

**A REPORT OF THE
SUNFLOWER VARIETY REVIEW BOARD**



ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

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SUNFLOWER VARIETY REVIEW BOARD

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES (May 2019)

The Association of Official Seed Certifying Agencies (AOSCA) Sunflower Variety Review Board (SFVRB), reviewed the following varieties on May 16, 2019. The Board recommended the inclusion of these varieties for certification. Seed of these varieties may be certified, providing production meets all standards of the Certifying Agency of the jurisdiction in which the seed is grown.

All variety information, including descriptions, claims, and research data to support any claim was supplied to the Sunflower Variety Review Board by the applicants. The Sunflower Variety Review Board makes judgment regarding recommendation of varieties for inclusion in certification based on the data supplied. Beyond this, the Sunflower Variety Review Board takes no position on the accuracy or truthfulness of any description or claim made by the applicants.

Further information on current procedures, application forms, and details regarding the Sunflower Variety Review Board can be obtained from:

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Respectfully submitted,

Stephen Sebesta, Chairman
Sunflower Variety Review Board

**2019 AOSCA SUNFLOWER
VARIETY REVIEW BOARD**

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Sunflower

KHE3177R

1. KHE3177R is a high oleic, tribenuron-methyl resistant, oilseed restorer line developed by the pedigree method of selection from the cross SU4907R/SA6106R. SU4907R is a proprietary line with resistance to tribenuron-methyl herbicide. SA6106R is a proprietary high oleic line previously approved.

The pedigree method of selection was used for the development of KHE3177R. It is a bulk of F7 plants tracing back to a single F6 plant. Selection was based on uniform plant type, self compatibility, high oleic fatty acid content, and resistance to tribenuron-methyl herbicide.

2. Hybrids utilizing KHE3177R are adapted to major sunflower growing regions of North and South America, and Europe; the hybrids will be primarily for vegetable oil.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	very short
Branching Type	present, overall
Distal Leaf Shape	narrow triangular to broad triangular
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	longitudinal recurved, medium length
Disk Flower Color	yellow
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	light yellow
Stigma Anthocyanin	absent,
Pappi Color:	green
Head (neck) Attitude	vertical
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin	absent,

State expected variants or other varietal information not described above (if none, state "none").

None claimed.

4. KHE3177R is resistant to tribenuron-methyl herbicide.

5. Breeders seed will be maintained by Nuseed Americas in nursery rows under bags, or by open pollination in isolated fields. Up to two generations beyond breeders seed will be allowed for production of foundation seed. Isolation and other requirements will be in accordance with the seed certification regulations of the state where it is produced.

6. 2019, do not publish certified production acreage.

7. No. Do not share information with PVP database.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 13, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

KHM7069R

1. KHM7069R is a high oleic, imidazolinone resistant, oilseed restorer line developed by the pedigree and backcross method of selection from the cross K12HM69R*4/KLN4528B. K12HM69R is a proprietary line, previously described and approved. KLN4528B is a proprietary line with preferred agronomic characteristics, derived from HA89.

The pedigree and backcross method of selection was used for the development of KHM7069R. It is a bulk of BC3F7 plants tracing back to a single BC3F6 plant. Selection was based on uniform plant type, self compatibility, high oleic fatty acid content, and resistance to imidazolinone herbicide.

2. Hybrids utilizing KHM7069R are adapted to major sunflower growing regions of North and South America, and Europe; the hybrids will be primarily for vegetable oil.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	medium
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	rust
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	lovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

None expected.

4. KHM7069R is resistant to imidazolinone herbicide.

5. Breeders seed will be maintained by Nuseed Americas in nursery rows under bags, or by open pollination in isolated fields. Up to two generations beyond breeders seed will be allowed for production of foundation seed. Isolation and other requirements will be in accordance with the seed certification regulations of the state where it is produced.

6. 2019, do not publish certified production acreage.

