEM CHARACTERISTICS		
Stem length (cm)	252-254	250-254
Internodal length (cm)	15	16-17
Internodal diameter (cm)		5-6
Mid node anthocyanin	Absent	Absent
Stem tillering	Absent	Absent
Stem anthocyanin coloration of brace roots		
Root anthocyanin	Absent	Absent
LEAF CHARACTERISTICS		
Leaf Color	Dark Green	Dark Green
Mid leaves attitude		
Leaf Sheath Anthocyanin	Absent	Absent
Cob Leaf Length cm	92	91-93
Cob leaf width cm		9-11
Marginal Serration	Absent	Absent
TASSEL CHARACTERISTICS		

Tassel length (cm)	37	35-40
Tassel stalk length (cm)	10 (top leaf node to basal branches)	11 (top leaf node to basal branches)
Exsertion above flag leaf (cm)	7	7-8
No. of lateral branches	9	8-10
Lateral branches density	Intermodal	Intermodal
FLOWER CHARACTERISTICS		
Anther color	Purple	Purple
Pollen color	Yellow	Yellow
EAR CHARACTERISTICS		
Silk color	Pink	Pink
Peduncle length (cm)	7	5-7
Ear husk length	29-30 cm	
No. of husk blades	7-8	7-8
Ear shape	Slight Conical	Slight Conical
No. of ears/plant	1	1
Ear weight (g)	250-255	255-257
Cob color	Orange	Orange
SEED CHARACTERISTICS		
Seed rows/ear	16-18	16-18
Seed/row	38-40	38-40



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000019



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	19-MZ/33-2021	Dated:	30-09-2021
Crop:	Maize	Denomination of Variety:	DK8022
Type:	Enlisted	Conventional/GMC:	Conventional
OP/Hybrid:	Hybrid	Local/Exotic:	Exotic

As declared

- That Prashant Golegoankar

has/have developed new plant variety and also that he is the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

BAYER PAKISTAN (PRIVATE) LIMITED, KARACHI

بایر پاکستان (پرائیویٹ) لمیٹڈ، کراچی

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 30th day of September 2021 and expiring on the 29th day of September 2041



Registrar
Date of Grant 30-09-2024

5. Application No.: PBRR-Cotton-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	
	1st Year	2nd Year
Maturity duration	Medium	Medium
Days to opening 50%	90	91
SEEDLING CHARACTERISTICS:		
Seedling length (cm)	10.5	9
Seedling colour	Lt.Green	Lt.Green
Foliage spot	Absent	Absent
PLANT CHARACTERISTICS:		
Growth habit	compact	Med.Compact
Plant height (cm)	150	148
Plant shape	Cylindrical	conical
Fruiting branch type	Normal	Normal
Monopodia attitude	S.erect	S.erect
Sympodia attitude	S.erect	S.erect

Nodes to 1st monopodia	0-7	4
Monopodia/plant	0-3	2
Sympodia/plant	25-31	23
Stem pigmentation	Medium	Medium
Stem tip hairiness	Medium	Medium
Bud gossypol	Normal	Normal
LEAF CHARACTERISTICS:		
Foliage density	Intermediate	Intermediate
Leaf colour	Green	Green
Leaf length (cm)	9.7	10
Leaf width (cm)	12.17	14
Petiole length (cm)	9.17	9
Petiole anthocyanin	Present	Present
Leaf attitude	S.Erect	Horizontal
Leaf type	Normal	Normal
Leaf appearance	Flat	Flat
Leaf nectaries	Present	Present
Leaf hairiness	Medium	Sparse
FLOWER CHARACTERISTICS:		
Days to flowering 50%	58	57
Flowering duration	Medium	Medium
Flower size	Medium	medium
Sepal pigmentation	Present	Absent
Petal spot	Absent	Absent
Nectaries	Present	Present
Petal colour	Creamy	Creamy
Anther colour	Creamy	Creamy
Stamen density	S.Dense	Dense
Position of stigma	Exserted	Exserted
Stigma exertion (mm)	5.3	2
Stigma height (mm)	21	13

Calyx size	Intermediate	Intermediate
BOLL CHARACTERISTICS:		
Boll bearing habit	Solitary	Solitary
Boll shape	round	Round
Boll colour	Green	Green
Boll size (boll width at maximum point)	Medium	Medium
Beak size	Medium	Short
Boll length (cm)	4	3.6
Boll breadth (cm)	3	2.8
Boll broad at	Middle	middle
Peduncle length (cm)	1.6	1.5
Boll surface	Finely	Smooth
Gossypol	normal	Normal
Bracteole length	Medium	Medium
Bracteole width	Medium	Medium
Bolls/plant	30--40	27--30
Boll opening	Open	open
Boll weight (g)	3.5	3.5
SEED CHARACTERISTICS:		
Seed size	Medium	Medium
Seed shape	Obovate	Oblong.S.Orbi.
Seed length (mm)	8	7.5
Seed width (mm)	4	4.5
Seed index (g)	7	8.68
Seed coat colour	D.brown	Brown
Seed fuzz	fuzzy	Fuzzy
Fuzz colour	D.White	D.White
FIBRE CHARACTERISTICS:		
Fibre colour	White	White
GOT/Lint (%)	42	42
Staple length (mm)	28.1	28.3

Fineness (micronaire)	5	4.6
Fibre strength (tppsi)	27.9	29
Lint index (g)	4.32	6.5
Uniformity (%)	80.8	86.7
Fibre length group	Long	Long



Form PB-10
[See Rule 13(1)]

Serial No. 000020

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 20-COT/58-2022 Dated: 18-07-2022
Crop: Cotton Denomination of Variety: CKC-06
Type: Registered Conventional/GMC: GMC
OP/Hybrid: OP Local/Exotic: Local

As declared

- That Dr. Idrees Ahmad Nasir & Dr. Abdul Qayyum Rao

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CENTER OF EXCELLENCE IN MOLECULAR BIOLOGY, LAHORE

سینٹر آف ایکسیلنس ان مالیکیولر بائیولوجی، لاہور

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 18th day of July 2022 and expiring on the 17th day of July 2042



Registrar

Date of Grant 30-09-2024

6. Application No.: PBRR-Canola-42/21

Name of the Applicant: Chief Scientist (ORI)

Institute: ORI, AARI

Name of Breeder(s):

i. Muhammad Aftab, Chief Scientist, Oil Seeds Research Institute, Faisalabad

ii. Tariq Mahmood, Principal Scientist, Oil Seeds Research Institute, Faisalabad

iii. Hafiz Saad Bin Mustafa, Scientific Officer, Oil Seeds Research Institute, Faisalabad

iv. Dr. Ejaz ul Hassan Scientific Officer, Oil Seeds Research Institute, Faisalabad

v. Dr. Mariam Hassan, Scientific Officer, Oil Seeds Research Institute, Faisalabad

Application for: New Plant Variety

Denomination of Variety: Super Canola

Crop: Canola (*Brassica napus*)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity days	145-150	160-165
Maturity duration	Medium	Medium
Crop Season	Rabi	Rabi
Sowing time	Mid October	Mid October
Seedling Characteristics		
Growth habit	Erect	Erect
Seedling length cm	6.0-8.0	3.0-4.5
Cotyledon length mm	10-12	9-10
Cotyledon width mm	18-20	14-16

Seedling anthocyanin	Strong	Strong
Plant Characteristics		
Plant height cm	185-202	190-225
Plant type	determinate	determinate
Growth habit	Intermediate	Intermediate
Plant color	Deep Green	Deep Green
Leaf Characteristics		
Leaf color	Deep Green	Deep Green
Leaf attitude	Semi Erect	Semi Erect
Leaf size	Large	Large
Leaf length cm	16-20.5	20-25
Leaf width cm	14-18	15-17
Petiole base	Medium	Medium-Broad
Petiole length cm	30-47	18-23
Leaf lobing	Deeply lobed	Deeply lobed
Leaf Margin indent	Weak to Medium	Weak-Medium
Terminal segment	Medium	Large
Leaf hair	Absent	Absent
Leaf auricles	Absent (partially present)	Absent (partially present)
Leaf anthocyanin	Absent	Absent
Leaf attachment	Stalked	Stalked
Stem characteristics		
Stem shape	Round	Round
Stem thickness mm	17.54-25.66	18-22
Stem stiffness	Weak to Medium	Weak-Medium
Stem pith	Hollow	Hollow
Ramification	Low level	Low level
Flower Characteristics		
Days to flower 50%	60-65	70-75
Petal color	Yellow	Yellow
Anther dotting	Absent	Absent

Pollination	Self	Self
Pod Characteristics		
Pod shape	Flat	Flat
Pod anthocyanin	Absent	Absent
Pod attitude	Horizontal	Horizontal
Pod density	Medium to Dense	Medium-Dense
Pod length mm	58-64	52-56
Pod Width mm	6.14-6.6	5.0-7.0
Pedicle length	24-29 (cm)	2.0-3.0(cm)
Beak shape	Conical	Conical
Beak length mm	8-11	12-16
Shattering	Medium	Medium
Seed Characteristics		
Seed color	Blackish	Blackish
Seed size	Medium	Medium
Reticulation	Absent	absent
1000 seed weight gms	2.4	5.07
RESISTANT TO		
Lodging	Susceptible	



Form PB-10
[See Rule 13(1)]

Serial No. 000021

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	21-CN/42-2021	Dated:	21-12-2021
Crop:	Canola	Denomination of Variety:	Super Canola
Type:	Registered	Conventional/GMC:	Conventional
OP/Hybrid:	OP	Local/Exotic:	Local

As declared

- That Muhammad Aftab, Tariq Mahmood, Hafiz Saad Bin Mustafa, Dr. Ejaz-ul-Hasan & Dr. Mariam Hassan

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

OILSEEDS RESEARCH INSTITUTE, FAISALABAD

آئل سیڈز ریسرچ انسٹی ٹیوٹ، فیصل آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 21st day of December 2021 and expiring on the 20th day of December 2041



Registrar

Date of Grant 30-09-2024

7. Application No.: PBRR-Wheat-62/22

Name of the Applicant: Cereal Crops Research Institute, Pirsabak Nowshera

Institute: CCRI, Pirsabak Nowshera

Name of Breeder(s):
i. Dr. Syed Asghar (PRO)
ii. Dr. Abdul Bari (Director)
iii. Dr. Khilwat Afridi (SRO)
iv. Dr. Muhammad Khalid (SRO)
v. Dr. Muhammad Saeed (SRO)

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Taskeen-2022

Crop: Wheat (*Triticum aestivum* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Growth habit	Erect	Semi erect
Coleoptile color	White	White
Seedling anthocyanin	Absent	Absent
PLANT CHARACTERISTICS		
Plant height (cm)	118	113
Color booting stage	Green	Pale Green
STEM CHARACTERISTICS		
Stem anthocyanin	Absent	Absent
Stem waxy bloom	Medium	Medium
Stem wall thickness	Intermediate	Thin

Stem stiffness	Intermediate	Stiff
Stem diameter mm	5.5	4.4
Peduncle length cm	34.5	39.5
Productive tillers/m	140	99
Nodes/Stem	5	4
Straw Color	Yellowish White	Yellowish White
Lodging	High	Medium
FLAG LEAF CHARACTERISTICS		
Flag leaf attitude	Semi erect	Recurved
Flag leaf twist	Medium	Weak
Length cm	31	33.1
Width cm	2.3	2
Sheath wax	Medium	Medium
Sheath hairiness	Absent	Absent
Auricle hairiness	Medium	Medium
Auricle anthocyanin	Absent	Absent
EAR CHARACTERISTICS		
Ear emergence	95	99
Ear size	Medium	Medium
Length cm	14	13.5
Width cm	1.5	2
Wax at anthesis	Medium	Medium
Color at maturity	Yellowish White	Yellowish White
Ear shape	Tapering	Tapering
Ear density	Lax	Medium Dense
Super numerary spikelets	Absent	Absent
Speltoids	Absent	Absent
Shattering	Low	Resistant
Ear kink/twist	Weak	Weak
Ear Awnedness	Awned	Awned
Awn distribution	Whole	Whole

