

Print ISSN: 3078-8978
Online ISSN: 3078-8986

PBR Journal Volume 4, Number 2



Government of Pakistan
PBRR, Pakistan

Plant Breeders' Rights Registry

Plant Breeders' Rights Journal



Official Journal of Plant Breeders' Rights Registry, Pakistan

April 2025

PLANT BREEDERS' RIGHTS JOURNAL

An official journal

of

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

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

CONTENTS

Sr. No.	TITLE	PAGE No.
1	Editorial	i
2	Cases for Opposition	1
3	Issuance of Certificates to PBR Protected Plant Varieties	70
4	Details of PBR Protected Plant Varieties	71
5	News and Events	136

EDITORIAL



As the Pakistan is heading towards the complexities of food insecurity due to abrupt climate changes, the importance of plant breeding innovation cannot be ignored. It is crucial that we should prioritize collaboration, knowledge sharing, and mutually beneficial policies for the betterment of agricultural Research and Development. In the neck of time, consultation on the constitution of Research Incentives Board (RIB's) and holding of Plant Variety Protection Advisory Committee (PVPAC) meeting is under process.

In this context, Meeting with Director General Research of Punjab, Sindh, KPK, Baluchistan and Pakistan Agricultural Research Council (PARC) conducted to elaborate the formulation of RIB's, PVP system and Royalty determination mechanism. In addition to this, to conduct the PVPAC meeting, consultative sessions with Seed Association of Pakistan (SAP), Hybrid Hi tech Seed Association of Pakistan (HHSAP) and CropLife representatives held online to discuss their issues. The Registry remains committed to foreseeing better understanding of the relationships between plant breeders, intellectual property protection and stakeholders. By doing this, we can ensure that PBRR serves as a catalyst for innovation, rather than a barrier to progress.

We hope this journal issue depicts the continual progress and strengthening of Registry in true meaning for food secure future.

Dr. Muhammad Naeem

CASES FOR OPPOSITION

1. Application No.: PBRR-Maize-19/21

Name of the Applicant: Chief Scientist, Maize and Millets Research Institute,
Yusafwala, Sahiwal

Institute: Maize and Millets Research Institute, Yusafwala, Sahiwal

Name of Breeder(s):

- i. Dr. Muhammad Arshad
- ii. Khadim Hussain
- iii. Shahid Hussain
- iv. Aamir Ghani
- v. Muhammad Irfan Yousaf

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YH-5482

Crop: Maize (*Zea mays* L.)

Type of Variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Length (cm)	14.67
Coleoptile Anthocyanin	Present
First Leaf Color	Green + Purple Lines
First Leaf Tip	Round
First Leaf Length (cm)	4.4
First Leaf Width (cm)	1.43
STEM CHARACTERISTICS	
Stem Length (cm)	195-205
Internode Length (cm)	9.5
Internode Diameter (cm)	3.9
Mid Node Anthocyanin	Present
Stem Tillering	Absent

Stem Anthocyanin Coloration of Brace Roots	Present
Lodging	Tolerant
LFAF CHARACTERISTICS	
Leaf attitude of Blade (on leaf just above upper ear)	Erect
Leaf color	Dark Green
Ear leaf Length (cm)	90-95
Ear leaf Width (cm)	10.66
Leaves/ Plant	12-14
Leaf Sheath Anthocyanin	Present
Leaf angle between Blade and Stem (on leaf just above upper ear)	35
TASSEL CHARACTERISTICS	
50% Tassel Emergence (Days) (Range)	69-73 (Spring)
50% Tassel Emergence (Days) (Range)	70
Anthocyanin coloration at base of Glume (in middle third of main axis)	Present
Anthocyanin coloration of Glume excluding base (in middle third of main axis)	Present
Angle between main axis and Lateral Branches (in lower third of Tassel)	45
Attitude of lateral branches (in lower third of Tassel)	Erect
Density of Spikelets (in middle third of Tassel)	
Tassel Length (cm)	46
Tassel Stalk Length (cm)	16
Exertion above Flag Leaf (cm)	3-4
No. of Lateral Branches	14
Lateral Branch Density	Heavy
EAR CHARACTERISTICS (UPPER EAR)	
50% Silk Emergence (Days)	73-77 (Spring)
Silk Color	Purple
Peduncle Length (cm)	9
Ear Leafy Extension	No
Ear Husk Length	28
No. Husk Blades	8

Ear shape	Conical
Ear Length (cm)	17.6
Ear Height (cm)	85-90
Ear Diameter (mm)	45.6
Seeds Rows/ Ear	16-18
Seeds/ Row	37-43
Seed Arrangement	Linear
No. of ear/ Plant	1
Pith Color	Red
SEED CHARACTERISTICS	
Seed color	Yellow
Seed Tip color	White
Seed Length (mm)	12.7
Seed Width (mm)	9.25
Seed Thickness (mm)	4.78
Seed Type	Dent
1000 Seed Weight (g)	310-330
Shelling %age	87
Yield/ hac (kg)	13600
Moisture %	17.7
Protein %	14
Oil %	4.4
Fine Starch %	50.4
RESISTANCE	
Fusarium	MR
Streak Virus	R
Insects	MR
Helminthosporium	MR

Opposition can be filed up to 03-08-2025

2. Application No.: PBRR-Bitter Gourd-114/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited
Institute: Yuksel Tohum Antalya, Turkey
Name of Breeder(s): Yuksel Seeds Asia (Private) Limited
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of Variety: 10-403
Crop: Bitter Gourd (*Momordica charantia* L.)
Type of Variety: Inbred Line
Name of Initial Variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Cotyledon: intensity of green color	Green
Maturity duration (marketable)	45
Maturity duration (Physical maturity for Seed)	72
SEEDLING CHARACTERISTICS	
Seedling height	17.00
Seedling colour	Green
Seedling hairiness	Present (weak)
STEM CHARACTERISTICS	
Growth habit	Vine
Stem colour	Dark green
Stem: length of internode of main stem (between 15 th and 20 th node; cm)	42.05
Stem: thickness of main stem (mm)	6.21
Stem: number of side shoots	Many
Stem shape	Angular
Stem branching	Present
Tendrill length (cm)	23.05

Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf colour	Green
Leaf size	Medium
Leaf incision	Strong
Leaf blade: size (cm ²)	390.84
Leaf blade: intensity of green color	Medium
Leaf blade: ratio length/width lobe	1.4
Leaf blade: number of lobes	7
Leaf blade: depth of lobing	Deep
Palmate leaf intersection	Palmatifid
Petiole length (cm)	17.44
Petiole thickness (mm)	4.93
Petiole shape	Round
FEMALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Colour of ring	NA
Sepal length (cm)	0.35
Pistil colour (before opening)	Yellow
Stigma: intensity of green color	Light
MALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Colour of ring	NA
FRUIT CHARACTERISTICS	
Fruit: colour of skin	Dark green
Fruit: shape in longitudinal section	Spindle-shaped
Fruit: shape of base	Obtuse
Fruit: shape of apex	Around
Fruit flesh colour	Yellowish white
Flesh width (thickness; cm)	4.38
Fruit: length (cm)	23.67

Fruit: diameter (cm)	7.33
Fruit size	Medium
Fruit glossiness	Medium
Fruit warty swellings	Medium
Fruit: number of warts	Many
Wart: size	Medium
Wart: shape of top	Obtuse
Wart: presence of spines	Absent
No. of fruiting ribs	10
Fruit: length of ridge	Long continuous
Fruit: color of skin at ripe stage	Orange
Flesh firmness	Hard
Fruit: bitterness	Present
Fruit: intensity of bitterness	Medium
SEED CHARACTERISTICS	
Seed colour	Brown
Seed size	Bold
Seed shape	Elliptic
Beak emergence	Strong
Seed testa reticulation	Strong
1000, seed weight (g)	193.08
Seed: intensity of brown color of tester	Dark
Seed: indentation of edge	Small
DISTINGUISHING CHARACTERISTICS	
	1. 100 % gynoeocious flowers 2. Dark black and smooth (without spines) fruit

Opposition can be filed up to 06-06-2025

3. Application No.: PBRR-Bitter Gourd-115/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited
Institute: Yuksel Tohum Antalya, Turkey
Name of Breeder(s): Yuksel Seeds Asia (Private) Limited
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of Variety: 100-401
Crop: Bitter Gourd (*Momordica charantia* L.)
Type of Variety: Inbred Line
Name of Initial Variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
SEEDLING CHARACTERISTICS	
Seedling height	21
Seedling colour	Green
Seedling hairiness	Present
STEM CHARACTERISTICS	
Growth habit	Vine
Stem colour	Dark green
Stem: number of side shoots	Many
Stem shape	Angular
Stem branching	Present
Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf colour	Green
Leaf incision	Present
Leaf blade: intensity of green color	Medium
Leaf blade: number of lobes	7
Leaf blade: depth of lobing	Medium

Petiole shape	Angular
FEMALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Pistil colour (before opening)	Yellow
Stigma: intensity of green color	Light
MALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Colour of pedicel	Green
Pedicel hairiness	Weak
FRUIT CHARACTERISTICS	
Fruit: colour of skin	Dark green
Fruit: shape in longitudinal section	Spindle-shaped
Fruit: shape of base	Acute
Fruit: shape of apex	Acute
Fruit flesh colour	Off white
Fruit base	Pointed
Fruit size	Large
Fruit glossiness	Weak
Fruit warty swellings	Weak
Fruit: number of warts	Few
Wart: size	Small
Wart: shape of top	Round
Wart: presence of spines	Absent
No. of fruiting ribs	10
Fruit: length of ridge	Long
Fruit: color of skin at ripe stage	Orange
Fruit: bitterness	Present
Fruit: intensity of bitterness	Medium
SEED CHARACTERISTICS	
Seed colour	Light brown
Seed size	Bold

Seed shape	Elliptic
Beak emergence	Strong
Seed testa reticulation	Strong
1000, seed weight (g)	190.2
Seed: intensity of brown color of tester	Medium
Seed: indentation of edge	Small

Opposition can be filed up to 06-06-2025

4. Application No.: PBRR-Bitter Gourd-116/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: 100-402

Crop: Bitter Gourd (*Momordica charantia* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Cotyledon: intensity of green color	Green
Maturity duration (marketable)	48 days
Maturity duration (Physical maturity for Seed)	76 days
SEEDLING CHARACTERISTICS	
Seedling height	21.10
Seedling colour	Green
Seedling hairiness	Present (weak)
STEM CHARACTERISTICS	
Growth habit	Vine

Stem colour	Green
Stem: length of internode of main stem (between 15 th and 20 th node; cm)	23.78
Stem: thickness of main stem (mm)	5.05
Stem: number of side shoots	Many
Stem shape	Angular
Stem branching	Present
Tendrill length (cm)	23.10
Stem hairiness	Profused
LEAF CHARACTERISTICS	
Leaf colour	Dark green
Leaf size	Small
Leaf incision	Medium
Leaf blade: size (cm ²)	279.87
Leaf blade: intensity of green color	Dark
Leaf blade: ratio length/width lobe	0.82
Leaf blade: number of lobes	7
Leaf blade: depth of lobing	Medium
Palmate leaf intersection	Palmatifid
Petiole length (cm)	11.97
Petiole thickness (mm)	4.56
Petiole shape	Angular
FEMALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Sepal length (cm)	0.48
Pistil colour (before opening)	Yellow
Stigma: intensity of green color	Light
MALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Sepal length (cm)	1
Pedicel length (cm)	14
Colour of pedicel	Light green

Pedicle hairiness	Weak
FRUIT CHARACTERISTICS	
Fruit: colour of skin	Dark green
Fruit: shape in longitudinal section	Spindle-shaped
Fruit: shape of base	Obtuse
Fruit: shape of apex	Acute
Fruit flesh colour	Yellowish white
Fruit: length (cm)	21.30
Fruit: diameter (cm)	6.92
Fruit base	Pointed
Fruit size	Large
Pedicle length (cm)	6.58
Fruit glossiness	Medium
Fruit warty swellings	Strong
Fruit: number of warts	Many
Wart: size	Medium
Wart: shape of top	Obtuse
Wart: presence of spines	Absent
No. of fruiting ribs	8.67
Fruit: length of ridge	Short
Fruit: color of skin at ripe stage	Orange
Flesh firmness	Tight
Fruit: bitterness	Present
Fruit: intensity of bitterness	Medium
SEED CHARACTERISTICS	
Seed colour	Whitish Yellow
Seed size	Bold
Seed shape	Elliptic
Beak emergence	Strong
Seed testa reticulation	Strong
1000, seed weight (g)	196.4

Seed: intensity of brown color of tester	Light
Seed: indentation of edge	Small
DISTINGUISHING CHARACTERISTICS	1. Dark green and dense warty fruit 2. Profused stem hairiness

Opposition can be filed up to 06-06-2025

5. Application No.: PBRR-Bitter Gourd-117/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: 100-404

Crop: Bitter Gourd (*Momordica charantia* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Cotyledon: intensity of green color	Green
Maturity duration (marketable)	47 days
Maturity duration (Physical maturity for Seed)	76 days
SEEDLING CHARACTERISTICS	
Seedling height	18.64
Seedling colour	Green
Seedling hairiness	Present (weak)
STEM CHARACTERISTICS	
Growth habit	Vine
Stem colour	Green
Stem: length of internode of main stem (between 15 th and 20 th node; cm)	30.95
Stem: thickness of main stem (mm)	6.18

Stem: number of side shoots	Many
Stem shape	Angular
Stem branching	Present
Tendrill length (cm)	20.75
Stem hairiness	Profuse
LEAF CHARACTERISTICS	
Leaf colour	Dark green
Leaf size	Small
Leaf incision	Medium
Leaf blade: intensity of green color	Dark
Leaf blade: number of lobes	7
Leaf blade: depth of lobing	Deep
Palmate leaf intersection	Palmatipartite
Petiole length (cm)	6.47
Petiole thickness (mm)	3.23
Petiole shape	Angular
FEMALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Sepal length (cm)	0.38
Pistil colour (before opening)	Yellow
Stigma: intensity of green color	Light
MALE FLOWER CHARACTERISTICS	
Ring on the inner side of corolla	Absent
Sepal length (cm)	0.78
Pedicel length (cm)	10.07
Colour of pedicel	Light green
Pedicel hairiness	Weak
FRUIT CHARACTERISTICS	
Fruit: colour of skin	Light green
Fruit: shape in longitudinal section	Spindle-shaped
Fruit: shape of base	Round

Fruit: shape of apex	Acute
Fruit flesh colour	Yellowish white
Flesh width (thickness; cm)	2.75
Fruit: length (cm)	28.75
Fruit: diameter (cm)	5.18
Fruit base	Rounded
Fruit size	Large
Fruit glossiness	Medium
Fruit warty swellings	Weak
Fruit: number of warts	Medium
Wart: size	Small
Wart: shape of top	Round
Wart: presence of spines	Absent
No. of fruiting ribs	10
Fruit: length of ridge	Long and discontinuous
Fruit: color of skin at ripe stage	Orange
Flesh firmness	Hard
Fruit: bitterness	Present
Fruit: intensity of bitterness	Weak
SEED CHARACTERISTICS	
Seed colour	Whitish yellow
Seed size	Bold
Seed shape	Elliptic
Beak emergence	Strong
Seed testa reticulation	Strong
000, seed weight (g)	172.75
Seed: intensity of brown color of tester	Light and whitish (2 shades); white and brown seed
Seed: indentation of edge	Small
DISTINGUISHING CHARACTERISTICS	
	1. Small leaves 2. Stipule leaf at male and female flower