7. There is no plan for PVP application at this time. Do not share information with PVP database.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 13, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

KHM7070R

1. KHM7070R is a high oleic, imidazolinone resistant, oilseed restorer line developed by the pedigree and backcross method of selection from the cross K12HM69R*4/KLN4525B. K12HM69R is a proprietary line, previously described and approved. KLN4525B is a proprietary line with preferred agronomic characteristics, derived from HA89.

The pedigree and backcross method of selection was used for the development of KHM7070R. It is a bulk of BC3F7 plants tracing back to a single BC3F6 plant. Selection was based on uniform plant type, self compatibility, high oleic fatty acid content, and resistance to imidazolinone herbicide.

2. Hybrids utilizing KHM7070R are adapted to major sunflower growing regions of North and South America, and Europe; the hybrids will be primarily for vegetable oil.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	medium
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	rust
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	lovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

None expected.

4. KHM7070R is resistant to imidazolinone herbicide.

5. Breeders seed will be maintained by Nuseed Americas in nursery rows under bags, or by open pollination in isolated fields. Up to two generations beyond breeders seed will be allowed for production of foundation seed. Isolation and other requirements will be in accordance with the seed certification regulations of the state where it is produced.

6. 2019, do not publish certified production acreage.

7. There is no plan for PVP application at this time. Do not share information with PVP database.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 13, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

KLM7023R

1. KLM7023R is an imidazolinone resistant, linoleic, oilseed restorer line developed by the pedigree and backcross method of selection from the cross K12HM69R*3/KLN4525B. K12HM69R is a proprietary line, previously described and approved. KLN4525B is a proprietary line with preferred agronomic characteristics, derived from HA89. The pedigree and backcross method of selection was used for the development of KLM7023R. It is a bulk of BC2F7 plants tracing back to a single BC2F6 plant. Selection was based on uniform plant type, self compatibility, high oil content, and resistance to imidazolinone herbicide.

2. Hybrids utilizing KLM7023R are adapted to major sunflower growing regions of North and South America, and Europe; the hybrids will be primarily for vegetable oil.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	medium
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	rust
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	thin
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

None expected.

4. KLM7023R is resistant to imidazolinone herbicide.

5. Breeders seed will be maintained by Nuseed Americas in nursery rows under bags, or by open pollination in isolated fields. Up to two generations beyond breeders seed will be allowed for production of foundation seed. Isolation and other requirements will be in accordance with the seed certification regulations of the state where it is produced.

6. 2019, do not publish certified production acreage.

7. There is no plan for PVP application at this time. Do not share information with PVP database.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 13, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

KSM7551R

1. KSM7551R is an imidazolinone resistant, linoleic, confectionary restorer line developed by the pedigree and backcross method of selection from the cross K13SM54R*3/KLN4528B. K13SM54R is a proprietary line, previously described and approved. KLN4528B is a proprietary line with preferred agronomic characteristics, derived from HA89.

The pedigree and backcross method of selection was used for the development of KSM7551R. It is a bulk of BC2F7 plants tracing back to a single BC2F6 plant. Selection was based on uniform plant type, self compatibility, seed size, seed color, and resistance to imidazolinone herbicide.

2. Hybrids utilizing KSM7551R are adapted to major sunflower growing regions of North America and Europe; the hybrids will be primarily for human consumption.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, long
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	rust
Head (neck) Attitude:	vertical
Seed Shape:	lovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

None expected.

4. KSM7551R is resistant to imidazolinone herbicide.

5. Breeders seed will be maintained by Nuseed Americas in nursery rows under bags, or by open pollination in isolated fields. Up to two generations beyond breeders seed will be allowed for production of foundation seed. Isolation and other requirements will be in accordance with the seed certification regulations of the state where it is produced.

6. 2019, do not publish certified production acreage.