Awn length	Medium	Long
Awn color	Yellowish White	Yellowish White
Awn habit	Divaricate	Erect
Anther Color	Yellow	Yellow
Rachis hairs apical	Medium	Medium
Rachis hairs margin	Medium	Absent
Rachis length cm	13	13
Rachis width mm	3.5	1.3
No. of segments	20	19
GLUME CHARACTERISTICS		
Glume length mm	10.5	16
Glume width Size mm	4.5	3
Glume length Size	Medium	Medium
Glume width size	Medium	Medium
Lower glume shape	Broad Flat	Narrow Humped
Glume attachment	Medium	Medium
Glume Pubescence	Present	Present
Glume surface	Rough	Rough
Lower glume shoulder shape	Round	Slopping
Lower glume shoulder width	Narrow	Medium
Beak length mm	3	6
Lower glume beak shape	Short Straight	Long/Sharp
Lower glume Beak Size	Short	Medium
Beak spicules	Present	Present
Keel spicules	3	1
Glume internal hair	Medium	Absent
Glume internal imprint	Absent	Absent
SEED CHARACTERISTICS		
Seed color	Amber	Amber
Seed surface	Opaque	Opaque
Seed shape	Ovate	Eliptical

Seed length mm	7.5	7
Seed width mm	3.5	2.5
Seed Thickness mm	3	3
Seed size	Medium	Medium
Seed brush	Medium	Medium
Seed Germ size	Medium	Medium
1000 seed weight	37	37
Seed groove	Intermediate	Intermediate
Seed/ Ear	40	45
Seed hardness	Medium	Medium
Variants	Nil	Nil



Form PB-10
[See Rule 13(1)]

Serial No. 000022

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 22-WT/62-2022	Dated: 26-08-2022
Crop: Wheat	Denomination of Variety: Taskeen-2022
Type: Registered	Conventional/GMC: Conventional
OP/Hybrid: OP	Local/Exotic: Exotic

As declared

- That Dr. Syed Asghar, Dr. Abdul Bari, Dr. Khilwat Afridi, Dr. Muhammad Khalid, & Dr. Muhammad Saeed

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CEREAL CROPS RESEARCH INSTITUTE, NOWSHERA

سیریل کراپ ریسرچ انسٹیٹیوٹ، نوشہرہ

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 26th day of August 2022 and expiring on the 25th day of August 2042



Registrar

Date of Grant 30-09-2024

8. Application No.: PBRR-Wheat-63/22

Name of the Applicant: Cereal Crops Research Institute, Pirsabak Nowshera

Institute: CCRI, Pirsabak Nowshera

Name of Breeder(s):
i. Dr. Syed Asghar (PRO)
ii. Dr. Gulzar Ahmad (PRO)
iii. Dr. Khilwat Afridi (SRO)
iv. Dr. Muhammad Khalid (SRO)
v. Dr. Muhammad Saeed (SRO)

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Abaseen-2021

Crop: Wheat (*Triticum aestivum* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Growth habit	Semi erect	Erect
Coleoptile color	White	White
Seedling anthocyanin	Absent	Absent
PLANT CHARACTERISTICS		
Plant height (cm)	110	126
Color booting stage	Green	Green
STEM CHARACTERISTICS		
Stem anthocyanin	Absent	Absent
Stem waxy bloom	Medium	Medium
Stem wall thickness	Thin	Intermediate

Stem stiffness	Intermediate	Stiff
Stem diameter mm	5	5
Peduncle length cm	36.33	36.5
Productive tillers/m	130	135
Nodes/Stem	5.5	4
Straw Color	Yellowish White	Yellowish White
Lodging	Absent	Absent
FLAG LEAF CHARACTERISTICS		
Flag leaf attitude	Semi erect	Semi erect
Flag leaf twist	Weak	Weak
Length cm	30.83	26
Width cm	1.8	1.7
Sheath wax	Medium	Medium
Sheath hairiness	Absent	Absent
Auricle hairiness	Sparse	Medium
Auricle anthocyanin	Medium	Absent
EAR CHARACTERISTICS		
Ear emergence	101	103
Ear size	Medium	Medium
Length cm	12.5	9
Width cm	1.5	1.5
Wax at anthesis	Medium	Medium
Color at maturity	Yellowish White	Yellowish White
Ear shape	Parallel	Tapering
Ear density	Lax	Medium dense
Super numerary spikelets	Absent	Absent
Speltoids	Absent	Absent
Shattering	Resistant	Resistant
Ear kink/twist	Weak	Weak
Ear Awnedness	Awned	Awned
Awn distribution	Whole	Whole

Awn length	Long	Medium
Awn color	Yellowish White	Yellowish White
Awn habit	Semi erect	Divaricate
Anther Color	Yellow	Yellow
Rachis hairs apical	Medium	Medium
Rachis hairs margin	Medium	Medium
Rachis length cm	11.5	8
Rachis width mm	3	3
No. of segments	18	17.5
GLUME CHARACTERISTICS		
Glume length mm	11	10
Glume width Size mm	4.5	3.5
Glume length Size	Medium	Medium
Glume width size	Medium	Medium
Lower glume shape	Broad Flat	Broad Flat
Glume attachment	Medium	Medium
Glume Pubescence	Present	Present
Glume surface	Rough	Smooth
Lower glume shoulder shape	Round	Round
Lower glume shoulder width	Medium	Medium
Beak length mm	5	5
Lower glume beak shape	Long sharp	Curved/Humped
Lower glume Beak Size	Medium	Medium
Beak spicules	Present	Present
Keel spicules	3	3
Glume internal hair	Sparse	Sparse
Glume internal imprint	Absent	Absent
SEED CHARACTERISTICS		
Seed color	Amber	Amber
Seed surface	Opaque	Opaque
Seed shape	Ovate	Ovate

Seed length mm	6.5	7
Seed width mm	4	3.8
Seed Thickness mm	3	3
Seed size	Medium	Medium
Seed brush	Medium	Short
Seed Germ size	Medium	Medium
1000 seed weight	36.5	37
Seed groove	Intermediate	Intermediate
Seed/ Ear	50	38
Seed hardness	Medium	Medium
Variants	Nil	Nil



Form PB-10
[See Rule 13(1)]

Serial No. 000023

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 23-WT/63-2022	Dated: 26-08-2022
Crop: Wheat	Denomination of Variety: Abaseen-2021
Type: Registered	Conventional/GMC: Conventional
OP/Hybrid: OP	Local/Exotic: Exotic

As declared

- That Dr. Syed Asghar, Dr. Gulzar Ahmad, Dr. Khilwat Afridi, Dr. Muhammad Khalid, & Dr. Muhammad Saeed

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CEREAL CROPS RESEARCH INSTITUTE, NOWSHERA

سیریل کراپ ریسرچ انسٹیٹیوٹ، نوشہرہ

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 26th day of August 2022 and expiring on the 25th day of August 2042



Registrar

Date of Grant 30-09-2024

9. Application No.: PBRR-Wheat-64/22

Name of the Applicant: Cereal Crops Research Institute, Pirsabak Nowshera

Institute: CCRI, Pirsabak Nowshera

Name of Breeder(s):
i. Dr. Syed Asghar (PRO)
ii. Dr. Gulzar Ahmad (PRO)
iii. Dr. Khilwat Afridi (SRO)
iv. Dr. Muhammad Khalid (SRO)
v. Dr. Muhammad Saeed (SRO)

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Pirsabak-2021

Crop: Wheat (*Triticum aestivum* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Growth habit	Semi erect	Prostrate
Coleoptile color	White	White
Seedling anthocyanin	Absent	Absent
PLANT CHARACTERISTICS		
Plant height (cm)	113	113
Color booting stage	Green	Green
STEM CHARACTERISTICS		
Stem anthocyanin	Absent	Absent
Stem waxy bloom	Medium	Medium
Stem wall thickness	Intermediate	Thin

Stem stiffness	Stiff	Soft
Stem diameter mm	5	4-5
Peduncle length cm	37.66	43
Productive tillers/m	132	165
Nodes/Stem	5	4
Straw Color	Yellowish White	Yellow
Lodging	absent	low
FLAG LEAF CHARACTERISTICS		
Flag leaf attitude	Semi erect	Semi erect
Flag leaf twist	Medium	Weak
Length cm	20.5	18.66
Width cm	1.7	1.8
Sheath wax	Medium	Medium
Sheath hairiness	Absent	Absent
Auricle hairiness	Medium	Sparse
Auricle anthocyanin	Absent	Absent
EAR CHARACTERISTICS		
Ear emergence	107	100
Ear size	Medium	Small
Length cm	13	6.5
Width cm	1.4	1.6
Wax at anthesis	Medium	Medium
Color at maturity	Yellowish White	Yellowish White
Ear shape	Tapering	Parallel
Ear density	Medium dense	Very dense
Super numerary spikelets	Absent	Absent
Speltoids	Absent	Absent
Shattering	Resistant	Resistant
Ear kink/twist	Strong	Medium
Ear Awnedness	Awned	Awned
Awn distribution	Whole	Whole

Awn length	Medium	Long
Awn color	Yellowish White	Yellowish White
Awn habit	Semi erect	Divaricate
Anther Color	Yellow	Yellow
Rachis hairs apical	Sparse	Medium
Rachis hairs margin	Medium	Absent
Rachis length cm	12	5
Rachis width mm	3	3
No. of segments	23	14
GLUME CHARACTERISTICS		
Glume length mm	9.5	10.5
Glume width Size mm	4	4.5
Glume length Size	Medium	Medium
Glume width size	Medium	Medium
Lower glume shape	Broad Flat	Broad Flat
Glume attachment	Medium	Medium
Glume Pubescence	Present	Present
Glume surface	Rough	Rough
Lower glume shoulder shape	Round	Slopping
Lower glume shoulder width	Broad	Very narrow
Beak length mm	6	4-3
Lower glume beak shape	Long sharp	Short Straight
Lower glume Beak Size	Long	Medium
Beak spicules	Present	Present
Keel spicules	3	3
Glume internal hair	Sparse	Sparse
Glume internal imprint	Small	Small
SEED CHARACTERISTICS		
Seed color	Amber	Amber
Seed surface	Opaque	Shiny
Seed shape	Ovate	Ovate

Seed length mm	7.5	7.5
Seed width mm	3.5	4
Seed Thickness mm	3	3.5
Seed size	Medium	Medium
Seed brush	Medium	Short
Seed Germ size	Medium	Medium
1000 seed weight	37.5	38
Seed groove	Intermediate	Shallow
Seed/ Ear	45	39.5
Seed hardness	Hard	Hard



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000024



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 24-WT/64-2022	Dated: 26-08-2022
Crop: Wheat	Denomination of Variety: Pirsabak-2021
Type: Registered	Conventional/GMC: Conventional
OP/Hybrid: OP	Local/Exotic: Exotic

As declared

- That Dr. Syed Asghar, Dr. Gulzar Ahmad, Dr. Khilwat Afridi, Dr. Muhammad Khalid, & Dr. Muhammad Saeed has/have developed new plant variety and also that they are the true breeder(s).
- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CEREAL CROPS RESEARCH INSTITUTE, NOWSHERA

سیریل کراپ ریسرچ انسٹیٹیوٹ، نوشہرہ

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 26th day of August 2022 and expiring on the 25th day of August 2042



Registrar

Date of Grant 30-09-2024

10. Application No.: PBRR-Wheat-65/22

Name of the Applicant: Cereal Crops Research Institute, Pirsabak Nowshera

Institute: CCRI, Pirsabak Nowshera

Name of Breeder(s):
i. Dr. Syed Asghar (PRO)
ii. Dr. Gulzar Ahmad (PRO)
iii. Dr. Khilwat Afridi (SRO)
iv. Dr. Muhammad Khalid (SRO)
v. Dr. Muhammad Saeed (SRO)