Opposition can be filed up to 06-06-2025

6. Application No.: PBRR-Cucumber-118/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited
Institute: Yuksel Tohum Antalya, Turkey
Name of Breeder(s): Yuksel Seeds Asia (Private) Limited
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of Variety: YK-11
Crop: Cucumber (*Cucumis sativus* L.)
Type of Variety: Inbred Line
Name of initial variety (in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Strong
Plant: growth type	intermediate
Total length of first 15 internodes (cm)	94.40
Foliage density	Medium
STEM CHARACTERISTICS	
Stem thickness (mm)	6.53
Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf blade: attitude	Horizontal
Leaf blade: length (cm)	27.10
Length of terminal lobe (cm)	15.10
Leaf blade: shape of apex of terminal lobe	Right Angled
Leaf blade: intensity of green colour	Dark Green
Leaf color	Green
Leaf blade: blistering	Absent or weak
Leaf blade: undulation of margin	Weak
Leaf blade: dentation of margin	Medium

Leaf width (cm)	25.14
Leaf pubescence	Medium
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynocious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly two or three
No. of female flowers/node	More than Three
Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	2.40
FRUIT CHARACTERISTICS	
Fruit: length	14.90
Fruit: diameter	4.34
Fruit: shape in transverse section	Round
Fruit: shape of stem end	Obtuse
Fruit: shape of calyx end	Obtuse
Fruit: ground colour of skin at market stage	Green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Dark Green
Fruit: ribs	Absent
Fruit: sutures	Present
Fruit: creasing	Absent
Fruit: degree of creasing	Very weak
Fruit: type of vestiture	Absent
Fruit: warts	Absent
Fruit: length of stripes	Short
Fruit: dots	Absent
Fruit: glaucosity	Weak
Fruit: length of peduncle	Long

Predominant shape of stem	Obtuse
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent
Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellow white
Seed size	Medium
Seed length (mm)	9.74
Seed width (mm)	3.73
000, seed weight (g)	21.29
DISTINGUISHING CHARACTERISTICS	
	Short Plant height, Dark fruit color and small medium size.
ENVIRONMENTAL ADATIBILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to: 06-06-2025

7. Application No.: PBRR-Cucumber-119/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YK-27

Crop: Cucumber (*Cucumis sativus* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Strong
Plant: growth type	Strong
Total length of first 15 internodes (cm)	90.90
Foliage density	Medium
STEM CHARACTERISTICS	
Stem thickness (mm)	6.67
Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf blade: attitude	Drooping
Leaf blade: length (cm)	26.44
Length of terminal lobe (cm)	15.44
Leaf blade: shape of apex of terminal lobe	Right-angled
Leaf blade: intensity of green colour	Green
Leaf color	Green
Leaf blade: blistering	Absent or very weak
Leaf blade: undulation of margin	Moderate
Leaf blade: dentation of margin	Weak
Leaf width (cm)	24.52
Leaf pubescence	Medium
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoecious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly two or three
No. of female flowers/node	1-3

Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	2.60
FRUIT CHARACTERISTICS	
Fruit: length	17.90
Fruit: diameter	3.64
Fruit: shape in transverse section	Round
Fruit: shape of stem end	Obtuse
Fruit: shape of calyx end	Obtuse
Fruit: ground colour of skin at market stage	Dark green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Green
Fruit: ribs	Low
Fruit: sutures	Present
Fruit: creasing	Present
Fruit: degree of creasing	Long
Fruit: type of vestiture	Present
Fruit: warts	Absent
Fruit: length of stripes	Long
Fruit: dots	Absent
Fruit: glaucosity	Weak
Fruit: length of peduncle	Long
Predominant shape of stem	Obtuse
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent
Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellow white
Seed size	Medium
Seed length (mm)	8.75

Seed width (mm)	3.71
1000, seed weight (g)	24.62
DISTINGUISHING CHARACTERISTICS	<ol style="list-style-type: none"> 1. Tall Plant fast growth. 2. Fruit top and base similar shape as Obtuse. 3. Leaf margins dented
ENVIRONMENTAL ADAPTABILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to: 06-06-2025

8. Application No.: PBRR-Cucumber-120/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YK-35

Crop: Cucumber (*Cucumis sativus* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Strong
Plant: growth type	Indeterminate
Total length of first 15 internodes (cm)	112.45
Foliage density	Weak

STEM CHARACTERISTICS	
Stem thickness (mm)	6.75
Stem hairiness	Sparse
LEAF CHARACTERISTICS	
Leaf blade: attitude	Horizontal
Leaf blade: length (cm)	27.15
Length of terminal lobe (cm)	15.35
Leaf blade: ratio length of terminal lobe/length of blade	0.57
Leaf blade: shape of apex of terminal lobe	Right-angled
Leaf blade: intensity of green colour	Medium
Leaf color	Green
Leaf blade: blistering	Absent or very weak
Leaf blade: undulation of margin	Very weak
Leaf blade: dentation of margin	Medium
Leaf width (cm)	28.8
Leaf pubescence	Sparse
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoecious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly four or five
No. of female flowers/node	More than three
Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	3.58
FRUIT CHARACTERISTICS	
Fruit: length	19.64
Fruit: diameter	4.72
Fruit: core diameter in relation to diameter of fruit	Round

Fruit: shape in transverse section	Obtuse
Fruit: shape of stem end	Round
Fruit: shape of calyx end	Green
Fruit: ground colour of skin at market stage	Dark
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Absent
Fruit: ribs	Absent
Fruit: sutures	Present
Fruit: creasing	Weak
Fruit: degree of creasing	Absent
Fruit: type of vestiture	Absent
Fruit: warts	Short
Fruit: length of stripes	Absent
Fruit: dots	Weak
Fruit: glaucosity	Medium
Fruit: length of peduncle	Yellow
Fruit: ground colour of skin at physiological ripeness	Obtuse
Predominant shape of stem	Rough
Fruit surface	Absent
Fruit mottling	Absent
Fruit bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellowish white
Seed shape	Narrow elliptic
Seed size	Bold
Seed length (mm)	10.5
Seed width (mm)	3.64
000, seed weight (g)	24.25
DISTINGUISHING CHARACTERISTICS	1- Leaf Margins Dented sharp 2- Fruit is Obtuse at Top and base 3- Short Plant Height
ENVIRONMENTAL ADATIBILITY	
Flowering response to seasons	Variable

Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	least tolerant
Heat tolerance	most tolerant

Opposition can be filed up to: 06-06-2025

9. Application No.: PBRR-Cucumber-121/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YK-59

Crop: Cucumber (*Cucumis sativus* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Strong
Plant: growth type	Indeterminate
Total length of first 15 internodes (cm)	104.50
Foliage density	Medium
STEM CHARACTERISTICS	
Stem thickness (mm)	7.32
Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf blade: attitude	Horizontal
Leaf blade: length (cm)	30.75

Length of terminal lobe (cm)	17.05
Leaf blade: ratio length of terminal lobe/length of blade	0.55
Leaf blade: shape of apex of terminal lobe	Right-angled
Leaf blade: intensity of green colour	Medium
Leaf color	Green
Leaf blade: blistering	Absent or very weak
Leaf blade: undulation of margin	Moderate
Leaf blade: dentation of margin	Weak
Leaf width (cm)	30.10
Leaf pubescence	Profuse
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoecious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly two or three
No. of female flowers/node	1-3
Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	3.23
FRUIT CHARACTERISTICS	
Fruit: length	18.68
Fruit: diameter	4.31
Fruit: shape in transverse section	Round
Fruit: shape of stem end	Obtuse
Fruit: shape of calyx end	Round
Fruit: ground colour of skin at market stage	Green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Medium
Fruit: ribs	Absent
Fruit: sutures	Absent

Fruit: creasing	Present
Fruit: degree of creasing	Weak
Fruit: type of vestiture	Absent
Fruit: warts	Absent
Fruit: length of stripes	Short
Fruit: dots	Absent
Fruit: glaucosity	Weak
Fruit: length of peduncle	Medium
Fruit: ground colour of skin at physiological ripeness	Yellow
Predominant shape of stem	Obtuse
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent
Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellowish white
Seed shape	Narrow elliptic
Seed size	Bold
Seed length (mm)	10.34
Seed width (mm)	4.05
000, seed weight (g)	28.13
DISTINGUISHING CHARACTERISTICS	Weak leaf margins
ENVIRONMENTAL ADATIBILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to: 06-06-2025

10. Application No.: PBRR-Cucumber-122/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited
Institute: Yuksel Tohum Antalya, Turkey
Name of Breeder(s): Yuksel Seeds Asia (Private) Limited
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of Variety: YK-61
Crop: Cucumber (*Cucumis sativus* L.)
Type of Variety: Inbred Line
Name of initial variety (in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Medium
Plant: growth type	Indeterminate
Total length of first 15 internodes (cm)	75.50
Foliage density	Medium
STEM CHARACTERISTICS	
Stem thickness (mm)	6.57
Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf blade: attitude	Horizontal
Leaf blade: length (cm)	26.30
Length of terminal lobe (cm)	16.75
Leaf blade: ratio length of terminal lobe/length of blade	0.64
Leaf blade: shape of apex of terminal lobe	Right-angled
Leaf blade: intensity of green colour	Medium
Leaf color	Green
Leaf blade: blistering	Absent or very weak

Leaf blade: undulation of margin	Very weak
Leaf blade: dentation of margin	Very weak
Leaf width (cm)	26.33
Leaf pubescence	Medium
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoecious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly three or four
No. of female flowers/node	More than three
Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	2.95
FRUIT CHARACTERISTICS	
Fruit: length	22.09
Fruit: diameter	3.66
Fruit: shape in transverse section	Round
Fruit: shape of stem end	Acute
Fruit: shape of calyx end	Acute
Fruit: ground colour of skin at market stage	Green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Green
Fruit: ribs	Present
Fruit: sutures	Absent
Fruit: creasing	Present
Fruit: degree of creasing	Weak
Fruit: type of vestiture	Prickles
Fruit: warts	Absent
Fruit: length of stripes	Short
Fruit: dots	Absent

Fruit: glaucosity	Waek
Fruit: length of peduncle	Medium
Predominant shape of stem	Acute
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent
Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellowish white
Seed shape	Broad elliptic
Seed size	Small
Seed length (mm)	8.33
Seed width (mm)	3.94
1000, seed weight (g)	23.46
DISTINGUISHING CHARACTERISTICS	
	1. Leaf midrib veins prominent
ENVIRONMENTAL ADAPTABILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to 06-06-2025

11. Application No.: PBRR-Cucumber-123/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited
Institute: Yuksel Tohum Antalya, Turkey
Name of Breeder(s): Yuksel Seeds Asia (Private) Limited
Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YK-65

Crop: Cucumber (*Cucumis sativus* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Strong
Plant: growth type	Indeterminate
Total length of first 15 internodes (cm)	89.60
Foliage density	Medium
STEM CHARACTERISTICS	
Stem thickness (mm)	5.79
Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf blade: attitude	Drooping
Leaf blade: length (cm)	21.20
Length of terminal lobe (cm)	12.80
Leaf blade: ratio length of terminal lobe/length of blade	0.60
Leaf blade: shape of apex of terminal lobe	Right-angled
Leaf blade: intensity of green colour	Medium
Leaf color	Green
Leaf blade: blistering	Absent or very weak
Leaf blade: undulation of margin	Very weak
Leaf blade: dentation of margin	Very weak
Leaf width (cm)	21.10
Leaf pubescence	Profuse
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoecious

Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly two or three
No. of female flowers/node	1-3
Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	2.90
FRUIT CHARACTERISTICS	
Fruit: length	18.78
Fruit: diameter	3.64
Fruit: shape in transverse section	Round
Fruit: shape of stem end	Obtuse
Fruit: shape of calyx end	Round
Fruit: ground colour of skin at market stage	Green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Green
Fruit: ribs	Absent
Fruit: sutures	Absent
Fruit: creasing	Absent
Fruit: degree of creasing	Weak
Fruit: type of vestiture	Absent
Fruit: warts	Absent
Fruit: length of stripes	Short
Fruit: dots	Absent
Fruit: glaucosity	Weak
Fruit: length of peduncle	Medium
Predominant shape of stem	Obtuse
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent

Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellowish white
Seed shape	Elliptic
Seed size	Medium
Seed length (mm)	9.19
Seed width (mm)	3.87
000, seed weight (g)	25.93
DISTINGUISHING CHARACTERISTICS	1. Plain leaf blade margin 2. No lobe 3. Small leaves
ENVIRONMENTAL ADATIBILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to 06-06-2025

12. Application No.: PBRR-Cucumber-124/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YK-75

Crop: Cucumber (*Cucumis sativus* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Strong
Plant: growth type	Indeterminate
Total length of first 15 internodes (cm)	107.75
Foliage density	Strong
STEM CHARACTERISTICS	
Stem thickness (mm)	8.05
Stem hairiness	Sparse
LEAF CHARACTERISTICS	
Leaf blade: attitude	Horizontal
Leaf blade: length (cm)	26.40
Length of terminal lobe (cm)	15.25
Leaf blade: ratio length of terminal lobe/length of blade	0.58
Leaf blade: shape of apex of terminal lobe	Right-angled
Leaf blade: intensity of green colour	Medium
Leaf color	Green
Leaf blade: blistering	Absent or very weak
Leaf blade: undulation of margin	Very weak
Leaf blade: dentation of margin	Very weak
Leaf width (cm)	27.50
Leaf pubescence	Medium
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoeocious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly two or three
No. of female flowers/node	1-3
Ovary: colour of vestiture	White
Parthenocarpy	Present

Flower color	Yellow
Petal length (cm)	3.08
FRUIT CHARACTERISTICS	
Fruit: length	18.84
Fruit: diameter	4.32
Fruit: shape in transverse section	Round
Fruit: shape of stem end	Acute
Fruit: shape of calyx end	Round
Fruit: ground colour of skin at market stage	Green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Green
Fruit: ribs	Present
Fruit: sutures	Absent
Fruit: creasing	Present
Fruit: degree of creasing	Weak
Fruit: type of vestiture	Present
Fruit: warts	Absent
Fruit: length of stripes	Short
Fruit: dots	Absent
Fruit: glaucosity	Weak
Fruit: length of peduncle	Short
Predominant shape of stem	Acute
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent
Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellowish white
Seed shape	Elliptic
Seed size	Medium
Seed length (mm)	9.01
Seed width (mm)	3.60

000, seed weight (g)	25.41
DISTINGUISHING CHARACTERISTICS	1. Five leaf lobes 2. Waxy leaf margin and without spines
ENVIRONMENTAL ADATIBILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Medium
Heat tolerance	Medium

Opposition can be filed up to 06-06-2025

13. Application No.: PBRR-Cucumber-125/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YK-76

Crop: Cucumber (*Cucumis sativus* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Medium
Plant: growth type	Indeterminate
Total length of first 15 internodes (cm)	100.6
Foliage density	Medium
STEM CHARACTERISTICS	

Stem thickness (mm)	6.11
Stem hairiness	Sparse
LEAF CHARACTERISTICS	
Leaf blade: attitude	Drooping
Leaf blade: length (cm)	25.45
Length of terminal lobe (cm)	16.15
Leaf blade: ratio length of terminal lobe/length of blade	0.63
Leaf blade: shape of apex of terminal lobe	Acute
Leaf blade: intensity of green colour	Dark
Leaf color	Green
Leaf blade: blistering	Absent or very weak
Leaf blade: undulation of margin	Very weak
Leaf blade: dentation of margin	Very weak
Leaf width (cm)	23.50
Leaf pubescence	Medium
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoecious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly three or four
No. of female flowers/node	More than three
Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	2.90
FRUIT CHARACTERISTICS	
Fruit: length	26.74
Fruit: diameter	4.10
Fruit: ratio length/diameter	
Fruit: core diameter in relation to diameter of fruit	

Fruit: shape in transverse section	Round
Fruit: shape of stem end	Acute
Fruit: shape of calyx end	Acute
Fruit: ground colour of skin at market stage	Dark Green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Dark
Fruit: ribs	Absent
Fruit: sutures	Absent
Fruit: creasing	Prsent
Fruit: degree of creasing	Short
Fruit: type of vestiture	Absent
Fruit: warts	Absent
Fruit: length of stripes	Short
Fruit: dots	Absent
Fruit: glaucosity	Weak
Fruit: length of peduncle	Long
Predominant shape of stem	Acute
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent
Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellowish white
Seed shape	Elliptic
Seed size	Small
Seed length (mm)	8.11
Seed width (mm)	3.62
000, seed weight (g)	22.13
DISTINGUISHING CHARACTERISTICS	1. Acute apex of terminal lobe 2. Long pedicel 3. Short internode
ENVIRONMENTAL ADATIBILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium

Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Least tolerant
Heat tolerance	Mostly tolerant

Opposition can be filed up to 06-06-2025

14. Application No.: PBRR-Cucumber-126/24

Name of the Applicant: Yuksel Seeds Asia (Private) Limited

Institute: Yuksel Tohum Antalya, Turkey

Name of Breeder(s): Yuksel Seeds Asia (Private) Limited

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: YK-99

Crop: Cucumber (*Cucumis sativus* L.)