7. No plan for PVP at this time. Do not provide information to the PVP database.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 13, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

KSM7552R

1. KSM7552R is an imidazolinone resistant, linoleic, confectionary restorer line developed by the pedigree and backcross method of selection from the cross K13SM54R*4/KLN4525B. K13SM54R is a proprietary line, previously described and approved. KLN4525B is a proprietary line with preferred agronomic characteristics, derived from HA89.

The pedigree and backcross method of selection was used for the development of KSM7552R. It is a bulk of BC3F7 plants tracing back to a single BC3F6 plant. Selection was based on uniform plant type, self compatibility, seed size, seed color, and resistance to imidazolinone herbicide.

2. Hybrids utilizing KSM7552R are adapted to major sunflower growing regions of North America and Europe; the hybrids will be primarily for human consumption.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type	present, overall
Distal Leaf Shape	broad triangular
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, long
Disk Flower Color	orange
Pollen Color:	orange
Head Shape:	weakly convex
Seed Outer Pericarp Color	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin	absent,
Pappi Color:	rust
Head (neck) Attitude	vertical
Seed Shape:	lovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin	absent,

State expected variants or other varietal information not described above (if none, state "none").

None expected.

4. KSM7552R is resistant to imidazolinone herbicide.

5. Breeders seed will be maintained by Nuseed Americas in nursery rows under bags, or by open pollination in isolated fields. Up to two generations beyond breeders seed will be allowed for production of foundation seed. Isolation and other requirements will be in accordance with the seed certification regulations of the state where it is produced.

6. 2019, do not publish certified production acreage.

7. There is no plan for PVP application at this time. Do not provide information to the PVP database.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 13, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

7PDCH57R

7PDCH57R is a linoleic oil type, imidazolinone resistant, restorer line developed by Pioneer Hi-Bred International that derives from the backcross D0250LM//PH5016R*3/HR37950746. D0250LM, PH5016R and HR37950746 are Pioneer proprietary lines. HR37950746 is the donor for CLHA +. Selections were made for imidazolinone resistance, oil content and recurrent parent trait.

The pedigree method was used in the development of 7PDCH57R. It is a bulk of F4 seed tracing back to a single F3 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PDCH57R have been tested in and are adapted to the growing regions of Central, Eastern, and Western Europe and Northern Plains of the U.S..

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	short
Branching Type:	present, overall
Distal Leaf Shape:	lanceolate to narrow triangular
Leaf Attitude:	low
Leaf Color:	light green
Ray Flowers:	dense, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	white
Head Shape:	flat
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: strongly expressed center: strongly expressed color: grey
Leaf Serration:	fine
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	rust
Head (neck) Attitude:	vertical
Seed Shape:	lovoid elongated
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

None

This variety is resistant to imidazolinone herbicide.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PDVA40R

7PDVA40R is a tribenuron-methyl resistant, linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross T1074LM//T0959LM/PH5033R. All T1074LM, T0959LM & PH5033R are Pioneer proprietary lines. PH5033R is a tribenuron-methyl resistant line used as the donor for herbicide resistance. Selections were made for tribenuron-methyl resistance, earlier flowering, shorter plant height, oil and fatty acid content and yield, as assessed in hybrid combination. The pedigree method was used in the development of 7PDVA40R It is a bulk of F7 seed tracing back to a single F6 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PDVA40R have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	present, predominantly apical
Distal Leaf Shape:	broad triangular to rounded
Leaf Serration:	medium
Leaf Attitude:	high
Leaf Blistering:	medium
Leaf Color:	dark green
Ray Flower Color:	orange yellow
Ray Flowers:	medium density, narrow ovate
Stigma Anthocyanin:	absent,
flat, medium length	Pappi Color: green
Disk Flower Color:	orange
Head (neck) Attitude:	turned down with straight stem
Pollen Color:	yellow
Seed Shape:	ovoid elongated
Head Shape:	weakly convex
Seed Thickness:	medium
Seed Outer Pericarp Color:	black
Hypocotyl Anthocyanin:	absent,
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:

State expected variants or other varietal information not described above (if none, state "none").