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Zarghoon-2021

Crop: Wheat (*Triticum aestivum* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity Duration	Medium
SEEDLING CHARACTERISTICS	
Growth habit	Semi erect
Coleoptile color	White
Seedling anthocyanin	Absent
PLANT CHARACTERISTICS	
Plant height (cm)	115
Color booting stage	Green
STEM CHARACTERISTICS	
Stem anthocyanin	Absent
Stem waxy bloom	Medium
Stem wall thickness	Intermediate
Stem stiffness	Stiff

Stem diameter mm	5
Peduncle length cm	28.5
Productive tillers/m	135
Nodes/Stem	4-5
Straw Color	Yellowish White
Lodging	absent
FLAG LEAF CHARACTERISTICS	
Flag leaf attitude	Semi erect
Flag orientation	
Flag leaf twist	Weak
Length cm	28.5
Width cm	2.4
Sheath wax	Medium
Sheath hairiness	Absent
Auricle hairiness	Medium
Auricle anthocynin	Absent
EAR CHARACTERISTICS	
Ear emergence	97
Ear size	Medium
Length cm	11.5
Width cm	1.35
Wax at anthesis	Medium
Color at maturity	Yellowish White
Ear shape	Tapering
Ear density	Lax
Super numerary spikelets	Absent
Speltoids	Absent
Shattering	Resistant
Ear kink/twist	Weak
Ear Awnedness	Awned
Awn distribution	Whole

Awn length	Medium
Awn color	Yellowish White
Awn habit	Divaricate
Anther Color	Yellow
Rachis hairs apical	Medium
Rachis hairs margin	Sparse
Rachis length cm	10.5
Rachis width mm	3
No. of segments	19.5
GLUME CHARACTERISTICS	
Glume length mm	9.5
Glume width Size mm	4.5
Glume length Size	Medium
Glume width size	Medium
Lower glume shape	Narrow humped
Glume attachment	Medium
Glume Pubescence	Present
Glume surface	Rough
Lower glume shoulder shape	Indented
Lower glume shoulder width	Medium
Beak length mm	3.5
Lower glume beak shape	Long sharp
Lower glume Beak Size	Medium
Beak spicules	Present
Keel spicules	3
Glume internal hair	Sparse
Glume internal imprint	Medium
SEED CHARACTERISTICS	
Seed color	Amber
Seed surface	Opaque
Seed shape	Ovate

Seed length mm	6.5
Seed width mm	3.5
Seed Thickness mm	3
Seed size	Medium
Seed brush	Medium
Seed Germ size	Medium
1000 seed weight	39
Seed groove	Deep
Seed/ Ear	38.5
Seed hardness	Hard
Variants	Nil



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000025



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 25-WT/65-2022

Dated: 26-08-2022

Crop: Wheat

Denomination of Variety: Zarghoon-2021

Type: Registered

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Exotic

As declared

- That Dr. Syed Asghar, Dr. Gulzar Ahmad, Dr. Khilwat Afridi, Dr. Muhammad Khalid, & Dr. Muhammad Saeed

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CEREAL CROPS RESEARCH INSTITUTE, NOWSHERA

سیریل کراپ ریسرچ انسٹی ٹیوٹ، نوشہرہ

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 26th day of August 2022 and expiring on the 25th day of August 2042



Registrar

Date of Grant 30-09-2024

11. Application No.: PBRR-Wheat-73/22

Name of the Applicant: Wheat Research Institute, Faisalabad

Institute: Wheat Research Institute, Faisalabad

Name of Breeder(s):

- i. Dr. Javed Ahmad
- ii. Dr. Aziz-ur-Rehman
- iii. Dr. Nadeem Ahmad
- iv. Dr. Muhammad Zulkiffal
- v. Muhammad Hammad Tanveer
- vi. Majid Nadeem

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Arooj-22

Crop: Wheat (*Triticum aestivum* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Growth habit	Semi Erect	Semi erect
Coleoptile color	White	White
Seedling anthocyanin	Absent	Absent
PLANT CHARACTERISTICS		
Plant height (cm)	111	114
Color booting stage	Green	Pale Green
STEM CHARACTERISTICS		
Stem anthocyanin	Absent	Absent
Stem waxy bloom	Medium	Medium

Stem wall thickness	Intermediate	Thin
Stem stiffness	Soft	Intermediate
Stem diameter mm	5	4
Peduncle length cm	40.5	38
Productive tillers/m	148	132
Nodes/Stem	5	4
Straw Color	Light red	Yellowish White
Lodging	High	Medium
FLAG LEAF CHARACTERISTICS		
Flag leaf attitude	Semi Erect	Semi Erect
Flag leaf twist	Medium	Weak
Length cm	24	27
Width cm	1.8	1.96
Sheath wax	Medium	Medium
Sheath hairiness	Absent	Absent
Auricle hairiness	Sparse	Medium
Auricle anthocyanin	Weak	Absent
EAR CHARACTERISTICS		
Ear emergence	99	93
Ear size	Medium	Medium
Length cm	10	10.5
Width cm	1.25	1
Wax at anthesis	Medium	Medium
Color at maturity	Yellowish White	Yellowish White
Ear shape	Tapering	Tapering
Ear density	Medium Dense	Medium Dense
Super numerary spikelets	Absent	Absent
Speltoids	Absent	Absent
Shattering	Low	Resistant
Ear kink/twist	Weak	Weak
Ear Awnedness	Awned	Awned

Awn distribution	Whole	Whole
Awn length	Short	Medium
Awn color	Yellowish White	Yellowish White
Awn habit	Divaricate	Erect
Anther Color	Yellow	Yellow
Rachis hairs apical	Medium	Absent
Rachis hairs margin	Medium	Absent
Rachis length cm	8.5	10
Rachis width mm	3	2
No. of segments	17	17
GLUME CHARACTERISTICS		
Glume length mm	10	14
Glume width Size mm	4.5	3
Glume length Size	Medium	Medium
Glume width size	Medium	Medium
Lower glume shape	Broad Flat	Narrow humped
Glume attachment	Medium	Medium
Glume Pubescence	Present	Absent
Glume surface	Rough	Rough
Lower glume shoulder shape	Round	Round
Lower glume shoulder width	Medium	Medium
Beak length mm	4.5-5	6
Lower glume beak shape	Long Sharp	Long
Lower glume Beak Size	Medium	Medium
Beak spicules	Present	Absent
Keel spicules	3	1
Glume internal hair	Sparse	Absent
Glume internal imprint	Medium	Small
SEED CHARACTERISTICS		
Seed color	Amber	Amber
Seed surface	Opaque	Shinny

Seed shape	Ovate	Oval
Seed length mm	7	6
Seed width mm	4	2.5
Seed Thickness mm	3	2
Seed size	Medium	Medium
Seed brush	Medium	Medium
Seed Germ size	Medium	Medium
1000 seed weight	37.5	42
Seed groove	Shallow	Intermediate
Seed/ Ear	38	55
Seed hardness	Hard	Medium
Variants	Nil	Nil



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000026



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 26-WT/73-2022 Dated: 16-12-2022
Crop: Wheat Denomination of Variety: AROOJ-22
Type: Registered Conventional/GMC: Conventional
OP/Hybrid: OP Local/Exotic: Exotic

As declared

- That Dr. Javed Ahmad, Dr. Aziz-ur-Rehman, Dr. Nadeem Ahmad, Muhammad Zulkiffal, Muhammad Hammad Tanveer & Majid Nadeem

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

WHEAT RESEARCH INSTITUTE, FAISALABAD

وہیت ریسرچ انسٹیٹیوٹ، فیصل آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 16th day of December 2022 and expiring on the 15th day of December 2042



Registrar

Date of Grant 30-09-2024

12. 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 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
Exsertion above flag leaf (cm)	10.16
No. of lateral branches	10
Lateral branches density	Semi dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shading	Medium
Anther color	Yellowish
Pollen color	Yellow
Glume color	Green
EAR CHARACTERISTICS	
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 row arrangement	
Seed tip color	Whitish
Color of sides	Whitish
Seed shape	Indent
Seed length (mm)	
Seed width (mm)	
Seed thickness (mm)	
Seed size	Large
Seed weight/ear (g)	318
1000 Seed weight (g)	450
Yeild/ ha. (MT)	11



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000027



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 27-MZ/77-2023

Dated: 31-01-2023

Crop: Maize

Denomination of Variety: CS-230

Type: New

Conventional/GMC: Conventional

OP/Hybrid: Hybrid

Local/Exotic: Local

As declared

- That Muhammad Ishfaq & Muhammad Mushtaq

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

PETAL SEED COMPANY, MARDAN

پیتل سید کمپنی، مردان

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 31st day of January 2023 and expiring on the 30th day of January 2043



Registrar

Date of Grant 30-09-2024

13. Application No.: PBRR-Maize-79/23

Name of the applicant: Kissan Seed Corporation, Sahiwal

Institute: Kissan Seed Corporation, Sahiwal

Name of Breeder(s):

i. Shafiq Ur Rehman

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: SB-1189

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
Sowing Time	Early March to End of August	Early March to End of August
SEEDLING CHARACTERISTICS		
Seedling length (cm)	3.4-3.6	3.4-3.6
Coleoptile's anthocyanin	Medium	Medium
First leaf colour	Green	Green
First leaf tip	Round	Round
First leaf length (mm)	6.2-6.5	6.2-6.5
First leaf width (mm)	1.7-1.9	1.7-1.9
PLANT CHARACTERISTICS FOR INBRED LINES ONLY		
Plant length up to flag leaf	NA	NA
PLANT CHARACTERISTICS FOR HYBRID AND OPEN POLLINATED VARIETIES ONLY		

Plant length up to flag leaf	Long	Long
STEM CHARACTERISTICS		
Stem length (cm)	265-267	265-267
Taller than	CS-200	CS-200
Internodal length (cm)	20.0-21.0	20.0-21.0
Internodal diameter (cm)	2.0-2.3	2.0-2.3
Mid node anthocyanin	Absent	Absent
Stem tillering	Absent	Absent
Stem anthocyanin coloration of brace roots	Present	Present
LEAF CHARACTERISTICS		
Leaf angle between blade and stem (on leaf just above upper ear)	Wide	Wide
Leaf attitude of blade (on leaf just above upper ear)	Straight	Straight
Leaf width of blade (leaf of upper ear)	Broad	Broad
TASSEL CHARACTERISTICS		
50% Tassel emergence (days)	56-60	56-60
50% Tassel emergence (days)	Late	Late
Anthocyanin coloration at the base of glume (in middle third of main axis)	Present	Present
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present	Present
Angle between main axis and lateral branches	Narrow	Narrow
Attitude of lateral branches (in lower third of tassel)	Curved	Curved
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Present	Present
Density of spikelets (in middle third of tassel)	Dense	Dense
Tassel angle between main axis and lateral branches	Narrow	Narrow
Earlier than	NA	NA
Later than	NA	NA
Tassel length (cm)	45-48	45-48

Tassel stalk length (cm)	54-58	54-58
Exsertion above flag leaf (cm)	9-10	9-10
No. of lateral branches	24-26	24-26
Lateral branches density	Dense	Dense
FLOWER CHARACTERISTICS		
Anther fertility	Normal	Normal
Pollen shading	Heavy	Heavy
Anther color	Pink	Pink
Pollen color	Yellow	Yellow
Glume color	Green	Green
EAR CHARACTERISTICS		
50% silk emergence(days)	60-64	60-64
Earlier than	NA	NA
Later than	NA	NA
Silk color	Pink	Pink
Insertion height (cm)	110-112	110-112
Peduncle length (cm)	10.0-10.5	10.0-10.5
Ear leafy extensions	Short	Short
Ear husk length	Medium	Medium
No. of husk blades	12	12
Ear shape	Cylindrical	Cylindrical
Ear length (cm)	19.5-20.0	19.5-20.0
Ear diameter (cm)	5.4-5.5	5.4-5.5
Seed rows/ear	14-16	14-16
Seed/row	41-43	41-43
Seed row arrangment	Straight	Straight
No. of ears/plant	1-2	1-2
Ear weight (g)	316	316
Cob color	Pink	Pink
SEED CHARACTERISTICS		
Seed color	White	White