Type of Variety: Inbred Line

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Plant vigour	Strong
Plant: growth type	Indeterminate
Total length of first 15 internodes (cm)	88.7
Foliage density	Strong
STEM CHARACTERISTICS	
Stem thickness (mm)	7.97
Stem hairiness	Medium
LEAF CHARACTERISTICS	
Leaf blade: attitude	Horizontal
Leaf blade: length (cm)	31.8
Length of terminal lobe (cm)	22.25

Leaf blade: ratio length of terminal lobe/length of blade	0.70
Leaf blade: shape of apex of terminal lobe	Right-angled
Leaf blade: intensity of green colour	Dark
Leaf color	Dark green
Leaf blade: blistering	Medium
Leaf blade: undulation of margin	Strong
Leaf blade: dentation of margin	Medium
Leaf width (cm)	30.12
Leaf pubescence	Medium
FLOWER CHARACTERISTICS	
Plant: sex expression	Gynoecious
Bisexual flowers	Absent
Parthenocarpy	Present
Sex expression of flowers	Mainly female
Plant: number of female flowers per node	Predominantly three or four
No. of female flowers/node	More than three
Ovary: colour of vestiture	White
Parthenocarpy	Present
Flower color	Yellow
Petal length (cm)	2.66
FRUIT CHARACTERISTICS	
Fruit: length	16.26
Fruit: diameter	4.1
Fruit: shape in transverse section	Round
Fruit: shape of stem end	Obtuse
Fruit: shape of calyx end	Round
Fruit: ground colour of skin at market stage	Green
Excluding white varieties: Fruit: intensity of ground colour of skin (as for 25)	Green
Fruit: ribs	Absent
Fruit: sutures	Present
Fruit: creasing	Present

Fruit: degree of creasing	Weak
Fruit: type of vestiture	Absent
Fruit: warts	Absent
Fruit: length of stripes	Long
Fruit: dots	Absent
Fruit: glaucosity	Weak
Fruit: length of peduncle	Long
Predominant shape of stem	Obtuse
Fruit surface	Rough
Fruit mottling	Absent
Fruit bitterness	Absent
Cotyledon bitterness	Absent
SEED CHARACTERISTICS	
Seed colour	Yellowish white
Seed shape	Narrow elliptic
Seed size	Medium
Seed length (mm)	9.49
Seed width (mm)	3.72
1000, seed weight (g)	27.66
DISTINGUISHING CHARACTERISTICS	
	1. Long sepals 2. Two leaves opposite on one node
ENVIRONMENTAL ADAPTABILITY	
Flowering response to seasons	Variable
Drought tolerance (measured as reduction in yield)	Medium
Tolerance to salinity (measured as reduction in plant height 30 days after sowing)	Medium
Tolerance to acid soils (measured as reduction in plant height 30 days after sowing)	Medium
Cold tolerance	Least tolerant
Heat tolerance	Mostly tolerant

Opposition can be filed up to 06-06-2025

15. Application No.: PBRR-Maize-127/24

Name of the Applicant: Muhammad Shahid
Institute: Sohni Dharti International
Name of Breeder(s): Mirza Habib Ur Rehman
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of Variety: SD-828
Crop: Maize (*Zea mays* L.)
Type of Variety: Hybrid
Name of initial variety (in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Length (cm)	10.0-11.0
Coleoptile Anther	Medium
First Leaf Color	Green
First Leaf Tip:	Round
First Leaf Length (cm)	4.8-5.1
First Leaf Width (cm)	1.3-1.4
Stem Characteristics	
Stem Length (cm)	235-240
Internode Length (cm)	18-19
Inter Diameter (cm)	2.0-2.2
Mid Node Anthocyanin	Weak
Stem Tillering:	Absent
Root Anthocyanin:	Strong
Lodging	Low
Leaf Characteristics	
Leaf Color	Dark Green
Mid Leaf Attitude	Recurved

Leaf Sheath Anthocyanin	Absent
Margin Serration	Absent
Leaf Margin Waves	Many
Cob. Leaf Length (cm)	104-105
Cob. Leaf Width (cm)	9-10
Sheath Hairs	Absent
Leaf Senescence	Late
Leaves/ Plant	15-16
Tassel Characteristics	
50% Emergence (days)	53-53
Tassel Length (cm)	34-36.0
Tassel Stalk Length (cm)	15-17
Exser.Abo.Fl. Leaf (cm)	5-7
No. of Lateral Branches	14-15
Lateral Branch Density	Semi Dent
Lateral Branches Attitude	Erect
Anther Fertility	Normal
Pollen Shedding	Heavy
Anther Color	Light Red
Pollen Color	Yellow
Glume Color	Green
Ear Characteristics	
50% Silk Emergence (days)	55-56
Silk Color	Dark Red
Insertion Height (cm)	120-125
Peduncle Length (cm)	7-9
Ear Leaf Exten:	Nil
Ear Husk Length:	Long
No. Husk Blades	11-12
Ear Length (cm)	17-18
Seed Rows/ Ear	16-18

Ear Diameter (cm)	4.0-4.5
Seeds/ Row	35-38
Ear Shape	Cylindrical
Ear Weight (gm)	170-175
Seed Row Attitude	Straight
Cob Color	White
Seed Characteristics	
Seed Color	Yellow
Seed Tip Color	Yellow
Seed Length (cm)	9-10
Color of Sides	Yellow
Seed Width (cm)	7-8
Seed Type	Flint
Seed Thickness (cm)	0.5-0.6
Seed Size	Medium
Yield kg/ hac	10000-11000
000 Seed Weight	243-248
Grain Cob Ratio	7:1
Lodging	Low

Opposition can be filed up to 06-06-2025

16. Application No.: PBRR-Maize-128/24

Name of the Applicant: Muhammad Shahid

Institute: Sohni Dharti International

Name of Breeder(s): Mirza Habib Ur Rehman

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: SD-36S46

Crop: Maize (*Zea mays* L.)

Type of Variety: Hybrid

Name of initial variety
(in case EDV):

Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Length (cm)	8.8-9.5
Coleoptile Anther	Strong
First Leaf Color	Green
First Leaf Tip:	Round
First Leaf Length (cm)	4.8-5.1
First Leaf Width (cm)	1.3-1.4
Stem Characteristics	
Stem Length (cm)	238-243
Internode Length (cm)	18-20
Inter Diameter (cm)	1.5-1.7
Mid Node Anthocyanin	Medium
Stem Tillering:	Absent
Root Anthocyanin:	Absent
Lodging	Low
Leaf Characteristics	
Leaf Color	Green
Mid Leaf Attitude	Semi Erect
Leaf Sheath Anthocyanin	Absent
Margin Serration	Absent
Leaf Margin Waves	Few
Cob. Leaf Length (cm)	90-95
Cob. Leaf Width (cm)	9.0-10.2
Leaf Senescence	Medium
Leaves/ Plant	13-14
Tassel Characteristics	
50% Emergence (days)	52-53
Tassel Length (cm)	38-43
Tassel Stalk Length (cm)	20-25

Exser.Abo.Fl. Leaf (cm)	8-10
No. of Lateral Branches	8-10
Lateral Branch Density	Lax
Lateral Branches Attitude	Spreading
Anther Fertility	Normal
Pollen Shedding	Heavy
Anther Color	Yellow
Pollen Color	Yellow
Glume Color	Green
Ear Characteristics	
50% Silk Emergence (days)	54-55
Silk Color	Very Light Pink
Insertion Height (cm)	118-120
Peduncle Length (cm)	10-12
Ear Leaf Extension	Absent
Ear Husk Length:	Long
No. Husk Blades	9-11
Ear Length (cm)	18-20
Seed Rows/ Ear	16-18
Ear Diameter (cm)	4.0-4.5
Seeds/ Row	35-40
Ear Shape	Slightly Conical
Ear Weight (gm)	205-210
Seed Row Attitude	Straight
Cob Color	White
Seed Characteristics	
Seed Color	Yellow
Seed Tip Color	Yellow
Seed Length (cm)	0.9-1.0
Color of Sides	Yellow
Seed Width (cm)	0.7-0.8

Seed Type	Slightly dent
Seed Thickness (cm)	0.3-0.4
Seed Size	Bold
Seed Weight/ Ear (gm)	182-190
Yield kg/ hac	11000-12000
000 Seed Weight (gm)	265-280
Grain Cob Ratio	7:1
Lodging	Low

Opposition can be filed up to 06-06-2025

17. Application No.: PBRR-Maize-129/24

Name of the Applicant: Muhammad Shahid
Institute: Sohni Dharti International
Name of Breeder(s): Mirza Habib Ur Rehman
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of Variety: SD-17S23
Crop: Maize (*Zea mays* L.)
Type of Variety: Hybrid
Name of initial variety (in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Length (cm)	15-17
Coleoptile Anther	Medium
First Leaf Color	Green
First Leaf Tip:	Round
First Leaf Length (cm)	5.02-5.2
First Leaf Width (cm)	1.6-1.7

Stem Characteristics	
Stem Length (cm)	230-235
Internode Length (cm)	17-18
Inter Diameter (cm)	1.7-1.8
Mid Node Anthocyanin	Medium
Stem Tillering:	Absent
Root Anthocyanin:	Medium
Lodging	Low
Leaf Characteristics	
Leaf Color	Dark Green
Mid Leaf Attitude	Recurved
Leaf Sheath Anthocyanin	Medium
Margin Serration	Absent
Leaf Margin Waves	Few
Cob. Leaf Length (cm)	95-100
Cob. Leaf Width (cm)	10-11
Sheath Hairs	Absent
Leaf Senescence	Medium
Leaves/ Plant	16-17
Tassel Characteristics	
50% Emergence (days)	52-53
Tassel Length (cm)	40-42
Tassel Stalk Length (cm)	2 1-23
Exser. Above Flag Leaf (cm)	3-5
No. of Lateral Branches	12-14
Lateral Branch Density	Lax
Lateral Branches Attitude	Semi Erect
Anther Fertility	Normal
Pollen Shedding	Heavy
Anther Color	Maroon
Pollen Color	Yellow

Ear Characteristics	
50% Silk Emergence (days)	54-55
Silk Color	Light Red
Insertion Height (cm)	110-113
Peduncle Length (cm)	12-14
Ear Leaf Extension	Small
Ear Husk Length:	Long
Ear Length (cm)	17-18
Seeds/ Row	38-45
Ear Shape	Cylindrical
Ear Weight (gm)	175-185
Seed Row Attitude	Straight
Cob Color	White
Seed Characteristics	
Seed Color	Yellow
Seed Tip Color	Yellow
Seed Length (cm)	0.8-0.9
Color of Sides	Yellow
Seed Width (cm)	0.6-0.7
Seed Type	Slight Dent
Seed Thickness (cm)	0.3-0.4
Seed Size	Bold
Seed Weight/ Ear (gm)	1 81-187
Yield kg/ hac	11600-11900
000 Seed Weight (gm)	273-280
Grain Cob Ratio	7:1
Lodging	Low

Opposition can be filed up to 06-06-2025

18. Application No.: PBRR-Maize-130/24

Name of the Applicant: Muhammad Shahid
 Institute: Sohni Dharti International
 Name of Breeder(s): Mirza Habib Ur Rehman
 Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of Variety: SD-33S88
 Crop: Maize (*Zea maise* L.)
 Type of Variety: Hybrid
 Name of initial variety (in case EDV): Not Applicable
 Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Length (cm)	15-17
Coleoptile Anther	Medium
First Leaf Color	Green
First Leaf Tip:	Round
First Leaf Length (cm)	5.02-5.2
First Leaf Width (cm)	1.6-1.7
Stem Characteristics	
Stem Length (cm)	230-235
Internode Length (cm)	17-18
Inter Diameter (cm)	1.7-1.8
Mid Node Anthocyanin	Medium
Stem Tillering:	Absent
Root Anthocyanin:	Medium
Lodging	Low
Leaf Characteristics	
Leaf Color	Dark Green
Mid Leaf Attitude	Recurved

Leaf Sheath Anthocyanin	Medium
Margin Serration	Absent
Leaf Margin Waves	Few
Cob. Leaf Length (cm)	95-100
Cob. Leaf Width (cm)	10-11
Sheath Hairs	Absent
Leaf Senescence	Medium
Leaves/ Plant	16-17
Tassel Characteristics	
50% Emergence (days)	52-53
Tassel Length (cm)	40-42
Tassel Stalk Length (cm)	21-23
Exser. Above Flag Leaf (cm)	3-5
No. of Lateral Branches	12-14
Lateral Branch Density	Lax
Lateral Branches Attitude	Semi Erect
Anther Fertility	Normal
Pollen Shedding	Heavy
Anther Color	Maroon
Pollen Color	Yellow
Ear Characteristics	
50% Silk Emergence (days)	54-55
Silk Color	Light Red
Insertion Height (cm)	110-113
Peduncle Length (cm)	12-14
Ear Leaf Extension	Small
Ear Husk Length:	Long
Ear Length (cm)	17-18
Seeds/ Row	38-45
Ear Shape	Cylindrical
Ear Weight (gm)	175-185