Seed tip color	White	White
Color of sides	White	White
Seed shape	Indented	Indented
Seed length (mm)	11	11
Seed width (mm)	9	9
Seed thickness (mm)	4	4
Seed type	Dent	Dent
Seed wax	Absent	Absent
Seed size	Bold	Bold
Seed weight/ear (g)	285	285
1000 Seed weight (g)	471	471
Grain. Cob ratio	90%	90%
Yeild/ha.(mt)	13	13
Seed sweetness	Absent	Absent
Seed waxiness	Absent	Absent
Seed opaqueness	Absent	Absent
Enviromental Adaptibility		
Resistance		
lodging		
Distinguishing Characteristics:	(i) It's a medium maturity hybrid. (ii) It's maturity range is 110-115 days. (iii) Very tall hybrid with dark green broad leaves and strong purple roots. (iv) Purplish anthocynin on husk blades of cobs and stem. (v) Heavy tassle with long branches and dark pinkish anthers. Tassle branches strongly curved after pollen shadding/pollination. (vi) Cylindrical and bold cobs almost at the middle of the plant. (vii) Anthocyanin coloration on brace roots (purple) and on the sheaths of the leaves starting just above the brace roots. but	(i) very tall hybrid with dark green broad leaves and strong roots. (ii) Purplish anthocyanin on husk blades of cobs and stem. (iii) Heavy tassle with long branches and dark pinkish anthers. (iv) Cylindrical and bold cobs almost at the middle of the plan. (V) Anthocyanin coloration on brace roots (purple) and on the lower sheaths of the leaves just above the brace roots.

this anthocyanin is more prominent upto the cob leaf and on the leaves above the cobs is mainly prominent at the backside of the leaves just starting over the sheaths. (viii) Besides having broad leaves cobs are easily visible inside the crop/rows. (ix) It has stay green character.



Form PB-10
[See Rule 13(1)]

Serial No. 000028



Government of Pakistan Plant Breeders' Rights Registry

CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 28-MZ/79-2023 Dated: 16-06-2023
Crop: Maize Denomination of Variety: SB-1189
Type: New Conventional/GMC: Conventional
OP/Hybrid: Hybrid Local/Exotic: Local

As declared

- That Shafiq Ur Rehman

has/have developed new plant variety and also that he is the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

SHAFIQ UR REHMAN, KISSAN SEED CORPORATION, SAHIWAL

شفیق الرحمن، کسان بیج کارپوریشن، ساہیوال

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 16th day of June 2023 and expiring on the 15th day of June 2043



Registrar

Date of Grant 30-09-2024

14. Application No.: PBRR-Maize-80/23

Name of the applicant: Kissan Seed Corporation, Sahiwal

Institute: Kissan Seed Corporation, Sahiwal

Name of Breeder(s):

i. Shafiq Ur Rehman

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: SB-111

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
Sowing Time	Mid of May to End of August	Mid of May to End of August
SEEDLING CHARACTERISTICS		
Seedling length (cm)	3.6-3.8	3.4-3.7
Coleoptile's anthocyanin	Medium	Medium
First leaf colour	Dark Green	Dark Green
First leaf tip	Round	Round
First leaf length (mm)	5.3-5.5	5.2-5.6
First leaf width (mm)	1.7-1.9	1.8-1.9
PLANT CHARACTERISTICS FOR HYBRID AND OPEN POLLINATED VARIETIES ONLY		
Plant length up to flag leaf	Long (>180 cm)	Long (>180 cm)
STEM CHARACTERISTICS		

Stem length (cm)	280-285	284-288
Taller than	CS-200	CS-200
Shorter than	NA	
Internodal length (cm)	18.0-20.0	18.0-19.5
Internodal diameter (cm)	1.8-1.9	1.8-2.0
Mid node anthocyanin	Absent	Absent
Stem tillering	Absent	Absent
Stem anthocyanin coloration of brace roots	Present	Present
LEAF CHARACTERISTICS		
Leaf angle between blade and stem (on leaf just above upper ear)	Wide	Wide
Leaf attitude of blade (on leaf just above upper ear)	Straight	Straight
Leaf width of blade (leaf of upper ear)	Broad	Broad
TASSEL CHARACTERISTICS		
50% Tassel emergence (days)	52-56	54-58
50% Tassel emergence (days)	Late	Late
Anthocyanin coloration at the base of glume (in middle third of main axis)	Present	Present
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present	Present
Angle between main axis and lateral branches	Narrow	Narrow
Attitude of lateral branches (in lower third of tassel)	Curved	Curved
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Absent	Absent
Density of spikelets (in middle third of tassel)	Dense	Dense
Tassel angle between main axis and lateral branches	Narrow	Narrow
Earlier than	NA	NA
Later than	NA	NA
Tassel length (cm)	34-36	33-35
Tassel stalk length (cm)	44-47	43-46

Exsertion above flag leaf (cm)	10-11	10-11
No. of lateral branches	16-18	14-16
Lateral branches density	Dense	Dense
FLOWER CHARACTERISTICS		
Anther fertility	Normal	Normal
Pollen shading	Heavy	Heavy
Anther color	Pink	Pink
Pollen color	Yellow	Yellow
Glume color	Pink	Pink
EAR CHARACTERISTICS		
50% silk emergence(days)	57-60	58-62
Earlier than	NA	NA
Later than	NA	NA
Silk color	Pink	Pink
Insertion height (cm)	135-138	137-140
Peduncle length (cm)	5.0-5.5	5.5-6.0
Ear leafy extensions	Absent	Absent
Ear husk length	Medium	Medium
No. of husk blades	10	10
Ear shape	Cylindrical	Cylindrical
Ear length (cm)	20.3	20.1
Ear diameter (cm)	4.8	5
Seed rows/ear	14-16	14-16
Seed/row	42-44	42-44
Seed row arrangment	Straight	Straight
No. of ears/plant	1	1
Ear weight (g)	270	273
Cob color	Pink	Pink
SEED CHARACTERISTICS		
Seed color	White	White
Seed tip color	White	White

Color of sides	White	White
Seed shape	Indented	Indented
Seed length (mm)	12.4	12.5
Seed width (mm)	9.1	9.12
Seed thickness (mm)	4.3	4.5
Seed type	Dent	Dent
Seed wax	Absent	Absent
Seed size	Bold	Bold
Seed weight/ear (g)	230	235
1000 Seed weight (g)	415	395
Grain. Cob ratio	85%	85%
Yeild/ha.(mt)	12	12
Seed sweetness	Absent	Absent
Seed waxiness	Absent	Absent
Seed opaqueness	Absent	Absent
Distinguishing Characteristics:	(i) Tall hybrid with dark green, broad and semi erect leaves. (ii) Semi erect and long branches of the tassels with pinkish anthers. (iii) Purplish and same plants with purplish and green shades mixed shaded, roots but both with anthocyanin coloration on the lower sheaths of the leaves just above the brace roots. This shade is very prominent up to the cob leaf. (iv) Long cobs with purplish shade on the husk covers (v) Have more leaves area which make it thick or dense looking crop. (vi) It has stay green character.	(i) Tall hybrid with dark green, broad and semi erect leaves. (ii) Semi erect and long branches of the tassels with pinkish anthers. (iii) Purplish and same plants with purplish and green shades mixed shaded, roots but both with anthocyanin coloration on the lower sheaths of the leaves just above the brace roots. This shade is very prominent up to the cob leaf. (iv) Long cobs with purplish shade on the husk covers (v) Have more leaves area which make it thick or dense looking crop. (vi) It has stay green character.



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000029



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 29-MZ/80-2023

Dated: 16-06-2023

Crop: Maize

Denomination of Variety: SB-111

Type: New

Conventional/GMC: Conventional

OP/Hybrid: Hybrid

Local/Exotic: Local

As declared

- That Shafiq Ur Rehman

has/have developed new plant variety and also that he is the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

SHAFIQ UR REHMAN, KISSAN SEED CORPORATION, SAHIWAL

شفیق الرحمن، کسان بیج کارپوریشن، ساہیوال

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 16th day of June 2023 and expiring on the 15th day of June 2043



Registrar

Date of Grant 30-09-2024

15. Application No.: PBRR-Maize-81/23

Name of the applicant: Kissan Seed Corporation, Sahiwal

Institute: Kissan Seed Corporation, Sahiwal

Name of Breeder(s):

i. Shafiq Ur Rehman

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: SB-9333

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
Sowing Time	January to end to march and June to end of August	January to end to march and June to end of August
SEEDLING CHARACTERISTICS		
Seedling length (cm)	3.4-3.5	3.4-3.5
Coleoptile's anthocyanin	Absent	Absent
First leaf colour	Dark Green	Dark Green
First leaf tip	Round	Round
First leaf length (mm)	3.8-4.0	3.8-4.0
First leaf width (mm)	1.8-1.9	1.8-1.9
PLANT CHARACTERISTICS FOR HYBRID AND OPEN POLLINATED VARIETIES ONLY		
Plant length up to flag leaf	Long	Long
STEM CHARACTERISTICS		

Stem length (cm)	280-283	280-283
Taller than	YH-5427	YH-5427
Internodal length (cm)	18.0-18.5	18.0-18.5
Internodal diameter (cm)	1.8-2.0	1.8-2.0
Mid node anthocyanin	Present	Present
Stem tillering	Absent	Absent
Stem anthocyanin coloration of brace roots	Absent	Absent
LEAF CHARACTERISTICS		
Leaf angle between blade and stem (on leaf just above upper ear)	Wide	Wide
Leaf attitude of blade (on leaf just above upper ear)	Straight	Straight
Leaf width of blade (leaf of upper ear)	Broad	Broad
TASSEL CHARACTERISTICS		
50% Tassel emergence (days)	52-56	52-56
50% Tassel emergence (days)	Medium	Medium
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Absent	Absent
Angle between main axis and lateral branches	Wide (in lower third of tassel)	Wide (in lower third of tassel)
Attitude of lateral branches (in lower third of tassel)	Curved	Curved
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Absent	Absent
Density of spikelets (in middle third of tassel)	Dense	Dense
Tassel angle between main axis and lateral branches	Narrow	Narrow
Earlier than	YH-5427	YH-5427
Later than		
Tassel length (cm)	33-36	33-36
Tassel stalk length (cm)	40-44	40-44
Exsertion above flag leaf (cm)	7-8	7-8

No. of lateral branches	16-18	16-18
Lateral branches density	Dense	Dense
FLOWER CHARACTERISTICS		
Anther fertility	Normal	Normal
Pollen shading	Heavy	Heavy
Anther color	Yellow	Yellow
Pollen color	Yellow	Yellow
Glume color	Green	Green
EAR CHARACTERISTICS		
50% silk emergence(days)	56-60	56-60
Earlier than	YH-5427	YH-5427
Silk color	Green	Green
Insertion height (cm)	152-154	152-154
Peduncle length (cm)	11.0-12.0	11.0-12.0
Ear leafy extensions	Absent	Absent
Ear husk length	Medium	Medium
No. of husk blades	9-10	9-10
Ear shape	Conico Cylindrical	Conico Cylindrical
Ear length (cm)	17.5-18.5	17.5-18.5
Ear diameter (cm)	4.9-5.2	4.9-5.2
Seed rows/ear	16-18	16-18
Seed/row	38-40	38-40
Seed row arrangement	Spiral	Spiral
No. of ears/plant	1-2	1-2
Ear weight (g)	208-215	208-215
Cob color	Pink	Pink
SEED CHARACTERISTICS		
Seed color	Purple	Purple
Seed tip color	White	White
Color of sides	Purple	Purple
Seed shape	Indented	Indented

Seed length (mm)	12.6-12.8	12.6-12.8
Seed width (mm)	8.1-8.3	8.1-8.3
Seed thickness (mm)	4.1-4.3	4.1-4.3
Seed type	Semi Dent	Semi Dent
Seed wax	Absent	Absent
Seed size	Medium	Medium
Seed weight/ear (g)	178-180	178-180
1000 Seed weight (g)	290-294	290-294
Grain. Cob ratio	86%	86%
Yeild/ha.(mt)	10.0-11.0	10.0-11.0
Seed sweetness	Absent	Absent
Seed waxiness	Absent	Absent
Seed opaqueness	Absent	Absent
Distinguishing Characteristics:	(i) Dark Green Plants with thick leaves and cobs trend bending away from the main stem. (ii) Anthocynin coloration on the sheaths of all leaves. (iii) Anthocynin coloration at the base (backside of the leaves). (Iv) Semi erect and long branches of tassles which curved after pollination. (v) It has stay green character.	(i) Dark Green Plants with thick leaves and cobs trend bending away from the main stem. (ii) Anthocynin coloration on the sheaths of all leaves. (iii) Anthocynin coloration at the base (backside of the leaves). (Iv) Semi erect and long branches of tassles which curved after pollination. (v) It has stay green character.



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000030



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 30-MZ/81-2023 Dated: 16-06-2023
Crop: Maize Denomination of Variety: SB-9333
Type: New Conventional/GMC: Conventional
OP/Hybrid: Hybrid Local/Exotic: Local

As declared

- That Shafiq Ur Rehman

has/have developed new plant variety and also that he is the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

SHAFIQ UR REHMAN, KISSAN SEED CORPORATION, SAHIWAL

شفیق الرحمن، کسان بیج کارپوریشن، ساہیوال

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 16th day of June 2023 and expiring on the 15th day of June 2043



Registrar

Date of Grant 30-09-2024

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

Name of the Applicant: Oil Seeds Research Institute, AARI, Faisalabad

Institute: Oil Seeds Research Institute, AARI, Faisalabad

Name of Breeder(s):

- i. Tariq Mahmood
- ii. Hafiz Saad Bin Mustafa
- iii. Dr. Sundas Shahzad
- iv. Dr. Mariam Hassan
- v. Huma Qamar
- vi. Dr. Ejaz-ul-Hassan
- vii. Muhammad Riaz

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: TM Canola

Crop: Canola (*Brassica napus* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity days	135-145	
Maturity duration	Medium	Medium
Crop Season	Rabi	
Sowing time	1st fortnight of October	October
Seedling Characteristics		
Growth habit	Erect	
Seedling anthocyanin	Medium to Strong	
Plant Characteristics		
Plant height cm	170-190	Tall 170-191

Plant type	Determinate	determinate
Growth habit	Indeterminate	Intermediate
Plant color	Dark green	Green
Leaf Characteristics		
Leaf color	Green	Dark Green
Leaf attitude	Semi erect	Open
Leaf size	Large	
Leaf length cm		Long 21-27.5
Leaf width cm		Broad 14-17.5
Petiole base	Medium to Broad	Deeply lobed
Petiole length cm	22-26	18.5-24
Leaf lobes		Present
No. of lobes		Many
Leaf lobing	Deeply lobed	
Dentations of margin		Lyrate
Leaf Margin indent	Medium	Weak
Terminal segment	Large	Large
Leaf hair	Absent	Absent
Leaf auricles	Partly Present	
Leaf anthocyanin	Absent	Absent
Leaf attachment	Lower leaf stalked & upper leaves sessile	Stalked
Stem characteristics		
Main shoot length		Long 113-125 cm
Stem shape	Roundish	Round
Stem thickness mm	15-18	16.5
Stem stiffness	Stiff	Stiff
Stem pith	Hollow	Hollow
Ramification		High level
Flower Characteristics		
Days to flower 50%	55-65	
Flowering duration	Long	Medium

Petal color	Yellow	Yellow
Petal length		Medium 1.1-1.3 cm
Petal width		Medium 0.7-0.8 cm
Anther dotting	Absent	Absent
Pollination	Self	
Pod Characteristics		
Pod shape	Flat	Intermediate
Pod anthocyanin	Absent	
Pod attitude	Horizontal	Divaricated
Pod length mm		7.2-8.3
Pod Width mm		0.5-0.7
Pod surface texture		Smooth-Intermediate
Pedicle length		2.8-3.2 (mm)
Beak shape	Conical	Conical
Beak length mm		1.1-1.7
Shattering	Medium	Medium
Seed Characteristics		
Seed color	Dark brown	Dark Brown
Seed size	Medium	Medium
Reticulation	Absent	Absent
1000 seed weight gms	3.5-4.00	
Seed erucic acid%	0.2-0.4	Low
Seed glucosinolate%	26 µm/g oil free meal	Low
Meal Protien%	34-35	
Yield	Average: 1726 Maximum: 3246	
Seed oil content	40-44%	High
RESISTANT TO		
Lodging	Tolerant	



Form PB-10
[See Rule 13(1)]

Serial No. 000031

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 31-CN/82-2023	Dated: 20-07-2023
Crop: Canola	Denomination of Variety: TM Canola
Type: New	Conventional/GMC: Conventional
OP/Hybrid: OP	Local/Exotic: Local

As declared

- That Tariq Mahmood, Hafiz Saad Bin Mustafa, Dr. Sundas Shahzad, Dr. Mariam Hassan, Huma Qamar, Dr. Ejaz-ul-Hasan & Muhammad Riaz

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

OILSEEDS RESEARCH INSTITUTE, FAISALABAD

آئل سیڈز ریسرچ انسٹی ٹیوٹ، فیصل آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 20th day of July 2023 and expiring on the 19th day of July 2043



Registrar

Date of Grant 30-09-2024

17. 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	
	1st Year	2nd Year
Maturity days	Medium to late	Medium
Normal crop sowing season	Spring	Spring
Suitable for sowing	All sowing	All sowing
Uniformity in maturity	Uniform	Uniform
Seedling Characteristics		
Seedling length cm (14 days)	10.0-11.0	9.6-10.8
Seedling anthocyanin	Medium	Sparse
Seedling hairiness		
Seedling color	Green	Green
Hypocotyl anthocyanin	Absent	Absent

Size of Cotyledon	Medium	Medium
Shape of Cotyledon	Elliptical	Elliptical
Plant/ Stem Characteristics		
Main stem color at heading	Light Green	Green
Growth point	Yellow Green	Yellow Green
Stem anthocyanin	Absent	Absent
Pubescence at the top 5 cm	Weak	Absent-Weak
Stem pubescence length	Short	Short
Stem stiffness	Intermediate	Intermediate
Stem diameter (at mid) cm	2.2-3.0	2.1-2.8
Plant height at full flowering cm	180-200	195-203
Plant height at full flowering		
Stem branching	Absent	Absent
length of internode (in central third of stem)	Medium	Medium
Percent stalk breakage	1-2%	1-2%
Percent root lodging	Nil	Nil
Type of root	Tap	Tap
Leaf Characteristics		
Leaves/plant	25-30	23-28
Leaf color	Green	Green
Leaf anthocyanin on margin of young leaves	Absent	Absent
leaf attitude	Semi Erect	Semi Erect
Leaf surface	Smooth	Smooth
Leaf pubescence	Weak	Sparse
Leaf pubescence length	Short	Short
Leaf length cm	15.0-21.0	16.3-20.8
Leaf width cm	17.0-22.0	16.8-21.5
Leaf size	Medium	Large
Petiole length cm (at bottom)	14.0-18.0	13.4-17.6
Leaf petiole anthocyanin	Absent	Absent

Leaf angle between lower part of petiole stem	Medium	Medium
Leaf shape	Cordate	Cordate
Leaf apex	Acuminate	Acuminate
Leaf base shape	Auriculate	Auriculate
Leaf auricles	Large	Medium-Large
Leaf margin	Dentate	Dentate
Leaf margin indentation depth	Medium	Medium
Leaf margin indentation regularity	Irregular	Irregular
Leaf margin serration (fineness)	Coarse	Medium-Coarse
Leaf venation	Reticulate	Reticulate
Leaf angle of lowest/ lateral veins	Acute	Acute
Leaf height of tip of the blade compared to insertion of petiole	Low	Low-Medium
Leaf habit of petiole	Semi Erect	Semi Erect
Leaf petiole pubescence	Medium	Medium
Leaf senescence	Late	Late
Leaf blistering		
Leaf glossiness	Absent	Absent
Leaf shape of cross section	Weakly Concave	Weakly Concave
Number of leaves on main stem	25-34 High >25	26-32 High >25
Flower Characteristics		
Days to flowering 50%	70-80 (late)	75-80
Bract tightness on bud	Intermediate	Intermediate
Flowering Uniformity	Uniform	Uniform
Ray floret density/ number	Dense	Dense
Ray floret shape	Broad Ovate	Broad Ovate
Ray floret length cm	4.5-6.0	4.3-5.8
Ray floret width cm	1.0-1.5	1.1-1.5
Ray floret color	Yellow	Yellow
Ray floret size	Large	Large
Ray floret petal curling	Flat Petal	Flat Petal
Disc flower color	Yellow	Yellow

Stigma color	Yellow	Yellow
Disc flower anthocyanin of stigma	Absent	Absent
Disc flower production of pollen	Medium	Medium-Good
Pollen color	Yellow	Yellow
Extra floral nectaries	Absent	Absent
Head Characteristics		
Bract length on bud cm	3.0-4.0	2.8-3.7
Heads/ plant	Single	Single
Head size/ diameter cm	Large >20	Large >20
Head shape of grain side	Strongly Convex	Strongly Convex
Head shape uniformity	Uniform	Uniform
Head depth	Medium	Medium
Receptacle thickness cm		
Head pubescence	Medium	Medium
Involucrer length	Short	Medium
Involucrer width	Narrow	Narrow
Involucrer anthocyanin	Absent	Absent
Head bracts (on back)	Many	Many
Bract shape	Rounded	Rounded
Bract size	Large	Large
Bract length of tip	Long	Long
Bract green color of outside	Medium	Medium
Bract anthocyanin	Absent	Absent
Bract attitude in relation of head	Strongly embracing	Strongly embracing
Bract pubescence	Medium	Medium
Bract pubescence length	Short	Short
Head attitude	Turned down with slightly curved stem	Turned down with slightly curved stem
Head angle	180°	180°
Threshability	Moderate	Easy
Shattering	Medium	Low
Seed Characteristics		

Seed shape	Narrow Ovoid	Narrow Ovoid
Seed size	Medium	Medium-Large
Seed length mm	9.0-9.5	8.8-9.4
Seed width mm	4.5-5.5	4.3-5.4
Seed thickness mm	3.0-3.5	3.2-3.4
Seed main color	Black	Black
Seed position of strips	Both	Both
Seed spots/mottling on pericarp	Absent	Absent
Seed pericarp thickness	Medium	Medium
Seed cross section shape	Ovoid	Ovoid
Seed pubescence	Medium	
Seed index (000) gms	48-55	44-52
Distinguishing Characteristics	More drought resistance, larger head size, higher oil content, long duration and yield and par with international check hybrid	More drought resistance, larger head size, higher oil content, long duration and yield at par with international check hybrid



Form PB-10
[See Rule 13(1)]

Serial No. 000032

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 32-SF/83-2023 Dated: 20-07-2023
Crop: Sunflower Denomination of Variety: Orisun-741
Type: New Conventional/GMC: Conventional
OP/Hybrid: Hybrid Local/Exotic: Local