Seed Row Attitude	Straight
Cob Color	White
Seed Characteristics	
Seed Color	Yellow
Seed Tip Color	Yellow
Seed Length (cm)	0.8-0.9
Color of Sides	Yellow
Seed Width (cm)	0.6-0.7
Seed Type	Slight Dent
Seed Thickness (cm)	0.3-0.4
Seed Size	Bold
Seed Weight/ Ear (gm)	1 81-187
Yield kg/ hac	11600-11900
000 Seed Weight (gm)	273-280
Grain Cob Ratio	7:1
Lodging	Low

Opposition can be filed up to 06-06-2025

19. Application No.: PBRR-Maize-131/24

Name of the Applicant: Shafique Ur Rehman
Institute: Kissan Seed Corporation
Name of Breeder(s): Shafique Ur Rehman
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of Variety: SB-9635
Crop: Maize (*Zea mays* L.)
Type of Variety: Hybrid
Name of initial variety
(in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Length (cm)	3.1-3.3
Coleoptile' Anthocyanin	Absent
First Leaf Colour	Green
First Leaf Tip	Round
First Leaf Length (mm)	42-45
First Leaf Width (mm)	17-18
PLANT CHARACTERISTICS FOR HYBRIDS AND OPEN POLLINATED VARIETIES ONLY	
Plant length up to flag leaf	Long
STEM CHARACTERISTICS	
Stem Length cm	208-214
Taller than	YH-5427 (cultivar)
Internodal length (cm)	13.5-14.5
Internodal diameter (cm)	2.0-2.2
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem Anthocyanin coloration of brace roots	Absent
LEAF CHARACTERISTICS	
Leaf angle between blade and stem (on leaf just above upper ear)	Narrow
Leaf attitude of blade (on leaf just above upper ear)	Curved
Leaf width of blade (leaf of upper ear)	Broad
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	66-68
50% Tassel emergence (days)	Late
Anthocyanin coloration at 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 (in lower third of tassel)	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)	Dense
Tassel angle between main axis and lateral branches (in lower third of tassel)	Narrow
Tassel Length(cm)	39-41 Range (Top leaf node to basal branches)
Tassel stalk Length(cm)	41-44 Range
Exsertion above flag leaf (cm)	02-03
No. of lateral branches	11-12
Lateral branches density	Dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shedding	Heavy
Anther color	Yellow
Pollen color	Yellow
Glume color	Green
EAR CHARACTERISTICS	
50% Silk emergence (days)	69-71
Silk color	Green
Insertion height (cm)	82-86 Range
Peduncle length (cm)	9.5-10 Range
Ear leafy extension	Absent
Ear husk length	Medium
No.of husk blades	09-10
Ear shape	Conico Cylindrical
Ear length (cm)	18-20 Range
Ear diameter (cm)	4.8-5.2 Range
Seed rows/ear	18-20
Seeds/row	38-40
Seed row arrangement	Straight
No.of ears <i>i</i> plant	1-2
Ear weight (g)	178-182
Cob color	Pink
SEED CHARACTERISTICS	

Seed Color	Yellow
Seed tip color	White
Color of sides	Yellow
Seed Shape	Round
Seed Length (mm)	11.7-11.9
Seed width (mm)	6.1-6.3
Seed thickness (mm)	4.1-4.3
Seed type	Flint
Seed wax	Absent
Seed size	Medium
Seed weight/car (g)	175-180
1000 Seed Weight (g)	320-324
Yield/ha. (mt)	11.7-12
Seed Sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Absent

Opposition can be filed up to 10-07-2025

20. Application No.: PBRR-Maize-132/24

Name of the Applicant: Shafique Ur Rehman

Institute: Kissan Seed Corporation

Name of Breeder(s): Shafique Ur Rehman

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: SB-6214

Crop: Maize (*Zea mays* L.)

Type of Variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling length (cm)	3.3-3.5
Coleoptile's anthocyanin	Absent
First leaf colour	Dark Green
First leaf tip	Round
First leaf length (mm)	45-49
First leaf width (mm)	18-22
PLANT CHARACTERISTICS FOR HYBRIDS AND OPEN POLLINATED VARIETIES ONLY	
Plant length up to flag leaf	Long
STEM CHARACTERISTICS	
Stem length cm	225-230 (Range:cm)
Taller than	YH-5427 (Cultivar)
Shorter than	CV (Cultivar)
Internodal length (cm)	14-15
Internodal diameter (cm)	1.8-2.0
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
LEAF CHARACTERISTICS	
Leaf angle between blade and stem (on leaf just above upper ear)	Wide
Leaf attitude of blade (on leaf just above upper ear)	Straight
Leaf width of blade (leaf of upper ear)	Broad
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	69-73
50% Tassel emergence (days)	Late
Anthocyanin coloration at 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 (in lower third of tassel)	Wide
Attitude of lateral branches (in lower third of tassel)	Straight

Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Absent
Density of spikelets (in middle third of tassel)	Dense
Tassel angle between main axis and lateral branches (in lower third of tassel)	Wide
Tassel length (cm)	31-34 (Range) (Top leaf node to basal branches)
Tassel stalk length (cm)	41-45 (Range)
Exsertion above flag leaf (cm)	10-11
No. of lateral branches	08-10
Lateral branches density	Dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shedding	Heavy
Anther color	Yellow
Pollen color	Yellow
Glume color	Green
EAR CHARACTERISTICS	
50% Silk emergence (days)	74-77
Silk color	Light Pink
Insertion height (cm)	100-105 (Range)
Peduncle length (cm)	6.5-8.0 (Range)
Ear leafy extension	Absent
Ear husk length	Medium
No. of husk blades	09-10
Ear shape	Cylindrical
Ear length (cm)	18-19 (Range)
Ear diameter (cm)	4.5-4.8 (Range)
Seed rows/ear	18 to 20
Seeds/row	40-41
Seed row arrangement	Straight
No. of ears/ plant	1-2
Ear weight (g)	235-245

Cob color	Pink
SEED CHARACTERISTICS	
Seed color	Yellow
Seed tip color	White
Color of sides	White
Seed shape	Indented
Seed length (mm)	12.0-12.2
Seed width (mm)	7.9-8.1
Seed thickness (mm)	4.1-4.3
Seed type	Semi dent
Seed wax	Absent
Seed size	Bold
Seed weight/ear (g)	185-190
1000 Seed weight (g)	310-315
Grain: Cob ratio	86%
Yield/ha.(mt)	12.5-13.0
Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Absent

Opposition can be filed up to 10-07-2025

21. Application No.: PBRR-Maize-133/24

Name of the Applicant: Shafique Ur Rehman

Institute: Kissan Seed Corporation

Name of Breeder(s): Shafique Ur Rehman

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: SB-2363

Crop: Maize (*Zea mays* L.)

Type of Variety: Hybrid

Name of initial variety
(in case EDV):

Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling length (cm)	3.3-3.5
Coleoptile's anthocyanin	Weak
First leaf colour	Dark Green
First leaf length (mm)	36 to 39
First leaf width (mm)	16 to 18
PLANT CHARACTERISTICS FOR INBRED LINES ONLY	
Plant length up to flag leaf	N.A
PLANT CHARACTERISTICS FOR HYBRIDS AND OPEN POLLINATED VARIETIES ONLY	
Plant length up to flag leaf	Medium
STEM CHARACTERISTICS	
Stem length (cm)	250-255 (Range: cm)
Taller than	YH-5427 (cultivar)
Shorter than	CV (cultivar)
Internodal length (cm)	14.5-14.8
Internodal diameter (cm)	1.5-1.6
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
LEAF CHARACTERISTICS	
Leaf angle between blade and stem (on leaf just above upper ear)	Wide
Leaf attitude of blade (on leaf just above upper ear)	Straight
Leaf width of blade(leaf of upper ear)	Medium
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	53-56
50% Tassel emergence (days)	Medium
Anthocyanin coloration at 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 (in lower third of tassel)	Wide
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)	Dense
Tassel angle between main axis and lateral branches (in lower third of tassel)	Narrow
Later than	YH-5427 (cultiver)
Tassel length (cm)	45-49 (Range) (Top leaf node to basal branches)
Tassel stalk length (cm)	50-56 Range
Exsertion above flag leaf (cm)	05 to 07
No. of lateral branches	09 to 10
Lateral branches density	Dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shedding	Heavy
Anther color	Pink
Pollen color	Yellow
Glume color	Green
EAR CHARACTERISTICS	
50% Silk emergence (days)	57-61
Earlier than	CV (Cultivar)
Later than	YH-5427 (Cultivar)
Silk color	Pink
Insertion height (cm)	120-123 (Range)
Peduncle length (cm)	7.5-8.5 (Range)
Ear leafy extension	Absent
Ear husk length	Medium
No. of husk blades	08-09

Ear shape	Cylindrical
Ear length (cm)	16.5-17.0 (Range)
Ear diameter (cm)	4.7-4.9 (Range)
Seed rows/ear	16-18
Seeds/row	35-37
Seed row arrangement	Straight
No. of ears/plant	1 to 2
Ear weight(g)	223-227
Cob color	White
SEED CHARACTERISTICS	
Seed color	Orange
Seed tip color	White
Color of sides	Orange
Seed shape	Indented
Seed length (mm)	12.5-12.6
Seed width (mm)	8.0-8.2
Seed thickness (mm)	4.0-4.2
Seed type	Semi dent
Seed wax	Absent
Seed size	Medium
Seed weight/ear (g)	185-190
1000 Seed weight (g)	285-295
Grain: Cob ratio	86%
Yield/ha.(mt)	10.5-11.0
Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Absent

Opposition can be filed up to 10-07-2025

22. Application No.: PBRR-Potato-134/24

Name of the Applicant: Frito Lay North America Inc.

Institute: Frito Lay Agricultural Research 4295 Tenderfoot Rd.,
Rhineland WI 54501 USA

Name of Breeder(s): Frito Lay North America Inc.

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: FL-2215

Crop: Potato (*Solanum Tuberosum* L.)

Type of Variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Light sprout: Predominant colour	Purple
Light sprout: Shape	Conical
Light sprout: Intensity of anthocyanin coloration at base of sprout	Dark
Light sprout: Intensity of anthocyanin coloration at sprout tip	Dark
Light sprout: Pubescence base	Strong
Light sprout: Length of apical sprout	Medium
Plant: Foliage structure	Semi-compact
Plant: Height of main stem	Medium
Stem: Predominant colour	Green
Stem: Secondary coloration	Purple
Stem: Distribution of secondary colour	Throughout lightly scattered
Plant: Wing	Poorly developed
Plant: Wing type	Straight
Leaf: Structure	Intermediate
Leaf: Anthocyanin coloration of rachis	Absent
Leaf: Anthocyanin coloration of midrib	Absent

Leaf: Length	Medium
Leaf: Width	Medium
Leaf: Leaflet (lateral) shape	Ovate Lanceolate
Leaflet: Glossiness of upper side	Weak
Leaflet: Pubescence of blade at apical rosette	Absent
Flower: Anthocyanin coloration of bud	Present
Flower: Anthocyanin coloration of floral stalk	Absent
Flower: Anthocyanin coloration of pedicel articulation	Present
Flower: Pedicel articulation position	Below the middle
Flower: Corolla colour	Blue-violet
Flower: Corolla size	Medium
Flower: Anthocyanin coloration of outer side in white flowers	Absent
Flower: Intensity of anthocyanin coloration of corolla on inner side	Strong
Flower: Styler length (in comparison to stamen coloum)	Longer
Flower: Stigma lobe	Unilobed
Flower: Frequency of flowers	Medium
Flower: Premature bud dropping	Absent
Flower: Intensity of flowering	Medium
Plant: Time of maturity	Late
Tuber: Predominant skin colour	Brown
Tuber: Secondary skin colour	Whitish cream
Tuber: Distribution of secondary skin colour	Absent
Tuber: Skin type	Smooth
Tuber: Shape	Ovoid
Tuber: Depth of eye	Medium deep
Tuber: Colour of eye	Whitish cream
Tuber: Predominant colour of flesh	White
Tuber: Secondary colour of flesh	Absent

Opposition can be filed up to 06-06-2025

23. Application No.: PBRR-Potato-135/24

Name of the Applicant: Frito Lay North America Inc.

Institute: Frito Lay Agricultural Research 4295 Tenderfoot Rd.,
Rhineland WI 54501 USA

Name of Breeder(s): Frito Lay North America Inc.

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: FL-2108 (Brooke)

Crop: Potato (*Solanum Tuberosum* L.)

Type of Variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Lightsprout: size	Medium
Lightsprout: shape	Conical
Lightsprout: intensity of anthocyanin coloration of base	Weak
Lightsprout: proportion of blue in anthocyanin coloration of base	Absent or Low
Lightsprout: pubescence of base	Weak
Lightsprout: size of tip in relation to base	Medium
Lightsprout: habit of tip	Open
Lightsprout: anthocyanin coloration of tip	Light or Very Weak
Lightsprout: pubescence of tip	weak
Lightsprout: number of root tips	medium
Lightsprout: lengt of lateral shoots	Short to Medium
Plant: foliag structure	Intermediate type
Plant: growth habit	Semi Upright
Stem: anthocyanin coloration	Absent or Very Weak
Leaf: outline size	Medium to Large
Leaf: openness	Intermediate

Leaf: presence of secondary leaflets	Strong
Leaf: green color	Medium
Leaf: anthocyanin coloration on midrib of upper side	Absent to Weak
Second pair of lateral leaflets: width in relation to length	Narrow to Medium
Terminal and lateral leaflets: frequency of coalescence	Absent or very low
Plant: height	Medium
Plant: frequency of flowers	Absent or very low
Plant: time of maturity	Medium
Tuber: shape	Round
Tuber: depth of eyes	Shallow
Tuber: color of skin	Yellow
Tuber: color of base of eye	Yellow
Tuber: color of flesh	Medium yellow
Light beige and yellow skinned varieties only: Tuber: anthocyanin coloration of skin in reaction to light	Absent or very low

Opposition can be filed up to 06-06-2025

24. Application No.: PBRR-Potato-136/24

Name of the Applicant: Frito Lay North America Inc.

Institute: Frito Lay Agricultural Research 4295 Tenderfoot Rd., Rhinelander WI 54501 USA

Name of Breeder(s): Frito Lay North America Inc.

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: FL-1867

Crop: Potato (*Solanum Tuberosum* L.)

Type of Variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Light sprout: Predominant colour	White
Light sprout: Shape	Cylindrical
Light sprout: Intensity of anthocyanin coloration at base of sprout	Medium
Light sprout: Intensity of anthocyanin coloration at sprout tip	Light
Light sprout: Pubescence base	Weak
Light sprout: Length of apical sprout	Small
Plant: Foliage structure	Semi -compact
Stem: Cross section	
Plant: Height of main stem	Medium
Stem: Predominant colour	Green
Stem: Secondary coloration	Absent
Stem: Distribution of secondary colour	Absent
Plant: Wing	Poorly developed
Plant: Wing type	Straight
Leaf: Structure	Open
Leaf: Anthocyanin coloration of rachis	Absent
Leaf: Anthocyanin coloration of midrib	Absent
Leaf: Length	Medium
Leaf: Width	Medium
Leaf: Leaflet (lateral) shape	Lanceolate
Leaflet: Glossiness of upper side	Weak
Leaflet: Pubescence of blade at apical rosette	Absent
Flower: Anthocyanin coloration of bud	Absent
Flower: Anthocyanin coloration of floral stalk	Absent
Flower: Anthocyanin coloration of pedicel articulation	Absent
Flower: Pedicel articulation position	Below the midrib
Flower: Corolla colour	White
Flower: Corolla size	Medium
Flower: Anthocyanin coloration of outer side in white flowers	Absent

Flower: Intensity of anthocyanin coloration of corolla on inner side	Weak
Flower: Stylar length (in comparison to stamen colour)	Equal
Flower: Stigma lobe	Unilobed
Flower: frequency of flowers	Medium
Flower: Premature bud dropping	Absent
Flower: Intensity of flowering	Profuse
Plant: Time of maturity	Medium
Tuber: Predominant skin Color	Brown
Tuber: Secondary Skin color	Russeted
Tuber: Skin type	Rough
Tuber: Shape	Round
Tuber: Depth of eye	Shallow
Tuber: Color of eye	Whitish Cream
Tuber: Predominant color of flesh	White
Tuber: Secondary color of flesh	Cream

Opposition can be filed up to 06-06-2025

25. Application No.: PBRR-Potato-137/24

Name of the Applicant: Frito Lay North America Inc.