As declared

- That Dr. Sajida Habib, Dr. Ejaz-ul-hasan, Dr. Rizwana Qamar, Hafiz Saad Bin Mustafa, Dr. Salsabeel & Muhammad Riaz

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

OILSEEDS RESEARCH INSTITUTE, FAISALABAD

آئل سیڈز ریسرچ انسٹی ٹیوٹ، فیصل آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 20th day of July 2023 and expiring on the 19th day of July 2043



Registrar

Date of Grant 30-09-2024

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

Name of the applicant: Chief Scientist, ORI, Faisalabad

Institute: Oilseed Research Institute, Faisalabad

Name of Breeder(s):

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

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of 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	
	1st Year	2nd Year
Maturity days	Medium-Late	Medium-Late
Normal crop sowing season	Spring	Spring
Suitable for sowing	All sowing	All sowing
Uniformity in maturity	Uniform	Uniform
Seedling Characteristics		
Seedling length cm (14 days)	9.0-9.5	8.7-9.3
Seedling anthocyanin	Medium	Sparse
Seedling color	Green	Green
Hypocotyl anthocyanin	Absent	Absent
Size of Cotyledon	Medium	Medium

Shape of Cotyledon	Oval	Oval
Plant/ Stem Characteristics		
Main stem color at heading	Light Green	Green
Growth point	Yellow Green	Yellow Green
Stem anthocyanin	Absent	Absent
Pubescence at the top 5 cm	Strong	Medium-Strong
Stem pubescence length	Short	Short
Stem stiffness	Intermediate	Intermediate
Stem diameter (at mid) cm	2.8-3.2	2.7-3.3
Plant height at full flowering cm	160-180	164-178
Stem branching	Absent	Absent
length of internode (in central third of stem)	Medium	Medium
Percent stalk breakage	1-2%	1-2%
Percent root lodging	Nil	Nil
Type of root	Tap	Tap
Leaf Characteristics		
Leaves/plant	30-36	28-34
Leaf color	Green	Green
Leaf anthocyanin on margin of young leaves	Absent	Absent
leaf attitude	Semi Erect	Semi Erect
Leaf surface	Smooth	Smooth
Leaf pubescence	Weak	Sparse
Leaf pubescence length	Short	Short
Leaf length cm	28.0-32.0	26.9-30.9
Leaf width cm	25.0-30.0	23.7-28.9
Leaf size	Large	Large
Petiole length cm (at bottom)	15.0-20.0	14.7-19.7
Leaf petiole anthocyanin	Absent	Absent
Leaf angle between lower part of petiole stem	Large	Large
Leaf shape	Cordate	Cordate

Leaf apex	Acuminate	Acuminate
Leaf base shape	Auriculate	Auriculate
Leaf auricles	Large	Large
Leaf margin	Dentate	Dentate
Leaf margin indentation depth	Medium	Shallow
Leaf margin indentation regularity	Irregular	Irregular
Leaf margin serration (fineness)	Very Coarse	Coarse
Leaf venation	Reticulate	Reticulate
Leaf angle of lowest/ lateral veins	Obtuse	Obtuse
Leaf height of tip of the blade compared to insertion of petiole	Medium	Medium
Leaf habit of petiole	Horizontal	Horizontal
Leaf petiole pubescence	Medium	Medium
Leaf senescence	Late	Late
Leaf glossiness	Absent	Absent
Leaf shape of cross section	Weakly Concave	Weakly Concave
Number of leaves on main stem	30-36 High >25	32-34 High >25
Flower Characteristics		
Days to flowering 50%	75-85 (late)	80-85
Bract tightness on bud	Intermediate	Intermediate
Flowering Uniformity	Uniform	Uniform
Ray floret density/ number	Very dense	Very dense
Ray floret shape	Broad Ovate	Broad Ovate
Ray floret length cm	5.0-6.0	5.1-6.2
Ray floret width cm	1.8-2.4	1.9-2.2
Ray floret color	Yellow	Yellow
Ray floret size	Large	Large
Ray floret petal curling	Flat Petal	Flat Petal
Disc flower color	Yellow	Yellow
Stigma color	Yellow	Yellow
Disc flower anthocyanin of stigma	Absent	Absent
Disc flower production of pollen	Medium	Medium

Pollen color	Yellow	Yellow
Extra floral nectaries	Absent	Absent
Head Characteristics		
Bract length on bud cm	1.5-2.5	1.6-2.3
Heads/ plant	Single	Single
Head size/ diameter cm	Medium	Large >20
Head shape of grain side	Strongly Concave	Strongly Convex
Head shape uniformity	Uniform	Uniform
Head depth	Medium	Medium
Head pubescence	Strong	Dense
Involucel length	Medium	Medium
Involucel width	Medium	Medium
Involucel anthocyanin	Absent	Absent
Head bracts (on back)	Many	Many
Bract shape	Rounded	Rounded
Bract size	Large	Large
Bract length of tip	Long	Medium-Long
Bract green color of outside	Medium	Medium
Bract anthocyanin	Absent	Absent
Bract attitude in relation of head	Not embracing	Not embracing
Bract pubescence	Medium	Medium
Bract pubescence length	Short	Short
Head attitude	Turned down with slightly curved stem	Turned down with slightly curved stem
Head angle	180°	180°
Threshability	Moderate	Easy-Moderate
Shattering	Medium	Low
Seed Characteristics		
Seed shape	Broad Ovoid	Broad Ovoid
Seed size	Medium	Medium-Large
Seed length mm	9.5-11.5	9.7-11.3
Seed width mm	5.0-6.0	5.3-6.1

Seed thickness mm	3.0-4.0	3.3-4.1
Seed main color	Black	Black
Seed position of strips	Both	Both
Seed spots/mottling on pericarp	Absent	Absent
Seed pericarp thickness	Medium	Medium
Seed cross section shape	Ovoid	Ovoid
Seed index (000) gms	54-58	52-58
Distinguishing Characteristics	More drought resistance, larger head size, higher oil content, long duration and yield at par with international check hybrid	More drought resistance, larger head size, higher oil content, long duration and yield and par with international check hybrid



Form PB-10
[See Rule 13(1)]

Serial No. 000033

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 33-SF/84-2023 Dated: 20-07-2023
Crop: Sunflower Denomination of Variety: Orisun-751
Type: New Conventional/GMC: Conventional
OP/Hybrid: Hybrid Local/Exotic: Local

As declared

- That Dr. Sajida Habib, Dr. Rizwana Qamar, Hafiz Saad Bin Mustafa, Dr. Ejaz-ul-hasan Muhammad Anwar & Muhammad Riaz

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

OILSEEDS RESEARCH INSTITUTE, FAISALABAD

آئل سیڈز ریسرچ انسٹیٹیوٹ، فیصل آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 20th day of July 2023 and expiring on the 19th day of July 2043



Registrar

Date of Grant 30-09-2024

19. Application No.: PBRR-Wheat-94/23

Name of the Applicant: Cereal Crops Research Institute, Pirsabak Nowshera

Institute: CCRI, Pirsabak Nowshera

Name of Breeder(s):

- i. Dr. Khilwat Afridi
- ii. Dr. Abdul Bari
- iii. Sartaj Ali
- iv. Dr. Muhammad Khalid
- v. Dr. Muhammad Saeed

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Pirsabak-23

Crop: Wheat (*Triticum aestivum* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Growth habit	Semi erect	Semi erect
Coleoptile color	White	White
Seedling anthocyanin	Absent	Absent
PLANT CHARACTERISTICS		
Plant height (cm)	112	101-125
Color booting stage	Green	Green
STEM CHARACTERISTICS		
Stem anthocyanin	Absent	Absent
Stem waxy bloom	Medium	Strong

Stem wall thickness	Thin	Thick
Stem stiffness	Stiff	Soft
Stem diameter mm	3	3-4
Peduncle length cm	38	30-42
Productive tillers/m	131	138
Nodes/Stem	5	3-4
Straw Color	Yellowish White	Yellowish White
Lodging	Medium	absent
FLAG LEAF CHARACTERISTICS		
Flag leaf attitude	Semi erect	Semi erect
Flag leaf twist	Weak	Medium
Length cm	26.6	18.9-27.2
Width cm	1.7	2-2.2
Sheath wax	Medium	Medium
Sheath hairiness	Absent	Sparse
Auricle hairiness	Medium	Absent
Auricle anthocyanin	Absent	Medium
EAR CHARACTERISTICS		
Ear emergence	99	95
Ear size	Medium	Medium
Length cm	13.5	10-11
Width cm	1	2
Wax at anthesis	Absent	Medium
Color at maturity	Yellowish White	Yellowish White
Ear shape	Tapering	Parallel+Tapering
Ear density	Dense	Lax+Medium Dense
Super numerary spikelets	Absent	Absent
Speltoids	Absent	Absent
Shattering	Resistant	Resistant
Ear kink/twist	Weak	Medium
Ear Awnedness	Awned	Awned

Awn distribution	Whole	Whole
Awn length	Long	Medium
Awn color	Yellowish White	Yellowish White
Awn habit	Horizontal	Erect
Anther Color	Yellow	Yellow
Rachis hairs apical	Sparse	Sparse
Rachis hairs margin	Sparse	Sparse
Rachis length cm	11.5	8-9
Rachis width mm	2	2
No. of segments	22	19-20
GLUME CHARACTERISTICS		
Glume length mm	14	9-10
Glume width Size mm	3	3-4
Glume length Size	Medium	Medium
Glume width size	Medium	Narrow+Medium
Lower glume shape	Broad Flat	Broad Flat
Glume attachment	Strong	Medium
Glume Pubescence	Present	Absent
Glume surface	Smooth	Rough
Lower glume shoulder shape	Round	Slopping/ indent+Straight/Indent
Lower glume shoulder width	Medium	Medium
Beak length mm	4	3-4
Lower glume beak shape	Long/Sharp	Long Sharp/ Inflected+Curved & Humped
Lower glume Beak Size	Medium	Medium
Beak spicules	Present	Absent
Keel spicules	1	1
Glume internal hair	Sparse	Absent
Glume internal imprint	Small	Small
SEED CHARACTERISTICS		
Seed color	Amber	Amber

Seed surface	Opaque	Opaque
Seed shape	Oval	Ovate+Oval
Seed length mm	6	5-6
Seed width mm	3	2
Seed Thickness mm	2	1.5-2
Seed size	Medium	Medium
Seed brush	Medium	Short
Seed Germ size	Medium	Medium
1000 seed weight	39	26.91
Seed groove	Intermediate	Deep
Seed/ Ear	61	51
Seed hardness	Medium	Hard
Variants	Nil	



Form PB-10
[See Rule 13(1)]

Serial No. 000034

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 34-WT/94-2023

Dated: 26-09-2023

Crop: Wheat

Denomination of Variety: Pirsabak-23

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Exotic

As declared

- That Dr. Khilwat Afridi, Dr. Abdul Bari, Sartaj Ali, Dr. Muhammad Khalid & Dr. Muhammad Saeed

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CEREAL CROPS RESEARCH INSTITUTE, NOWSHERA

سیریل کراپ ریسرچ انسٹیٹیوٹ، نوشہرہ

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 26th day of September 2023 and expiring on the 25th day of September 2043



Registrar

Date of Grant 30-09-2024

20. Application No.: PBRR-Wheat-95/23

Name of the Applicant: Cereal Crops Research Institute, Pirsabak Nowshera

Institute: CCRI, Pirsabak Nowshera

Name of Breeder(s):

i. Dr. Muhammad Khalid

ii. Dr. Abdul Bari

iii. Sartaj Ali

iv. Dr. Khilwat Afridi

v. Dr. Muhammad Saeed

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: Khyber-23

Crop: Wheat (*Triticum aestivum* L.)