Institute: Frito Lay Agricultural Research 4295 Tenderfoot Rd.,
Rhineland WI 54501 USA

Name of Breeder(s): Frito Lay North America Inc.

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of Variety: FL-2027

Crop: Potato (*Solanum Tuberosum* L.)

Type of Variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Light sprout: Predominant colour	Blue
Light sprout: Shape	Spherical
Light sprout: Intensity of anthocyanin coloration at base of sprout	Medium
Light sprout: Intensity of anthocyanin coloration at sprout tip	Light
Light sprout: Pubescence base	Weak
Light sprout: Length of apical sprout	Small
Plant: Foliage structure	Open
Stem: Cross section	Round
Plant: Height of main stem	Short
Stem: Predominant colour	Green
Stem: Secondary coloration	Absent
Stem: Distribution of secondary colour	Absent
Plant: Wing	Poorly Developed
Plant: Wing type	Straight
Leaf: Structure	Open
Leaf: Anthocyanin coloration of rachis	Absent
Leaf: Anthocyanin coloration of midrib	Absent
Leaf: Length	Small
Leaf: Width	Narrow
Leaf: Leaflet (lateral) shape	Narrow Lanceolate
Leaflet: Glossiness of upper side	Weak
Leaflet: Pubescence of blade at apical rosette	Absent
Flower: Anthocyanin coloration of bud	Absent
Flower: Anthocyanin coloration of floral stalk	Weak
Flower: Anthocyanin coloration of pedicel articulation	Absent
Flower: Pedicel articulation position	Below the middle
Flower: Corolla colour	White
Flower: Corolla size	Medium
Flower: Anthocyanin coloration of outer side in white flowers	Absent

Flower: Intensity of anthocyanin coloration of corolla on inner side	Weak
Flower: Styler length (in comparison to stamen colour)	Equal
Flower: Stigma lobe	Unilobed

Opposition can be filed up to 06-06-2025

26. Application No.: PBRR-Mungbean-146/25

Name of the Applicant: Director, Nuclear Institute for Agriculture & Biology (NIAB)

Institute: Nuclear Institute for Agriculture & Biology (NIAB)

Name of Breeder(s):

- i. Dr. M. Jawad Asghar
- ii. Dr. Tariq Mahmud Shah
- iii. Muhammad Shahid
- iv. Ch. Muhammad Rafiq
- v. Dr. Aziz ur Rehman
- vi. M. Sajjad Saeed
- vii. Khalid Pervaiz

Name of Co-breeder(s):

Application for: New Plant Variety

Denomination of variety: NIAB-PRI Mung

Crop: Mungbean (*Vigna radiata* L.) Wilczek

Type of the variety: OPV

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Length (cm) 20 days	17.13
Hypocotyl (cm)	8.7
Hypocotyl color	Greenish Purple
Seedling Bud Pubescence	Spare
PLANT CHARACTERISTICS	
Growth Habit	Erect
Main Stem Length (cm)	40-50
Taller than	Nil

Shorter than	NM2021
Plant Color	Light Green
Canopy spread	Medium
Canopy Width (cm)	17
Stem Hairness	Spare
Stem Nodes	8-10
Stem Color	Green
Twing Tendency	Slight
No. of Primary Branches	1-2
LEAF CHARACTERISTICS	
Leaf color	Green
Petiole Length (cm)	12-14
Leaflet Size	Medium
Number of Leaflets	3
Leaflet Tip	Acute
Terminal Leaf Length (cm)	10
Terminal Leaf Width (cm)	8
Leaf Pubescence	Absent
Terminal Leaflet Shape	Ovate
Leaf Angle	Semi Erect
Leaf Petiole Anthocyanin	Light Purple
Leaf Senescence	Medium
FLOWER CHARACTERISTICS	
Days to 50% Flowering	35-40
Flowering Duration	Medium
Calyx Color	Yellowish Green
Corolla Color	Greyish Yellow
Flower Size	Medium
Pedicle Anthocyanin	Weak
POD CHARACTERISTICS	
Raceme Position	Intermediate

Pod Length (cm)	8-9 Range
Pod Width (cm)	0.4-0.5 Range
Pod Size	Medium
Larger than	NM2016
Smaller than	NM2011
Pod Shape	Semi Flat
Pod Curvature	Slight
Pod Beak Shape	Hook
Pod Beak (mm)	2-3
Seeds/Pod	10-11 (Range)
Pod Pubescence	Medium
Huadong Length (cm)	6.73
Pod Constriction	Slight
Clusters/ Plant	8-9
Pod Attachment	Pendant
Pod/ Cluster	4-6 (Range)
Pod Shattering	Absent
Pods/ Plant	40-50
Mature Pod Color	Blackish Brown
SEED CHARACTERISTICS	
Seed color	Light Green
Seed Shape	Drum
Seed Dots	Absent
Seed testa Texture	Smooth
Seed surface	Shiny
Seed Size	Bold
Larger than	NM98
Smaller than	NM2021
Seed Length (mm)	4-5
Seed Width (mm)	3-4
000 Seed Weight (g)	61-62

Cotyledon color	Yellow
Seed Protein (%)	24.70
Hilum Shape	Non-Concave
Average Yield (kg/ha)	1342-2703
RESISTANCE	
Lodging	3R
Mosaic	3R
ULCD	3R
Others	3R

Opposition can be filed up to 03-08-2025

ISSUANCE OF CERTIFICATES TO PBR PROTECTED PLANT VARIETIES

Plant Breeders' Rights Registry has issued the following fourteen (14) certificates of Plant Breeders' Rights in favor of varieties listed below:

S. No.	Crop	Company/ Organization	Variety
1	Maize	Mohsin Raza	RS-8104
2	Maize	Mohsin Raza	RS-9067
3	Maize	Mohsin Raza	MSCPL-48
4	Maize	Mohsin Raza	MSCPL-117
5	Maize	Mohsin Raza	PHSC-12
6	Maize	Mohsin Raza	PHSC-226
7	Rice	NIGAB NARC, Islamabad	KM-52
8	Rice	NIGAB NARC, Islamabad	GM-Ali-76
9	Rice	NIGAB NARC, Islamabad	GM-Ali-5
10	Rice	NIGAB NARC, Islamabad	GM-Ali-48
11	Mungbean	Nuclear Institute for Agriculture & Biology (NIAB), Faisalabad	Abbas Mung
12	Mungbean	Arid Zone Research Institute, Bhakkar	AZRI-MUNG-2021
13	Mungbean	Arid Zone Research Institute, Bhakkar	Jumbo Mung
14	Mungbean	Nuclear Institute for Agriculture & Biology (NIAB), Faisalabad	NIAB Mung 2021

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-66/22

Name of the applicant: Mohsin Raza
Institute: Rawal Seed Corporation, Sadiqabad
Name of Breeder(s):
Mohsin Raza
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of variety: RS-8104

Crop: Maize (*Zea mays* L.)

Type of the variety: Hybrid

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

Salient features:

CHARACTERISTICS	DESCRIPTION
Origin	Local
Breeding method	Hybridization
Areas of adaptation	Punjab
type of variety	Hybrid
Maturity Duration	Long
Sowing Time	Mid Jan to Mid March
SEEDLING CHARACTERISTICS	
Seedling length (cm)	5
Coleoptile's anthocyanin	Medium
First leaf colour	Other
First leaf tip	Pointed
First leaf length (mm)	65
First leaf width (mm)	30
PLANT CHARACTERISTICS FOR HYBRID AND OPEN POLLINATED VARIETIES ONLY	
Plant length up to flag leaf	Long
STEM CHARACTERISTICS	
Stem length (cm)	200-210
Internodal length (cm)	15
Internodal diameter (cm)	3
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
LEAF CHARACTERISTICS	
Leaf angle between blade and stem (on leaf just above upper ear)	Wide
Leaf attitude of blade (on leaf just above upper ear)	Semi drooping

Leaf width of blade (leaf of upper ear)	Broad
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	90-95
50% Tassel emergence (days)	Late
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present
Angle between main axis and lateral branches	Wide
Attitude of lateral branches (in lower third of tassel)	Curved
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Present
Density of spikelets (in middle third of tassel)	Dense
Tassel angle between main axis and lateral branches	Wide
Tassel length (cm)	40
Tassel stalk length (cm)	45
Exsertion above flag leaf (cm)	5
No. of lateral branches	18-20
Lateral branches density	Dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Creamy
Pollen color	Yellow
Glume color	Purple
EAR CHARACTERISTICS	
50% silk emergence(days)	90-98
Silk color	Green
Insertion height (cm)	110-115
Peduncle length (cm)	4
Ear leafy extensions	Absent
Ear husk length	Medium
No. of husk blades	6

Ear shape	Conico-Cylindrical
Ear length (cm)	29
Ear diameter (cm)	4
Seed rows/ear	16
Seed/row	48
Seed row arrangement	Straight
No. of ears/plant	1-2
Cob color	White
SEED CHARACTERISTICS	
Seed color	Yellow
Seed tip color	White
Color of sides	Yellow
Seed shape	Toothed
Seed length (mm)	11.5
Seed width (mm)	7.5
Seed thickness (mm)	4.2
Seed type	Semi dent
Seed wax	Absent
Seed size	Bold
Seed weight/ear (g)	146
1000 Seed weight (g)	288
Grain. Cob ratio	85%
Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Present
Enviromental Adaptibility	
Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to Salinity	Medium
Tolerance to acid soils	Medium
Cold tolerance	Medium
Heat tolerance	medium



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000040



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 40-MZ/66-2022

Dated: 23-09-2022

Crop: Maize

Denomination of Variety: RS-8104

Type: Enlisted

Conventional/GMC: Conventional

OP/Hybrid: Hybrid

Local/Exotic: Local

As declared

- That Mohsin Raza

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:

MOHSIN RAZA

محسن رضا

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 23rd day of September 2022 and expiring on the 22nd day of September 2042



Registrar

Date of Grant 09-01-2025

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

Name of the applicant: Mohsin Raza
Institute: Rawal Seed Corporation, Sadiqabad
Name of Breeder(s): Mohsin Raza
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of variety: RS-9067
Crop: Maize (*Zea mays* L.)
Type of the variety: Hybrid
Name of initial variety
(in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION
Origin	Local
Breeding method	Hybridization
Areas of adaptation	Punjab
type of variety	Hybrid
Days to Maturity	
Maturity Duration	Medium
Sowing Time	Mid July to End of August
SEEDLING CHARACTERISTICS	
Coleoptile's anthocyanin	Medium
First leaf colour	Green
First leaf tip	Pointed
First leaf length (mm)	30
First leaf width (mm)	5
PLANT CHARACTERISTICS FOR HYBRID AND OPEN POLLINATED VARIETIES ONLY	
Plant length up to flag leaf	Medium
STEM CHARACTERISTICS	
Stem length (cm)	210

Internodal length (cm)	15
Internodal diameter (cm)	10
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
LEAF CHARACTERISTICS	
Leaf angle between blade and stem (on leaf just above upper ear)	Small
Leaf attitude of blade (on leaf just above upper ear)	Straight
Leaf width of blade (leaf of upper ear)	Broad
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	55-60
50% Tassel emergence (days)	Medium
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present
Angle between main axis and lateral branches	Narrow
Attitude of lateral branches (in lower third of tassel)	Straight
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Present
Density of spikelets (in middle third of tassel)	Dense
Tassel angle between main axis and lateral branches	Narrow
Tassel length (cm)	48
Exsertion above flag leaf (cm)	39
No. of lateral branches	8-9
Lateral branches density	Semi dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Creamy
Pollen color	Yellow
Glume color	Purple

EAR CHARACTERISTICS	
50% silk emergence(days)	58-62
Silk color	Red
Insertion height (cm)	80-90
Peduncle length (cm)	7-8
Ear leafy extensions	Absent
Ear husk length	28
No. of husk blades	8
Ear shape	Conico-Cylindrical
Ear length (cm)	24-26
Ear diameter (cm)	20
Seed rows/ear	16
Seed/row	44-45
Seed row arrangement	Straight
No. of ears/plant	1
Cob color	White
SEED CHARACTERISTICS	
Seed color	Yellow
Seed tip color	White
Color of sides	Yellow
Seed length (mm)	5
Seed width (mm)	3.5
Seed thickness (mm)	1.25
Seed type	Semi flint
Seed wax	Absent
Seed size	Medium
Seed weight/ear (g)	140
Grain. Cob ratio	87%
Seed sweetness	Absent
Seed waxiness	Absent
Enviromental Adaptibility	

Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to Salinity	Medium
Tolerance to acid soils	Medium
Cold tolerance	Medium
Heat tolerance	Medium



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000041



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 41-MZ/67-2022 Dated: 23-09-2022
Crop: Maize Denomination of Variety: RS-9067
Type: Enlisted Conventional/GMC: Conventional
OP/Hybrid: Hybrid Local/Exotic: Local

As declared

- That Mohsin Raza

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:

MOHSIN RAZA

محسن رضا

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 23rd day of September 2022 and expiring on the 22nd day of September 2042



Registrar

Date of Grant 09-01-2025

3. Application No.: PBRR-Maize-68/22

Name of the applicant: Mohsin Raza
 Institute: Rawal Seed Corporation KLP Road, Sadiqabad
 Name of Breeder(s):
 i. Mohsin Raza
 Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of variety: MSCPL-48
 Crop: Maize (*Zea mays* 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
type of variety	Male inbred
Days to Maturity	
Maturity Duration	Long
Sowing Time	Mid Jan to Mid Feb
SEEDLING CHARACTERISTICS	
Seedling length (cm)	2.5
Coleoptile's anthocyanin	Absent
First leaf colour	Green
First leaf tip	Pointed
First leaf length (mm)	35
First leaf width (mm)	10-15
PLANT CHARACTERISTICS FOR INBRED LINES ONLY	
Plant length up to flag leaf	Long
PLANT CHARACTERISTICS FOR HYBRID AND OPEN POLLINATED VARIETIES ONLY	

Stem length (cm)	130-135
Internodal length (cm)	12
Internodal diameter (cm)	4
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)	Drooping
Leaf width of blade (leaf of upper ear)	Medium
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	90-92
50% Tassel emergence (days)	Late
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present
Angle between main axis and lateral branches	Wide
Attitude of lateral branches (in lower third of tassel)	Curved
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Absent
Density of spikelets (in middle third of tassel)	Dense
Tassel angle between main axis and lateral branches	Wide
Tassel length (cm)	28
Tassel stalk length (cm)	29
Exsertion above flag leaf (cm)	5
No. of lateral branches	17-19
Lateral branches density	Semi dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Green

Pollen color	Yellow
Glume color	Pink
EAR CHARACTERISTICS	
50% silk emergence(days)	95-97
Silk color	Pink
Insertion height (cm)	75-80
Peduncle length (cm)	3.5-4
Ear leafy extensions	Absent
Ear husk length	Long
No. of husk blades	7
Ear shape	Conical
Ear length (cm)	15-16
Ear diameter (cm)	4
Seed rows/ear	14
Seed/row	30
Seed row arrangement	Straight
No. of ears/plant	1-2
Ear weight (g)	
Cob Pith color	
Cob color	White
SEED CHARACTERISTICS	
Seed color	Orange
Seed tip color	White
Color of sides	Orange
Seed shape	Toothed
Seed length (mm)	8
Seed width (mm)	6
Seed thickness (mm)	3.8
Seed type	Flint
Seed wax	Absent
Seed size	Bold

Seed weight/ear (g)	56
1000 Seed weight (g)	145
Grain. Cob ratio	78.7
Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Present
Enviromental Adaptibility	
Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to Salinity	Medium
Tolerance to acid soils	Medium
Cold tolerance	Medium
Heat tolerance	Medium



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

Serial No. 000042

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 42-MZ/68-2022

Dated: 23-09-2022

Crop: Maize

Denomination of Variety: MSCPL-48

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Local

As declared

- That Mohsin Raza

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:

MOHSIN RAZA

محسن رازا

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 23rd day of September 2022 and expiring on the 22nd day of September 2042



Registrar

Date of Grant 09-01-2025

4. Application No.: PBRR-Maize-69/22

Name of the applicant: Mohsin Raza
 Institute: Rawal Seed Corporation KLP Road, Sadiqabad
 Name of Breeder(s):
 i. Mohsin Raza
 Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of variety: MSCPL-117
 Crop: Maize (*Zea mays*)
 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
type of variety	Female Inbred
Days to Maturity	
Maturity Duration	Medium
Sowing Time	Mid Jan to Mid Feb
SEEDLING CHARACTERISTICS	
Seedling length (cm)	4
Coleoptile's anthocyanin	Weak
First leaf colour	Other
First leaf tip	Pointed
First leaf length (mm)	30
First leaf width (mm)	18
PLANT CHARACTERISTICS FOR INBRED LINES ONLY	
Plant length up to flag leaf	Long (>226 cm)
PLANT CHARACTERISTICS FOR HYBRID AND OPEN POLLINATED VARIETIES ONLY	

Stem length (cm)	180-185
Internodal length (cm)	16
Internodal diameter (cm)	3
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Present
LEAF CHARACTERISTICS	
Leaf angle between blade and stem (on leaf just above upper ear)	Small (<45°)
Leaf attitude of blade (on leaf just above upper ear)	Straight
Leaf width of blade (leaf of upper ear)	Narrow (<8cm)
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	80-85
50% Tassel emergence (days)	Late (>55 days)
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	Wide
Attitude of lateral branches (in lower third of tassel)	Strongly curved irregular
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Absent
Density of spikelets (in middle third of tassel)	Sparse
Tassel angle between main axis and lateral branches	Wide (>45)
Tassel length (cm)	40
Tassel stalk length (cm)	46-47
Exsertion above flag leaf (cm)	6-7
No. of lateral branches	14
Lateral branches density	Lax
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Creamy

Pollen color	Yellow
Glume color	Green
EAR CHARACTERISTICS	
50% silk emergence(days)	88-90
Silk color	Pink
Insertion height (cm)	90-95
Peduncle length (cm)	5
Ear leafy extensions	Absent
Ear husk length	Medium
No. of husk blades	7
Ear shape	Cylindrical
Ear length (cm)	20
Ear diameter (cm)	5
Seed rows/ear	16
Seed/row	38
Seed row arrangement	Straight
No. of ears/plant	1-2
Ear weight (g)	131
Cob Pith color	Red
Cob color	Pink
SEED CHARACTERISTICS	
Seed color	Yellow
Seed tip color	White
Color of sides	Yellow
Seed shape	Toothed
Seed length (mm)	12
Seed width (mm)	6
Seed thickness (mm)	4.5
Seed type	Semi dent
Seed wax	Absent
Seed size	Medium

Seed weight/ear (g)	112
1000 Seed weight (g)	225
Grain. Cob ratio	85.20%
Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Present
Enviromental Adaptibility	
Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to Salinity	Medium
Tolerance to acid soils	Medium
Cold tolerance	Medium
Heat tolerance	Medium



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000043



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 43-MZ/69-2022

Dated: 23-09-2022

Crop: Maize

Denomination of Variety: MSCPL-117

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Local

As declared

- That Mohsin Raza

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:

MOHSIN RAZA

محسن رازا

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 23rd day of September 2022 and expiring on the 22nd day of September 2042



Registrar

Date of Grant 09-01-2025

5. Application No.: PBRR-Maize-70/22

Name of the applicant: Mohsin Raza
 Institute: Rawal Seed Corporation, Sadiqabad
 Name of Breeder(s):
 i. Mohsin Raza
 Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of variety: PHSC-12
 Crop: Maize (*Zea mays* 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, KPK
Type of variety	Male inbred
Maturity Duration	Long
Sowing Time	Mid July to mid August
SEEDLING CHARACTERISTICS	
Seedling length (cm)	2-2.5
Coleoptile's anthocyanin	Medium
First leaf colour	Other
First leaf tip	Pointed
First leaf length (mm)	6-7
First leaf width (mm)	1.5
PLANT CHARACTERISTICS FOR INBRED LINES ONLY	
Plant length up to flag leaf	Medium
STEM CHARACTERISTICS	
Stem length (cm)	136-140
Internodal length (cm)	8

Internodal diameter (cm)	4
Mid node anthocyanin	Present
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)	Straight
Leaf width of blade (leaf of upper ear)	Medium
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	60-65
50% Tassel emergence (days)	Late
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Present
Angle between main axis and lateral branches	Narrow
Attitude of lateral branches (in lower third of tassel)	Straight
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Present
Density of spikelets (in middle third of tassel)	Dense
Tassel angle between main axis and lateral branches	Narrow
Tassel length (cm)	31
Tassel stalk length (cm)	24
Exsertion above flag leaf (cm)	7
No. of lateral branches	8-9
Lateral branches density	Dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Purple
Pollen color	Yellow

Glume color	Purple
EAR CHARACTERISTICS	
50% silk emergence(days)	68-70
Silk color	Purple
Insertion height (cm)	55-60
Peduncle length (cm)	4-5
Ear leafy extensions	Absent
Ear husk length	Medium
No. of husk blades	10
Ear shape	Conical
Ear length (cm)	20-22
Ear diameter (cm)	6
Seed rows/ear	12
Seed/row	28
Seed row arrangement	Straight
No. of ears/plant	1-2
Cob color	White
SEED CHARACTERISTICS	
Seed color	Redish
Seed tip color	White
Color of sides	Redish
Seed shape	Toothed
Seed length (mm)	8.7
Seed width (mm)	6
Seed thickness (mm)	3.9
Seed type	Flint
Seed wax	Absent
Seed size	Medium
Seed weight/ear (g)	61
1000 Seed weight (g)	232
Grain. Cob ratio	81%

Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Present
Enviromental Adaptibility	
Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to Salinity	Medium
Tolerance to acid soils	Medium
Cold tolerance	Medium
Heat tolerance	Medium



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000044



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 44-MZ/70-2022 Dated: 23-09-2022
Crop: Maize Denomination of Variety: PHSC -12
Type: New Conventional/GMC: Conventional
OP/Hybrid: OP Local/Exotic: Local

As declared

- That Mohsin Raza

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:

MOHSIN RAZA

محسن رaza

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 23rd day of September 2022 and expiring on the 22nd day of September 2042



Registrar

Date of Grant 09-01-2025

6. Application No.: PBRR-Maize-71/22

Name of the applicant: Mohsin Raza
Institute: Rawal Seed Corporation, Sadiqbqad
Name of Breeder(s):
i. Mohsin Raza
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of variety: PHSC-226
Crop: Maize (*Zea mays* 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
type of variety	Female Inbred
Maturity Duration	Long
Sowing Time	Mid July to Mid August
SEEDLING CHARACTERISTICS	
Seedling length (cm)	3-4
Coleoptile's anthocyanin	Absent
First leaf colour	Green
First leaf tip	Pointed
First leaf length (mm)	50
First leaf width (mm)	20
PLANT CHARACTERISTICS FOR INBRED LINES ONLY	
Plant length up to flag leaf	Long
STEM CHARACTERISTICS	
Stem length (cm)	160-165
Internodal length (cm)	10

Internodal diameter (cm)	3.5
Mid node anthocyanin	Absent
Stem tillering	Absent
Stem anthocyanin coloration of brace roots	Absent
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)	Drooping
Leaf width of blade (leaf of upper ear)	Narrow
TASSEL CHARACTERISTICS	
50% Tassel emergence (days)	55-60
50% Tassel emergence (days)	Late
Anthocyanin coloration at the base of glume (in middle third of main axis)	Absent
Anthocyanin coloration of glume excluding base (in middle third of main axis)	Absent
Angle between main axis and lateral branches	Wide
Attitude of lateral branches (in lower third of tassel)	Curved
Anthocyanin coloration of anthers (in middle third of main axis on fresh anthers)	Absent
Density of spikelets (in middle third of tassel)	Sparse
Tassel angle between main axis and lateral branches	Wide
Tassel length (cm)	30
Tassel stalk length (cm)	33-34
Exsertion above flag leaf (cm)	4
No. of lateral branches	9-10
Lateral branches density	Semi dense
FLOWER CHARACTERISTICS	
Anther fertility	Normal
Pollen shading	Heavy
Anther color	Creamy
Pollen color	Yellow

Glume color	Yellow
EAR CHARACTERISTICS	
50% silk emergence(days)	57-62
Insertion height (cm)	50-55
Peduncle length (cm)	3
Ear leafy extensions	Absent
Ear husk length	Long
No. of husk blades	9-10
Ear shape	Conical
Ear length (cm)	20-22
Ear diameter (cm)	4
Seed rows/ear	14
Seed/row	28
Seed row arrangement	Spiral
No. of ears/plant	1-2
Cob color	White
SEED CHARACTERISTICS	
Seed color	Yellow
Seed tip color	White
Color of sides	Yellow
Seed shape	Toothed
Seed length (mm)	9
Seed width (mm)	6.5
Seed thickness (mm)	4
Seed type	Flint
Seed wax	Absent
Seed size	Medium
Seed weight/ear (g)	91
1000 Seed weight (g)	335
Grain. Cob ratio	81%
Yeild/ha.(mt)	

Seed sweetness	Absent
Seed waxiness	Absent
Seed opaqueness	Present
Enviromental Adaptibility	
Flowering response to seasons	Variable
Drought tolerance	Medium
Tolerance to Salinity	Medium
Tolerance to acid soils	Medium
Cold tolerance	Medium
Heat tolerance	Medium



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

Serial No. 000045

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 45-MZ/71-2022

Dated: 23-09-2022

Crop: Maize

Denomination of Variety: PHSC -226

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Local

As declared

- That Mohsin Raza

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:

MOHSIN RAZA

محسن رازا

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 23rd day of September 2022 and expiring on the 22nd day of September 2042



Registrar

Date of Grant 09-01-2025

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

Name of the applicant: Director, NIGAB, NARC, PARC
Institute: National Institute of Genomics and Advance Biotechnology,
NARC, Islamabad

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

Name of Co-breeder(s):

Application for: New Plant Variety
Denomination of variety: KM-52
Crop: Rice (*Oryza sativa* L.)
Type of the variety: OPV
Name of initial variety
(in case EDV): Not Applicable

Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Seedling Color	light green	light green
Coleoptile color	colorless	colorless
Seedling length cm	14.2	13.9
Leaf length cm	43	41
Leaf length of blade	Medium	Medium
Leaf anthocynin	Absent	Absent
Leaf width cm	1.3	1
Leaf width	Medium	Medium
Leaf pubescence	Sparse	Sparse
Leaf color	Green	Green
Leaf sheath color	Green	Green

Leaf senescence	Intermediate	Intermediate
Ligule color	Papery	Papery
Ligule length cm	2.3	2.1
Ligule shape	2-cleft	2-cleft
Collar color	Pale Green	Pale Green
Flag leaf attitude	Semi Erect	Semi Erect
Flag leaf length	36	32
Flag leaf width	1.4	1.2
Mature stem length cm	105	102
Stem attitude	Semi Erect	Semi Erect
Stem thickness cm	0.35	0.33
Stem stiffness	Semi Stiff	Semi Stiff
Tillers/plant	11-14	10-12
Internode color	light yellow	light yellow
no. of nodes/ stem	3	3
maturity straw color	straw	straw
Panicle length cm	27	24
Panicle length	medium	medium
Panicle type	compact	compact
Spikelet density	dense	dense
Spikelets/panicle	180	170
Branches/ panicle	moderate	moderate
Secondary Branches	present	present
Intensity of secondary branches	profuse	profuse
Attitude of Branches	semi erect	semi erect
Panicle exeration	well exerted	well exerted
Panicle curvature of main axis	semi straight	semi straight
Awning at maturity	absent	absent
Awn color at maturity	Absent	absent
Shattering	low	low
Threshability	easy	easy

Seed Awning	absent	absent
Apiculus color (maturity)	straw	straw
Husk color	straw	straw
Husk pigment	absent	Absent
Husk pubescence	medium	medium
pubescence length	short	short
Seed shape	semi crescent	semi crescent
Seed length mm	10.1	10.1
Seed width mm	2.1	2.1
Seed thickness mm	1.5	1.5



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000046



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 46-RC/96-2023

Dated: 12-10-2023

Crop: Rice

Denomination of Variety: KM-52

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Exotic

As declared

- That Dr. Ghulam Muhammad Ali, Dr. Zaheer Abbas, Dr. Muhammad Ramzan Khan, Dr. Kashif Naem, Dr. Zhi-Kang Li & Dr. Jian-Long Xu

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:

**NATIONAL INSTITUTE OF GENOMICS AND ADVANCED BIO-TECHNOLOGY,
NARC, ISLAMABAD**

نیشنل انسٹی ٹیوٹ آف جینومکس اینڈ ایڈوانسڈ بائیو ٹیکنالوجی، 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 12th day of October 2023 and expiring on the 11th day of October 2043



Registrar

Date of Grant 09-01-2025

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

Name of the applicant: Director, NIGAB, NARC, PARC
Institute: National Institute of Genomics and Advance Biotechnology
Name of Breeder(s):
i. Dr. Ghulam Muhammad Ali, NIGAB
ii. Dr. Zaheer Abbas, NIGAB
iii. Dr. Kashif Naeem, NIGAB,
iv. Dr. Zhi-Kang Li, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
v. Dr. Jian-Long Xu, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of variety: GM Ali-76
Crop: Rice (*Oryza sativa*)
Type of the variety: OPV
Name of initial variety (in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Seedling Color	light green	light green
Coleoptile color	colorless	colorless
Seedling length cm	6	6
Leaf length cm	18	16
Leaf length of blade	medium	medium
Leaf anthocynin	absent	absent
Leaf width cm	1	1
Leaf width	medium	medium
Leaf pubescence	sparse	sparse
Leaf color	green	green
Leaf sheath color	green	green
Leaf senescence	intermediate	intermediate
Ligule color	papery	papery