Type of Variety: OPV

Name of Initial Variety

(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Growth habit	Semi Erect	Erect
Coleoptile color	White	White
Seedling anthocyanin	Absent	Absent
PLANT CHARACTERISTICS		
Plant height (cm)	115	99-132
Color booting stage	Pale Green	Green
STEM CHARACTERISTICS		
Stem anthocyanin	Absent	Absent
Stem waxy bloom	Weak	Medium

Stem wall thickness	Thin	Thin
Stem stiffness	Stiff	Stiff
Stem diameter mm	4	3-4
Peduncle length cm	41	32-40
Productive tillers/m	128	132
Nodes/Stem	4	3-4
Straw Color	Yellowish White	Yellowish White
Lodging	Absent	absent
FLAG LEAF CHARACTERISTICS		
Flag leaf attitude	Semi Erect	Semi erect
Flag leaf twist	Weak	Medium
Length cm	32.3	25-30
Width cm	2.2	2-2.5
Sheath wax	Weak	Weak
Sheath hairiness	Absent	Absent
Auricle hairiness	Medium	Sparse
Auricle anthocyanin	Absent	Absent
EAR CHARACTERISTICS		
Ear emergence	101	96
Ear size	Medium	Medium
Length cm	13	9-11
Width cm	1	1.8-2
Wax at anthesis	Absent	Weak
Color at maturity	Yellowish White	Yellowish White
Ear shape	Tapering	Parallel+Tapering
Ear density	Lax	Lax+Medium Dense
Super numerary spikelets	Absent	Absent
Speltoids	Absent	Absent
Shattering	Resistant	Resistant
Ear kink/twist	Weak	Weak
Ear Awnedness	Awned	Awned

Awn distribution	Whole	Whole
Awn length	Long	Medium
Awn color	Yellowish White	Yellowish White
Awn habit	Erect	Erect+Horizontal+ Divaricate
Anther Color	Yellow	Yellow
Rachis hairs apical	Sparse	Sparse
Rachis hairs margin	Absent	Sparse
Rachis length cm	12.5	8-9
Rachis width mm	2	1.9-2
No. of segments	21	17-21
GLUME CHARACTERISTICS		
Glume length mm	11	9-10
Glume width Size mm	3	4-5
Glume length Size	Medium	Medium+Short
Glume width size	Medium	Narrow
Lower glume shape	Broad Flat	Broad Flat+Narrow Humped
Glume attachment	Medium	Medium
Glume Pubescence	Present	Absent
Glume surface	Rough	Rough
Lower glume shoulder shape	Round/indent	Straight+Slooping/Indent
Lower glume shoulder width	Medium	Narrow+Broad
Beak length mm	2	3-5
Lower glume beak shape	Short/Straight	Curved&Humped+Short & Straight
Lower glume Beak Size	Medium	Medium
Beak spicules	Present	Absent
Keel spicules	1	1
Glume internal hair	Absent	Absent
Glume internal imprint	Small	Absent
SEED CHARACTERISTICS		
Seed color	Amber	Amber+White

Seed surface	Opaque	Opaque
Seed shape	Oval	Ovate+Oval
Seed length mm	5	5-6
Seed width mm	2	2-3
Seed Thickness mm	2.5	2
Seed size	Medium	Small
Seed brush	Medium	Medium
Seed Germ size	Medium	Medium+Large
1000 seed weight	36	37.5
Seed groove	Intermediate	Intermediate+Deep
Seed/ Ear	54	48
Seed hardness	Soft	Hard



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000035



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 35-WT/95-2023

Dated: 26-09-2023

Crop: Wheat

Denomination of Variety: Khyber-23

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Exotic

As declared

- That Dr. Muhammad Khalid, Dr. Abdul Bari, Sartaj Ali, Dr. Khilwat Afridi & Dr. Muhammad Saeed

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CEREAL CROPS RESEARCH INSTITUTE, NOWSHERA

سیریل کراپ ریسرچ انسٹیٹیوٹ، نوشہرہ

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 26th day of September 2023 and expiring on the 25th day of September 2043



Registrar

Date of Grant 30-09-2024

21. Application No.: PBRR-Sunflower-105/24

Name of the Applicant: Crop Science Institute NARC, Islamabad

Institute: Crop Science Institute, NARC, Islamabad

Name of Breeder(s):

i. Dr. Ihsan Ullah Khan

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: NARC-SUN-2020

Crop: Sunflower (*Helianthus annuus* L.)

Type of Variety: Hybrid

Name of initial variety
(in case EDV):

Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Maturity days	(90-110) medium
Earlier than	AGSUN-5264
Seedling Characteristics:	
Seedling length	5.8 cm
Seedling color	Light green
Plant / Stem Characteristics:	
Stem; main color at heading (darkest area)	Yellowish green
Growing point	Yellow green
Stem anthocyanin	medium
Pubescence at the top 5 cm	medium
Stem pubescence length	Short
Stem stiffness	Strong
Stem diameter (at mid portion)	(19.49 mm) thick
Plant height at full flowering	(144.7 cm)
Stem branching (excluding environmental branching)	Absent
Length of internodes (in central third of stem)	(4.77cm)

Type of root	Tap
Leaf Characteristics:	
Leaves per plant	18
Leaf color	Green
Leaf; anthocyanin coloration on margin of young leaves	Present
Leaf attitude	Descending
Leaf surface	Smooth
Leaf pubescence	Sparse
Leaf pubescence length	Short
Leaf length (midrib)	(24.86cm)
Leaf width	(23.2cm)
Leaf size	Large
Petiole length (bottom of plants)	(14.4cm)
Leaf; petiole anthocyanin	Moderate
Leaf shape	Cordate
Leaf; shape of distal part	Acuminate
Leaf apex	Acuminate
Leaf base shape	Auriculate
Leaf auricles	Large
Leaf wings	weakly expressed
Leaf margin	Serrate
Leaf margin serration (fineness)	Coarse
Leaf; angle of lowest / lateral veins	Right angle
Leaf; height of tip of the blade compared to insertion of petiole (at 2/3 height of plant)	Low
Leaf; habit of petiole	semi-erect
Leaf; petiole pubescence	Medium
Leaf senescence	Late
Leaf; shape of cross section	Flat
Number of leaves on main stem	low, <21
Flower Characteristics:	
Days to flowering in 50% plants (days)	medium-late (70-90)

Earlier than	AGSUN-5264, HYSUN-33
Ray florets; density / number	dense, many, 41-50
Ray floret length	(79.2mm)
Ray floret width	(23.6mm)
Ray floret color	Yellow
Ray floret size	Medium
Disc flower color	Yellow
Disc flower	very strong
Pollen color	Yellow
Head Characteristics:	
Head size / diameter	(19.48cm) medium, 15-20 cm
Head; main shape of grain side	strongly convex
Pubescence	Dense
Involucre length	Medium
Involucre width	Wide
Involucre anthocyanin	Absent
Head bracts (on back)	1-2
Bract shape	clearly rounded
Bract anthocyanin	Absent
Head attitude	turned down with slightly curved stem
Head angle	180°
Thresh ability	Easy
Shattering	Low
Seed Characteristics:	
Seed shape	broad ovoid
Seed size	Medium
Seed length	(12.06mm) medium
Seed width	(6.28mm)
Seed thickness	(3.49mm)
Seed main color	Grey
Seed; secondary color	Grey

Seed; stripes on margin	strongly expressed
Seed; stripes between margin	strongly expressed
Seed; primary color of stripes	Grey
Seed; spots/mottling on pericarp	absent
Seed; pericarp thickness	thin, 0.33 mm
Seed; cross section shape	Flat
Seed pubescence	sparse
Seed index (000)	(70gm) high, >60 g



Form PB-10
[See Rule 13(1)]

Serial No. 000036

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 36-SF/105-2024	Dated: 08-01-2024
Crop: Sunflower	Denomination of Variety: NARC-SUN-2020
Type: New	Conventional/GMC: Conventional
OP/Hybrid: Hybrid	Local/Exotic: Local

As declared

- That Dr. Ihsan Ullah Khan

has/have developed new plant variety and also that he is the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

CROP SCIENCE INSTITUTE, NARC, ISLAMABAD

کراپ سائنس انسٹیٹیوٹ، این اے آر سی، اسلام آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 08th day of January 2024 and expiring on the 07th day of January 2044



Registrar

Date of Grant 30-09-2024

22. Application No.: PBRR-Sesame-107/24

Name of the Applicant: Chief Scientist (ORI), AARI, Faisalabad
 Institute: Oilseeds Research Institute, AARI, Faisalabad
 Name of Breeder(s):
 i. Maria Ghias
 ii. Salsabeel Rauf
 iii. Hafiz Saad Bin Mustafa
 iv. Dr. Ejaz-ul-Hasan
 Application for: New Plant Variety
 Denomination of Variety: Faisalabad Til
 Crop: Sesame (*Sesamum indicum* L.)
 Type of Variety: OPV
 Name of Initial Variety
 (in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Days to maturity	110-115	110-115
Maturity duration	Early-Medium	Early-Medium
Sowing date	May-June	May-June
Seedling Characteristics		
Seedling height cm (2 weeks)	3.0-4.5	3.2-4.4
Hypocotyle anthocynin	Absent	Absent
Hypocotyle length cm	1.7-2.1	1.8-2.0
Cotyledon insertion	Pedicellate	Pedicellate
Cotyledon color	Green	Green
Cotyledon length mm	7.0-8.0	7.5-8.2
Cotyledon width mm	6.5-8.0	7.0-7.8
Stem Characteristics		
Stem length cm	140-160	139-151

Stem height	Medium	Medium
Internode length cm	3.6-4.1	2.8-3.9
Stem diameter cm	0.8-1.0	0.9-1.1
Stem thickness	Medium	Medium
Nodes to 1st flower	4-6	4-5
Stem shape	Circular	Very slight ridged
Stem color	Light brown	Light green brown
Stem anthocyanin	Present	Present
Stem hairness	Medium	Sparse-Medium
Leaf Characteristics		
Leaf color	Green	Green
Mid leaves attitude	Semi erect-Horizontal	Semi erect-horizontal
Leaf hairness	Absent	Very sparse
Basal leaf shape	Entire	Entire
Leaf type	Cup shape	Cup shape-Lanceolate
Leaf length cm	8.5-12.0	11.5-13.9
Leaf width cm	3.0-4.5	4.1-4.6
Leaf senescence	Late	Late
Flower Characteristics		
Days to flowering 50%	40-50	45-50
Corolla color	White with light purple	White with light purple
Corolla hairs	Sparse-Medium	Medium
Flower tip color	Colored	Colored
Pollen density	Low	Low-Medium
Stigma exertion	Exerted	Exerted
Flowers/leaf axil	One to Two	One to Two
Capsule Characteristics		
Capsule length mm	22-28	24-26
Capsule shape	Square	Broad oblong
Capsule color	Brown	Brown/Tan
Capsule hairs	Medium	Medium

Hair length	Short	Short
Carpel/capsule	4	4
Capsule shattering	Absent	Absent
Capsules/plant	150-200	190-320
Seeds/capsule	55-65	52-63
Seed Characteristics		
Seed color	White	White
Seed length mm	2.6-2.9	2.5-2.8
Seed width mm	1.7-2.0	1.8-1.9
Seed size	Small-Medium	Small-Medium
Seed surface	Smooth	Smooth
000 seed weight (g)	2.6	2.5-2.8
Resistant of lodging	Medium	
Distinguishing Characteristics	Short statured, branched with bushy habit	Branched with bushy appearance



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000037



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 37-SS/107-2024

Dated: 30-01-2024

Crop: Sesame

Denomination of Variety: Faisalabad Til

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Local

As declared

- That Maria Ghias, Salsabeel Rauf, Hafiz Saad Bin Mustafa & Dr. Ejaz-ul-Hasan

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

OILSEEDS RESEARCH INSTITUTE, FAISALABAD

آئل سیڈز ریسرچ انسٹی ٹیوٹ، فیصل آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 30th day of January 2024 and expiring on the 29th day of January 2044



Registrar

Date of Grant 30-09-2024

23. Application No.: PBRR-Mustard-108/24

Name of the applicant: Regional Agricultural Research Institute, Bahawalpur

Institute: Regional Agricultural Research Institute, Bahawalpur

Name of Breeder(s):

- i. Mr. Abdul Majid Khan, Scientific Officer, RARI, Bahawalpur
- ii. Dr. Lal Hussain Akhtar, Principal Scientist, RARI Bahawalpur

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: Cholistani Raya

Crop: Mustard (*Brassica juncea* L.)