Ligule length cm	2.31	2.28
Ligule shape	2-cleft	2-cleft
Collar color	pale green	pale green
Flag leaf attitude	semi erect	semi erect
Flag leaf length	17	15
Flag leaf width	2	2
Mature stem length cm	84	80
Stem attitude	semi erect	semi erect
Stem thickness cm	0.35	0.32
Stem stiffness	semi stiff	semi stiff
Tillers/plant	11-14	10-13
Internode color	light yellow	light yellow
no. of nodes/ stem	4	4
maturity straw color	straw	straw
Panicle length cm	26	24
Panicle length	long	long
Panicle type	compact	compact
Spikelet density	semi dense	semi dense
Spikelets/panicle	254	230
Branches/ panicle	moderate	moderate
Secondary Branches	present	present
Intensity of secondary branches	moderate	moderate
Attitude of Branches	semi erect	semi erect
Panicle exeration	mostly exerted	mostly exerted
Panicle curvature of main axis	drooping	drooping
Awning at maturity	absent	absent
Awn color at maturity	absent	absent
Shattering	moderate	moderate
Thresh ability	easy	easy
Seed Awning	absent	absent
Apiculus color (maturity)	straw	straw

Husk color	straw	straw
Husk pigment	absent	absent
Husk pubescence	weak	weak
pubescence length	short	short
Seed shape	semi crescent	semi crescent
Seed length mm	10.1	10.1
Seed width mm	2	2
Seed thickness mm	1.4	1.4



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000047



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 47-RC/97-2023

Dated: 12-10-2023

Crop: Rice

Denomination of Variety: GMAlI-76

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Exotic

As declared

- That Dr. Ghulam Muhammad Ali, Dr. Zaheer Abbas, Dr. Kashif Naeem, Dr. Zhi-Kang Li & Dr. Jian-Long Xu

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:

**NATIONAL INSTITUTE OF GENOMICS AND ADVANCED BIO-TECHNOLOGY,
NARC, ISLAMABAD**

نیشنل انسٹیٹیوٹ آف جینومکس اینڈ ایڈوانسڈ بائیو ٹیکنالوجی، 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 12th day of October 2023 and expiring on the 11th day of October 2043



Registrar

Date of Grant 09-01-2025

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

Name of the applicant: Director, NIGAB, NARC, PARC
Institute: National Institute of Genomics and Advance Biotechnology
Name of Breeder(s):
i. Dr. Ghulam Muhammad Ali, NIGAB
ii. Dr. Zaheer Abbas, NIGAB
iii. Dr. Muhammad Ramzan Khan, NIGAB
iv. Dr. Kashif Naeem, NIGAB,
v. Dr. Zhi-Kang Li, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
vi. Dr. Jian-Long Xu, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of variety: GM Ali-5
Crop: Rice (*Oryza sativa* L.)
Type of the variety: OPV
Name of initial variety (in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION
Seedling Color	green
Coleoptile color	colorless
Seedling length cm	6
Leaf length cm	17
Leaf length of blade	Medium
Leaf anthocynin	Absent
Leaf width cm	2
Leaf width	Medium
Leaf pubescence	Absent
Leaf color	Green
Leaf sheath color	Pale Green
Leaf senescence	Intermediate
Ligule color	Other

Ligule length cm	2.2
Ligule shape	Truncate
Collar color	Pale Green
Flag leaf attitude	Erect
Flag leaf length	16
Flag leaf width	2
Mature stem length cm	64
Stem attitude	Erect
Stem thickness cm	0.33
Stem stiffness	Semi stiff
Tillers/plant	14-16
Internode color	light yellow
no. of nodes/ stem	3
maturity straw color	straw
Panicle length cm	9
Panicle length	medium
Panicle type	medium compact
Spikelet density	semi dense
Spikelets/panicle	116
Branches/ panicle	moderate
Secondary Branches	present
Intensity of secondary branches	moderate
Attitude of Branches	semi erect
Panicle exeration	mostly exerted
Panicle curvature of main axis	drooping
Awning at maturity	absent
Awn color at maturity	straw
Shattering	very low
Threshability	easy
Seed Awning	absent
Apiculus color (maturity)	straw

Husk color	straw
Husk pigment	absent
Husk pubescence	sparse
pubescence length	short
Seed shape	spear
Seed length mm	10.8
Seed width mm	2.2
Seed thickness mm	2



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

Serial No. 000048

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 48-RC/98-2023	Dated:	12-10-2023
Crop: Rice	Denomination of Variety: GMAlI-5	
Type: New	Conventional/GMC: Conventional	
OP/Hybrid: OP	Local/Exotic: Exotic	

As declared

- That Dr. Ghulam Muhammad Ali, Dr. Zaheer Abbas, Dr. Muhammad Ramzan Khan, Dr. Kashif Naem, Dr. Zhi-Kang Li & Dr. Jian-Long Xu

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:

NATIONAL INSTITUTE OF GENOMICS AND ADVANCED BIO-TECHNOLOGY, NARC, ISLAMABAD

نیشنل انسٹی ٹیوٹ آف جینومکس اینڈ ایڈوانسڈ بائیو ٹیکنالوجی، 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 12th day of October 2023 and expiring on the 11th day of October 2043



Registrar

Date of Grant 09-01-2025

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

Name of the applicant: Director, NIGAB, NARC, PARC
Institute: National Institute of Genomics and Advance Biotechnology
Name of Breeder(s):
i. Dr. Ghulam Muhammad Ali, NIGAB
ii. Dr. Zaheer Abbas, NIGAB
iii. Dr. Kashif Naeem, NIGAB,
iv. Dr. Zhi-Kang Li, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
v. Dr. Jian-Long Xu, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences
Name of Co-breeder(s):
Application for: New Plant Variety
Denomination of variety: GM Ali-48
Crop: Rice (*Oryza sativa* L.)
Type of the variety: OPV
Name of initial variety (in case EDV): Not Applicable
Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Seedling Color	green	green
Coleoptile color	colorless	colorless
Seedling length cm	6	5
Leaf length cm	16	14
Leaf length of blade	Medium	Medium
Leaf anthocynin	Absent	Absent
Leaf width cm	2	2
Leaf width	Medium	Medium
Leaf pubescence	Sparse	Sparse
Leaf color	Green	Green
Leaf sheath color	Green	Green
Leaf senescence	Intermediate	Intermediate

Ligule color	Other	Other
Ligule length cm	2	2
Ligule shape	2-cleft	2-cleft
Collar color	Pale Green	Pale Green
Flag leaf attitude	Semi Erect	Semi Erect
Flag leaf length	16	14
Flag leaf width	2	2
Mature stem length cm	90	85
Stem attitude	Semi Erect	Semi Erect
Stem thickness cm	0.29	0.29
Stem stiffness	Semi Stiff	Semi Stiff
Tillers/plant	13-15	11-13
Internode color	light yellow	light yellow
no. of nodes/ stem	4	4
maturity straw color	straw	straw
Panicle length cm	15	13
Panicle length	short	short
Panicle type	medium compact	medium compact
Spikelet density	semi dense	semi dense
Spikelets/panicle	202	190
Branches/ panicle	moderate	moderate
Secondary Branches	present	present
Intensity of secondary branches	moderate	moderate
Attitude of Branches	semi erect	semi erect
Panicle exeration	mostly exerted	mostly exerted
Panicle curvature of main axis	drooping	drooping
Awning at maturity	absent	absent
Awn color at maturity	absent	absent
Shattering	low	Low
Threshability	easy	Easy
Seed Awning	absent	absent

Apiculus color (maturity)	straw	Straw
Husk color	straw	Straw
Husk pigment	absent	absent
Husk pubescence	low	Low
pubescence length	short	Short
Seed shape	semi crescent	semi crescent
Seed length mm	11	11
Seed width mm	2	2
Seed thickness mm	2	2



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

Serial No. 000049

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No. 49-RC/99-2023

Dated: 12-10-2023

Crop: Rice

Denomination of Variety: GMAlI-48

Type: New

Conventional/GMC: Conventional

OP/Hybrid: OP

Local/Exotic: Exotic

As declared

- That Dr. Ghulam Muhammad Ali, Dr. Zaheer Abbas, Dr. Kashif Nacem, Dr. Zhi-Kang Li & Dr. Jian-Long Xu

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:

**NATIONAL INSTITUTE OF GENOMICS AND ADVANCED BIO-TECHNOLOGY,
NARC. ISLAMABAD**

نیشنل انسٹی ٹیوٹ آف جینومکس اینڈ ایڈوانسڈ بائیو ٹیکنالوجی، 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 12th day of October 2023 and expiring on the 11th day of October 2043



Registrar

Date of Grant 09-01-2025

11. Application No.: PBRR-Mungbean-76/23

Name of the Applicant: Director, NIAB, Faisalabad
 Institute: Nuclear Institute for Agriculture & Biology (NIAB),
 Faisalabad
 Name of Breeder(s):
 i. Dr. Muhammad Jawad Asghar
 ii. Muhammad Shahid
 iii. Fiaz Ahmad
 iv. Khalid Pervaiz Akhtar
 Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of Variety: Abbas Mung
 Crop: Mungbean (*Vigna radiata* (L.) Wilczek)
 Type of the variety: OPV
 Name of initial variety
 (in case EDV): Not Applicable
 Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Type of Variety	Semi determinate	Semi determinate
Days to Maturity	65-75	65-75
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Seedling length (cm)	6.5-8	7-9
Hypocotyle length (cm)	6-7.4	6.5-8
Hypocotyle color	Green purple	Green purple
Seedling bud pubescence	Profuse	Profuse
PLANT CHARACTERISTICS		
Growth habit	Erect	Erect
Main stem length (cm)	40-55	50-60
Plant color	Light green	Light green
Canopy spread	Medium	Medium
Stem hairiness	Medium	Medium
Stem nodes	8-10	9-10

Stem color	Green	Green
Twin,g tendency	Slight	Slight
Branch pattern	All over	All over
No. of primary branches	1-3	1-3
LEAF CHARACTERISTICS		
Leaf color	Light green	Light green
Petiole length (cm)	11-15	10-13
Leaflet size	Medium	Medium
No. of leaflets	3	3
Leaflet tip	Round to Acute	Round to Acute
Terminal leaflet length (cm)	8-9	8.5-9.5
Terminal leaflet width (cm)	6.5-7.5	7-7.5
Leaf pubescence	Absent	Absent
Terminal leaflet (leaf) shape	Ovate (leaf)	Ovate (leaf)
Leaf angle	Semi erect	Semi erect
Leaf petiole anthocyanin	Light purple	Medium
Leaf senescence	Medium	Medium
FLOWER CHARACTERISTICS		
Days to Flowering 50%	40-45 (50%)	40-45 (50%)
Flowering duration	Medium	Medium
Calyx color	Yellowish green	Yellowish green
Corrola color	Greenish yellow	Greenish yellow
Flower size	Medium	Medium
Pedicel anthocyanin	Weak	Weak
POD CHARACTERISTICS		
Receme position	Above canopy	Above canopy
Pod length (cm)	8-10	8-9.5
Pod width (mm)	5-6	5.5-6
Pod size	Medium	Medium
Pod shape	Semi flat	Semi flat
Pod curvature	Slight	Slight

Pod beak shape	Hook	Hook
Pod Beak (mm)	2-3	2-3
Seeds/pod	10-12	9-10
Pod pubescence	Medium	Medium
Pod construction	Slight	Slight
Clusters/plant	6-8	8-9
Pod attachment	Pendant	Pendant
Pods/cluster	5-6	5-6
Pod shattering	Absent	Absent
Pods/plant	25-40	30-45
Mature pod color	Brown	Blackish brown
SEED CHARACTERISTICS		
Seed color	Light green	Light green
Seed shape	Drum	Drum
Seed dots	Absent	Absent
Seed testa texture	Smooth	Smooth
Seed surface	Shinny	Shinny
Seed size	Medium	Medium to bold
Seed length (mm)	5-6	5-5.5
Seed width (mm)	3.8-4	3.8-4
1000 seed weight (g)	50	50
Cotyledon color	Yellow	Yellow
Hilum shape	Non-concave	Non-concave



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

Serial No. 000051

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	51-MB/76-2023	Dated:	20-01-2023
Crop:	Mungbean	Denomination of Variety:	Abbas Mung
Type:	Registered	Conventional/GMC:	Conventional
OP/Hybrid:	OP	Local/Exotic:	Local

As declared

- That Dr. Muhammad Jawad Asghar, Muhammad Shahid, Fiaz Ahmad, & Khalid Pervaiz 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:

NUCLEAR INSTITUTE FOR AGRICULTURE & BIOLOGY, FAISALABAD

نیوکلیر انسٹی ٹیوٹ فار ایگریکلچر اینڈ بائیولوجی، 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 January 2023 and expiring on the 19th day of January 2043



Registrar

Date of Grant 04-03-2025

12. 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. Abdul Ghaffar
 ii. Niaz Hussain
 iii. Mudassar Khaliq
 iv. Dr. Muhammad Aslam
 v. Dr. Khalid Hussain

Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of Variety: AZRI-Mung-2021
 Crop: Mungbean (*Vigna radiata* (L.) Wilczek)
 Type of the variety: OPV
 Name of initial variety (in case EDV): Not Applicable
 Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Type of Variety	Determinate	Indeterminate
Days to Maturity	90-95 Autumn	Range 75-80 Summer
Maturity Duration	Medium	Medium
Shorter than		6601
Longer than		Equal to NM 92
Sowing date		1st fortnight of june
SEEDLING CHARACTERISTICS		
Seedling length (cm)	5-6	12-15 (2 weeks)
Hypocotyle length (cm)	4-5	6-7
Hypocotyle color	Green purple	Green
Seedling bud pubescence	Sparse	Medium
PLANT CHARACTERISTICS		
Growth habit	Erect	Semi erect
Main stem length (cm)	30-35	30 (Summer)
Taller than		Equal to NM 92

Shorter than		NM 98
Plant color	Green	D Green (FL)
Canopy spread	Narrow	Medium
Stem hairiness	Medium	Medium
Stem nodes	10-11	2-5 (Average 3.5)
Stem color	Light green	Green
Twin,g tendency	Absent	Absent
Branch pattern	Central	All over
No. of primary branches	0-1	2.4 (pod bearing branches)
LEAF CHARACTERISTICS		
Leaf color	Green with light purple veins	D Green
Petiole length (cm)	11-14	7-10
Leaflet size	Medium to large	Medium
No. of leaflets	3	3
Leaflet tip	Acute	Acuminate
Terminal leaflet length (cm)	8.5-9	
Terminal leaflet width (cm)	7.5-8	
Leaf pubescence	Sparse	Me (possibly medium)
Terminal leaflet (leaf) shape	Ovate (leaf)	Obovate
Leaf angle	Semi erect	Semi erect
Leaf petiole anthocyanin	Light purple	Light purple
Leaf senescence	Medium	Late
FLOWER CHARACTERISTICS		
Days to Flowering 50%	40-45	35-40
Flowering duration	Short	Medium
Calyx color	Yellowish green	Green
Corrola color	Greenish yellow	Gr'sh yellow
Flower size	Medium	Medium
Pedicel anthocyanin	Weak	Medium
POD CHARACTERISTICS		
Receme position	Above canopy	Inter

Pod length (cm)	7.5-9	10
Pod size	Medium	Medium
Pod shape	Semi flat to round	Rounded
Pod curvature	Medium	Slight
Pod beak shape	Hooked	Other
Pod Beak (mm)	2	6-10 (length)
Seeds/pod	7-12	9-11
Pod pubescence	Sparse	Medium
Pod construction	Slight	Medium
Clusters/plant	3-6	
Pod attachment	Pendent	Semi erect
Pods/cluster	3-5	
Pod shattering	Low	ab (possibly absent)
Pods/plant	18-22	35-40
Mature pod color	Brown	Brownish black
SEED CHARACTERISTICS		
Seed color	Green	Dr green
Seed shape	Drum	Round/, Drum
Seed dots	Absent	Absent
Seed testa texture	Smooth	Smooth
Seed surface	Shinny	Shinny
Seed size	Medium	Bold
Smaller than		NM 21-21
Seed length (mm)	4.18-5	5-6
Seed width (mm)	2.92-3.73	4
1000 seed weight (g)	50	60
Cotyledon color	Yellowish	Other
Seed protien (%)		23
Hilum shape	Concave	Non concave
Average Yield (kg/ha)		2000
RESISTANCE		

Lodging		Resistant
Diseases		Wilt: MR
Mosaic		R
Others		MR
Distinctness		Leaf blade is wider than NM 92 Leaflet length is shorter than NM 92
Notes		Leaf blade is wider than NM 92 Leaflet length is shorter than NM 92 Seed hilum is longer than NM 92 Seed surface is more shining than NM 92 First flower flush is more than NM 92 Rapid growth rate than NM 92 in early stages More seed size than NM 92



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000052



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	52-MB/87-2023	Dated:	11-08-2023
Crop:	Mungbean	Denomination of Variety:	AZRI-MUNG-2021
Type:	Registered	Conventional/GMC:	Conventional
OP/Hybrid:	OP	Local/Exotic:	Local

As declared

- That Abdul Ghaffar, Niaz Hussain, Mudassar Khaliq, Dr. Muhammad Aslam & Dr. Khalid Hussain

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:

ARID ZONE RESEARCH INSTITUTE, BHAKKAR

ایرڈزون ریسرچ انسٹیٹیوٹ، بھکر

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 11th day of August 2023 and expiring on the 10th day of August 2043



Registrar

Date of Grant 04-03-2025

13. 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. Niaz Hussain
 ii. Mudassar Khaliq
 iii. Abdul Ghaffar
 iv. Dr. Muhammad Aslam
 v. Dr. Khalid Hussain

Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of Variety: Jumbo Mung
 Crop: Mungbean (*Vigna radiata* (L.) Wilczek)
 Type of the variety: OPV
 Name of initial variety (in case EDV): Not Applicable
 Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Seedling characteristics		
Hypocotyl anthocyanin	Absent	Absent
Seedling length (cm) (After Two weeks)	9-13	9-13
Seedling pubescence	Present	Present
Intensity of pubescence	Medium	Medium
Plant characteristics		
Growth habit	Semi erect (30°-60°)	Semi erect (30°-60°)
Growth type	Indeterminate	Indeterminate
Plant height (cm)	50-55	50-55
Plant height	Medium (50-70 cm)	Medium (50-70 cm)
Taller than	AM-2006 Cultivar	AM-2006 Cultivar
Shorter than	AM-2018 Cultivar	AM-2018 Cultivar
Canopy spread	Medium	Medium
Stem characteristics		
Stem color	Greenish purple	Greenish purple

Stem hairiness	Medium	Medium
No. of nodes/stem	3-7	3-7
Twining tendency	Slight	Slight
Branching pattern	Central	Central
No. of secondary branches	6-9	6-9
Lodging	Resistant	Resistant
Leaf characteristics		
Leaf attitude	Semi erect	Semi erect
Petiole anthocyanin	Weak	Weak
Petiole color	Green with purple splashes	Green with purple splashes
Petiole length (cm)	7-10	7-10
Leaf color	L. green	L. green
Leaf vein color	Green	Green
Terminal leaflet shape	Ovate	Ovate
Leaf pubescence	Present	Present
Leaf size	Medium	Medium
No. of leaflets/leaf	03	03
Terminal leaflet length (cm)	6-9	6-9
Terminal leaflet width (cm)	6-10	6-10
Flower characteristics		
Days of 50% flowering	35-44	35-44
Flowering duration	Medium	Medium
Color of petal (Standard)	Purplish green	Purplish green
Flower size	Large	Large
Peduncle anthocyanin	Weak	Weak
Raceme position	Above canopy	Above canopy
Pod characteristics		
Immature pod color	Green	Green
Pod position	Above canopy	Above canopy
Mature pod color	Brownish/black	Brownish/black
Pod shape	Rounded	Rounded

Pod size	Large	Large
Pod length/width (cm)	9-11/5-7	9-11/5-7
Larger than	AM-2006 Cultivar	AM-2006 Cultivar
Smaller than	AM-2018 Cultivar	AM-2018 Cultivar
Pod curvature	Medium	Medium
Pod beak length (mm)	6-8	6-8
Pod beak shape	Knob	Knob
Pod pubescence	Profuse	Profuse
Pod constriction	Strong	Strong
Pod attachment	Erect	Erect
Pod shattering	Absent	Absent
Pod shedding	Low	Low
Peduncle length (cm)	3-6	3-6
No. of clusters/plant	3-5	3-5
Pods/clusters	2-3	2-3
Pods/plant	34-40	33-43
Seeds/pod	9-11	7-11
Seed characteristics		
Seed color	L. green	L. green
Seed shape	Any other	Any other
Seed coat pattern	Absent	Absent
Seed testa texture	Smooth	Smooth
Seed luster	Dull	Dull
Seed size	Bold	Bold
Seed length (mm)	5.7-6.0	5.7-6.0
Seed width (mm)	3.5-4.0	3.5-4.0
Seed thickness (mm)	3.9-4.0	3.9-4.0
Cotyledon color	L. yellow	L. yellow
Hilum shape	Concave	Concave
000, seed weight (g)	5.3-5.6	5.3-5.6
Yield (kg/ha)	2450	2450

Distinguish characters		
	Medium stature, Medium seed size, Suitable for light soils	Medium stature, Medium seed size, Suitable for light soils



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

Serial No. 000053

Government of Pakistan Plant Breeders' Rights Registry



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	53-MB/88-2023	Dated:	11-08-2023
Crop:	Mungbean	Denomination of Variety:	Jumbo Mung
Type:	Registered	Conventional/GMC:	Conventional
OP/Hybrid:	OP	Local/Exotic:	Local

As declared

- That Niaz Hussain, Mudassar Khaliq, Abdul Ghaffar, Dr. Muhammad Aslam & Dr. Khalid Hussain

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:

ARID ZONE RESEARCH INSTITUTE, BHAKKAR

ایرڈزون ریسرچ انسٹیٹیوٹ، بھکر

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 11th day of August 2023 and expiring on the 10th day of August 2043



Registrar

Date of Grant 04-03-2025

14. Application No.: PBRR-Mungbean-75/23

Name of the Applicant: Director, NIAB, Faisalabad
 Institute: Nuclear Institute for Agriculture & Biology (NIAB),
 Faisalabad
 Name of Breeder(s):
 i. Abdul Ghaffar
 ii. Niaz Hussain
 iii. Mudassar Khaliq
 iv. Dr. Muhammad Aslam
 v. Dr. Khalid Hussain
 Name of Co-breeder(s):
 Application for: New Plant Variety
 Denomination of Variety: NIAB Mung-2021
 Crop: Mungbean (*Vigna radiata* (L.) Wilczek)
 Type of the variety: OPV
 Name of initial variety
 (in case EDV): Not Applicable
 Salient features:

CHARACTERISTICS	DESCRIPTION	
	1st Year	2nd Year
Type of Variety	Semi determinate	Semi determinate
Days to Maturity	70-80	70-80
Maturity Duration	Medium	Medium
SEEDLING CHARACTERISTICS		
Seedling length (cm)	6-7.5	7-8
Hypocotyle length (cm)	5.5-7	6.5-7
Hypocotyle color	Green purple	Green purple
Seedling bud pubescence	Profuse	Profuse
PLANT CHARACTERISTICS		
Growth habit	Erect	Erect
Main stem length (cm)	42-48	45-50
Plant color	Green	Green
Canopy spread	Medium	Medium

Stem hairiness	Sparse	Sparse
Stem nodes	8-9	8-10
Stem color	Green	Green
Twin,g tendency	Slight	Slight
Branch pattern	All over	All over
No. of primary branches	1-3	1-2
LEAF CHARACTERISTICS		
Leaf color	Green	Green
Petiole length (cm)	8-11	8-11
Leaflet size	Medium	Medium
No. of leaflets	3	3
Leaflet tip	Round to Acute	Acute
Terminal leaflet length (cm)	7-7.5	7-8.5
Terminal leaflet width (cm)	6.5-7	6.5-7
Leaf pubescence	Medium	Medium
Terminal leaflet (leaf) shape	Obviate (leaf)	Ovate (leaf)
Leaf angle	Semi erect	Semi erect
Leaf petiole anthocyanin	Light purple	Light purple
Leaf senescence	Medium	Medium
FLOWER CHARACTERISTICS		
Days to Flowering 50%	40-45 (50%)	45-50 (50%)
Flowering duration	Medium	Medium
Calyx color	Yellowish green	Yellowish green
Corrola color	Greenish yellow	Greenish yellow
Flower size	Medium	Medium
Pedicel anthocyanin	Weak	Weak
POD CHARACTERISTICS		
Receme position	Inter	Inter
Pod length (cm)	8-9	8.5-9.5
Pod width (mm)	5-6.2	5-6
Pod size	Medium	Medium

Pod shape	Roundish	Semi flat
Pod curvature	Slight	Slight
Pod beak shape	Hook	Hook
Pod Beak (mm)	2-3	2-3
Seeds/pod	8-11	9-10
Pod pubescence	Medium	Medium
Pod construction	Slight	Slight
Clusters/plant	8-9	7-9
Pod attachment	Pendent	Pendent
Pods/cluster	4-6	4-6
Pod shattering	Absent	Absent
Pods/plant	30-45	35-45
Mature pod color	Brownish	Brownish
SEED CHARACTERISTICS		
Seed color	Light green	Light green
Seed shape	Drum	Drum
Seed dots	Absent	Absent
Seed testa texture	Smooth	Smooth
Seed surface	Shinny	Shinny
Seed size	Medium	Medium to bold
Seed length (mm)	4.8-5.8	5-5.6
Seed width (mm)	3.6-4.10	3.6-4.25
1000 seed weight (g)	55	55
Cotyledon color	Yellow	Yellow
Hilum shape	Non concave	Non concave



Government of Pakistan
Plant Breeders' Rights Registry

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

Serial No. 000054



CERTIFICATE OF PLANT VARIETY PROTECTION

Registration No.	54-MB/75-2023	Dated:	20-01-2023
Crop:	Mungbean	Denomination of Variety:	NIAB Mung 2021
Type:	Registered	Conventional/GMC:	Conventional
OP/Hybrid:	OP	Local/Exotic:	Local

As declared

- That Dr. Muhammad Jawad Asghar, Muhammad Shahid, Fiaz Ahmad, Khalid Pervaiz Akhtar & Dr. Amjad Hameed

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:

**NUCLEAR INSTITUTE FOR AGRICULTURE & BIOLOGY,
FAISALABAD**

نیوکلیئر انسٹی ٹیوٹ فار ایگریکلچرل بائیو لوجی، 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 January 2023 and expiring on the 19th day of January 2043



Registrar

Date of Grant 04-03-2025

NEWS AND EVENTS

REFORMS IN SEED SECTOR

Rana Tanveer Hussain, Federal Minister for National Food Security and Research, chaired the first National Seed Development and Regulatory Authority (NSDRA) board meeting and stressed the value of high-quality seeds for agricultural productivity and food security. With more provinces being represented to improve governance, the authority seeks to improve seed quality, decrease imports, and boost exports. To establish a competitive, innovative-driven seed industry, NSDRA will concentrate on germplasm development, the adoption of contemporary technologies, and regulatory supervision in the wake of the Seed Amendment Act 2024.

A SEED DIALOGUE FOR ENHANCING AGRICULTURAL PRODUCTIVITY

National Seed Development and Regulatory Authority (NSDRA) in collaboration with PMAS-Arid Agriculture University, Rawalpindi, arranged a seed dialogue on developing competitive seed sector for enhancing agricultural productivity. All the stakeholders of the public and private sectors were there to discuss their issues. A consultative session on Plant Breeders Rights (PBR) was also held and Dr. Naeem, Registrar, briefed the participants of the seed dialogue about the benefits, mechanism, functioning and progress of the PBR.

ADVERSE EFFECT OF DRY WEATHER ON CROPS

A harsh winter drought in Punjab has resulted in a 40% reduction in rainfall, significantly decreasing potato and wheat production and leading to substantial financial losses for farmers. The Pakistan Meteorological Department (PMD) indicated a 42% drop in precipitation since September, with Sindh and Balochistan also facing considerable shortages. Experts are warning about potential flash droughts in the upcoming months, which would worsen Pakistan's water crisis and jeopardize food security. Farmers are urging the government to take immediate action to tackle water scarcity and enhance climate resilience in agriculture.

SUPPORT PRICE FOR WHEAT

The federal government has resolved to eliminate the minimum support price for wheat in accordance with an agreement with the IMF, signifying a significant transformation in Pakistan's wheat marketing system. Officials have confirmed that there are adequate wheat reserves for this

year, and there is no need for imports, while the barriers to inter-provincial wheat movement have been removed. Nevertheless, the National Assembly Standing Committee on Food Security expressed worries about possible wheat shortages in the coming year due to insufficient rainfall and extreme temperatures. The committee has instructed the ministry to create a 20-year plan to tackle the challenges of climate change and population growth on agriculture.

COTTON SOWING TARGET OF PUNJAB

To counteract climate change and increase cotton yield, the Punjab government has set a goal to grow early cotton on one million acres by 2025, with about 300,000 hectares in South Punjab. According to authorities, some 49,000 hectares have already been planted, and farmers who plant more than five acres will get assistance worth Rs 25,000 (USD 89). In support of the province's efforts to revive its cotton industry, officials predict yields of up to 1.87 metric tonnes per acre.

USE OF AI FOR AGRICULTURAL IMPROVEMENT

China has launched Fengdeng, its first AI-driven Seed Large Language Model (Seed LLM), aimed at assisting farmers in choosing crops, maximizing planting efficiency, and identifying problems. Created by Yazhouwan National Laboratory, China Agricultural University, and Shanghai AI Lab, the tool combines biotechnology, big data, and AI to speed up high-yield crop breeding.

CULTIVATION OF 50 MILLION OLIVE TREES

Pakistan's import of edible oil surged to \$4.5 billion annually. To reduce the import of edible oil Punjab government is planning to plant 50 million olive trees on an area of 10 million acres by 2026. Pakistan became the member of International Olive Council (IOC) due to increase in the export of extra virgin and virgin olive oil in 2022.

PLANT DRIVE IS AT PEAK AT PBRR



PBRR Plantation Drive, 2025