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Maturity duration	Medium	Medium
Crop season	Rabi	Rabi
Sowing time	Mid October	Mid October
SEEDLING CHARACTERISTICS		
Growth habit	Erect	Erect
Seedling length cm	5.0-6.0	2.0-3.0
Cotyledon length mm	8-12	12-14
Cotyledon width mm	14-18	20-23
Seedling anthocyanin	Strong	Strong
PLANT CHARACTERISTICS		
Plant height cm	210-250	200-220
Plant type	Determinate	Determinate
Growth habit	Intermediate	Intermediate

Plant color	Green	Green
LEAF CHARACTERISTICS		
Leaf color	Green	Green
Leaf attitude	Semi erect	Semi erect
Leaf size	Large	Large
Leaf length cm	24-30	20-26
Leaf width cm	17-22	15-18
Petiole base	Medium	Medium
Petiole length cm	16-24	14.0-18.0
Leaf lobing	Deeply lobed	Deeply lobed
Leaf margin indent	Medium	Medium
Terminal segment	Very large	Large
Leaf hairs	Sparse	Sparse
Leaf auricles	Absent	Absent
Leaf anthocyanin	Absent	Absent
Leaf attachment	Stalked	Stalked
STEM CHARACTERISTICS		
Stem shape	Round	Round
Stem thickness mm	10-12	12-15
Stem stiffness	Medium	Medium
Stem pith	Hollow	Hollow
Remification	Low level	Low level
FLOWER CHARACTERISTICS		
Days to flower 50%	50-55	50-55
Petal color	Yellow	Yellow
Anther dotting	Absent	Absent
Pollination	Self	Self
POD CHARACTERISTICS		
Pod shape	Flat	Flat
Pod anthocyanin	Strong (premature)	Strong (premature)
Pod attitude	Semi erect	Semi erect

Pod density	Semi lax to medium	Semi lax to medium
Pod length mm	40-42	35-40
Pod width mm	6.0-7.0	5.0-6.0
Pedicle length mm	14-15	18-20
Beak shape	Conical	Conical
Beak length mm	10-12	9-10
Shattering	Low	Low
SEED CHARACTERISTICS		
Seed color	Brownish Grey	Brownish Grey
Seed size	Bold	Bold
Raticulation	Absent	Absent



Form PB-10
[See Rule 13(1)]

Serial No. 000038

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 38-MT/108-2024

Dated: 06-02-2024

Crop: Mustard

Denomination of Variety: CHOLISTANI RAYA

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Local

As declared

- That Abdul Majid Khan & Dr. Lal Hussain Akhtar

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

REGIONAL AGRICULTURAL RESEARCH INSTITUTE, BAHAWALPUR

ریجنل ایگریکلچرل ریسرچ انسٹی ٹیوٹ، بہاولپور

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 06th day of February 2024 and expiring on the 05th day of February 2044



Registrar

Date of Grant 30-09-2024

24. Application No.: PBRR-Sesame-109/24

Name of the Applicant: Chief Scientist (ORI), AARI, Faisalabad
 Institute: Oilseeds Research Institute, AARI, Faisalabad
 Name of Breeder(s):
 i. Muhammad Anwar
 ii. Maria Ghias
 iii. Salsabeel Rauf
 iv. Hafiz Saad Bin Mustafa
 v. Dr. Ejaz-ul-Hasan
 vi. Muhammad Altaf

Application for: New Plant Variety
 Denomination of Variety: Anmol Til
 Crop: Sesame (*Sesamum indicum* L.)
 Type of Variety: OPV
 Name of Initial Variety
 (in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Days to maturity	100-110	100-110
Maturity duration	Medium	Medium
Sowing date	July	July
Seedling Characteristics		
Seedling height cm (2 weeks)	4-6	6.5-8.0
Hypocotyle anthocynin	Absent	Absent
Hypocotyle length cm	1.0-1.2	1.4-2.0
Cotyledon insertion	Pedicellate	Pedicellate
Cotyledon color	Green	Green
Cotyledon length mm	9-11	9-10
Cotyledon width mm	8-10	8-10
Stem Characteristics		

Stem length cm	185-205	170-195
Stem height	Tall	Tall
Internode length cm	8.0-10.0	8.5-10.0
Stem diameter cm	1.4-1.5	1.2-1.5
Stem thickness	Medium	Medium
Nodes to 1st flower	5-7	5-7
Stem shape	Square	Square
Stem color	Light brown	Light brown
Stem anthocyanin	Absent	Absent
Stem hairness	Medium	Weak
Leaf Characteristics		
Leaf color	Green	Green
Mid leaves attitude	Semi Erect/Horizontal	Semi Erect/Horizontal
Leaf hairness	Absent	Absent
Basal leaf shape	Lobed	Lobed
Leaf type	Flat	Flat
Leaf length cm	10.5-14.0	14.5-18.0
Leaf width cm	5.0-8.0	7.0-9.0
Leaf senescence	Early	Medium
Flower Characteristics		
Days to flowering 50%	40-45	38-45
Corolla color	White with light purple shade	White with light purple
Corolla hairs	Sparse	Sparse
Flower tip color	Colored	Colored
Pollen density	Medium	Low-Medium
Stigma exertion	Enclosed	Enclosed
Flowers/leaf axil	Many	One to Two
Capsule Characteristics		
Capsule length mm	25.0-28.0	26-30
Capsule shape	Square	Square
Capsule color	Brown	Brown

Capsule hairs	Sparse to medium	Sparse to medium
Hair length	Short	Short
Carpel/capsule	4 to 6	4 to 6
Capsule shattering	Medium	Medium
Capsules/plant	75-100	80-100
Seeds/capsule	55-75	50-75
Seed Characteristics		
Seed color	Creamy white	White
Seed length mm	3.0-4.0	3.0-3.2
Seed width mm	1.0-1.5	1.6-2.0
Seed size	Small	Medium
Seed surface	Smooth	Smooth
000 seed weight (g)		2.65
Resistant of lodging	Medium	Medium
Distinguishing Characteristics	Single stem with 1 to 3 basal branches and multi locules cluster pods bearing.	Single stem with 1 to 3 basal branches and multi locules cluster pods bearing.



Government of Pakistan
Plant Breeders' Rights Registry

Form PB-10
[See Rule 13(1)]

Serial No. 000039



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 39-SS/109-2024 Dated: 30-01-2024
Crop: Sesame Denomination of Variety: Anmol Til
Type: New Conventional/GMC: Conventional
OP/Hybrid: OP Local/Exotic: Local

As declared

- That Muhammad Anwar, Maria Ghias, Salsabeel Rauf, Hafiz Saad Bin Mustafa, Dr. Ejaz-ul-Hasan & Muhammad Altaf

has/have developed new plant variety and also that they are the true breeder(s).

- By virtue of an application that has been made to grant plant variety protection rights and that plant variety has particularly been described with respect to its distinctive features and a suitable denomination.
- There is no objection to grant plant variety protection rights of the said variety under the Plant Breeders' Rights Act, 2016 in favour of:

OILSEEDS RESEARCH INSTITUTE, FAISALABAD

آئل سیڈز ریسرچ انسٹی ٹیوٹ، فیصل آباد

By virtue of this certificate, the above mentioned owner(s) of the rights have under the Plant Breeders' Rights Act, 2016, the exclusive right to produce, sell, market, distribute, import or export the variety (seed) or propagating material for a term of Twenty years starting from the 30th day of January 2024 and expiring on the 29th day of January 2044



Registrar

Date of Grant 30-09-2024

NEWS AND EVENTS

CLIMATE-RESILIENT AGRICULTURE

All Pakistan Fruit & Vegetable Exporters, Importers and Merchants Association (PFVA) has entered into a Memorandum of Understanding with the Climate Vulnerable Forum-V20 Group of Finance Ministers (CVF-V20) to advance climate-resilient agricultural practices and promote sustainable development of Pakistan's agriculture sector. This collaboration is intended to boost innovation, conservation, and capacity-building initiatives, securing prolonged prosperity for the country's fruit and vegetable producers and exporters.

DRONE TECHNOLOGY

The Pakistan-China Joint Laboratory for AI and Smart Agriculture at the University of Agriculture Faisalabad is moving forward with pilot initiatives aimed at enhancing the use of drone technology in agriculture, with more than 600 farmers involved to date. Use of drone technology can significantly boost crop yields in Punjab, known as the nation's agricultural hub. Drones facilitate accurate distribution of fertilizers and pesticides, swift monitoring of crops, and evaluation of damage caused by natural disasters.

OVERHAULING OF SEED APPROVAL SYSTEM

During the 59th meeting of the Punjab Seed Council (PSC), participants advocated for a reform of the seed approval process in the province, emphasizing the need for cooperation between stakeholders from both the private and public sectors. The session, led by Agriculture and Livestock Minister Syed Ashiq Hussain Kirmani, highlighted the necessity of reestablishing a sub-committee consisting of agricultural specialists to offer technical support. The council's objective is to enhance seed quality, eradicate counterfeit products, and increase crop yields.

CHALLENGES FOR COTTON

Extreme weather conditions have greatly affected cotton farming in Punjab and Sindh, resulting in a dramatic reduction in production. The Pakistan Cotton Ginners Association (PCGA) reports that total cotton arrivals across the country fell by 49.18%, with Punjab's output decreasing by 38.4% and Sindh's production dropping by 53.9%. In response to these

negative circumstances, the Agriculture Department in Punjab is implementing a thorough management and pest control strategy designed to boost yield through improved retention of fruiting bodies.

Research organizations from both the public and private sectors are raising concerns about a possible shortage of cotton seeds in Sindh for the following year. They highlighted the urgent need to fast-track the approval for registration of improved varieties and the introduction of improved genetically modified varieties. Experts have stressed the importance of establishing a collaborative Seed Foundation to spur advancements in seed development for essential crops like cotton, wheat, and rice.

PROMOTING AGRICULTURE DEVELOPMENT AND FOOD SECURITY THROUGH INTELLECTUAL PROPERTY RIGHTS

The University of Agriculture Peshawar, in partnership with IPO-Pakistan, organized a two-day seminar centered on "Enhancing Agricultural Development and Food Security through Intellectual Property Rights." Led by Vice-Chancellor Dr. Jahan Bakhat and IPO-Pakistan Chairperson Ambassador (R) Farukh Amil, the seminar emphasized the role of intellectual property in improving the agricultural sector of Pakistan. Presenters illustrated how intellectual property can foster economic development, highlighting projects such as the registration of geographical indications for Khyber Pakhtunkhwa's agriculture and the safeguarding of traditional knowledge. IPO-Pakistan's discussions focused on the importance of intellectual property in protecting genetic resources and fostering agricultural advancements.

MOONSOON RAINS- BLESSING FOR KHARIF CROPS

The monsoon rains this year have overall been advantageous for kharif crops such as paddy, sugarcane, and cotton, which span 11.4 million acres in Punjab, as noted by agricultural specialists. Nonetheless, the floodwaters will improve soil fertility for winter wheat sowing when the water subsides. Farmers are encouraged to avoid waterlogging in cotton fields, which now encompass 3.4 million acres and need proper drainage.

EVENTS

PBRR'S PARTICIPATION IN P-DAC LAUNCH EVENT, 2024



SEMINAR ON PBR, HELD AT NIFA, PESHAWAR