None

This variety is resistant to tribenuron-methyl herbicide

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PEDN67R

1. 7PEDN67R is a linoleic type, imidazolinone resistant, restorer line developed by Pioneer Hi-Bred International that derives from the cross U12FSCLLM/7PSHU66R. Both U12FSCLLM & 7PSHU66R are Pioneer proprietary lines. U12FSCLLM derives from the cross U09MYHM/BTIMIR//U06VBHM/3/B0642LM/4/SANAY. SANAY is a commercial sold hybrid from Syngenta. U09MYHM, U06VBHM & B0642LM are all Pioneer proprietary lines. BTIMIR is the CLHA + inbred licensed for use from BASF. Selections were made for imidazolinone resistance, oil content, shorter plant stature, earlier flowering and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PEDN67R. It is a bulk of F7 seed tracing back to a single F6 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing 7PEDN67R have been tested and are adapted to the growing regions of Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular to rounded
Leaf Serration:	coarse
Leaf Attitude:	medium
Leaf Blistering:	medium
Leaf Color:	medium green
Ray Flower Color:	medium yellow
Ray Flowers:	sparse, narrow ovate
Stigma Anthocyanin:	absent,
flat, medium length	Pappi Color: green
Disk Flower Color:	yellow
Head (neck) Attitude:	half-turned down with curved stem
Pollen Color:	yellow
Seed Shape:	ovoid wide
Head Shape:	flat
Seed Thickness:	medium
Seed Outer Pericarp Color:	black
Hypocotyl Anthocyanin:	absent,
Stripe Appearance:	marginal: strongly expressed center: weakly expressed color: grey

State expected variants or other varietal information not described above (if none, state "none").

None

4. This variety is resistant to imidazolinone herbicide.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

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Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PGLA98B

7PGLA98B is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross U0954LG/U1161LG. Both U0954LG and U1161LG are all Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant height, oil content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PGLA98B. It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single heads.

Hybrids utilizing 7PGLA98B have been tested and are adapted to the growing regions of Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	tall
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to rounded
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	yellow
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: strongly expressed center: weakly expressed color: grey
Leaf Serration:	coarse
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

None

4 7PGLA98B claims no resistance to the common sunflower diseases and insect pests.

5 Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6 Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7 Application for protection under the Plant Variety Protection Act will not be made.

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Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PNAN94R

1. 7PNAN94R is a linoleic oil type,imidazolinone resistant, restorer line developed by Pioneer Hi-Bred International that derives from the cross X0017LM/U11TAIMLM//U12FSCLLM. All X0017LM, U11TAIMLM & U12FSCLLM are Pioneer proprietary lines. U12FSCLLM derives from the cross U09MYHM/BTIMIR//U06VBHM/3/B0642LM/4/SANAY. SANAY is a commercial hybrid from Syngenta. U09MYHM, U06VBHM & B0642LM are all Pioneer proprietary lines. BTIMIR is the CLHA + inbred licensed for use from BASF. Selections were made for imidazolinone resistance, oil content, shorter plant stature, stay green and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PNAN94R. It is a bulk of F6 seed tracing back to a single F5 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing 7PNAN94R have been tested and are adapted to the growing regions of Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	high
Leaf Color:	dark green
Ray Flowers:	sparse, fusiform
	flat, long
Disk Flower Color:	yellow
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: strongly expressed color: grey
Leaf Serration:	coarse
Leaf Blistering:	medium
Ray Flower Color:	orange yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	vertical
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

None

4. This variety is resistant to imidazolinone herbicide.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PNHZ36R

7PNHZ36R is an oleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the backcross T0866LM*5/PH5102R. Both T0866LM & PH5102R are Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant stature, stay green, oil content, high oleic content and yield, as assessed in hybrid combination. The pedigree method was used in the development of 7PNHZ36R It is a bulk of BC4F5 seed tracing back to a single BC4F4 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PNHZ36R have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	short
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular to acuminate
Leaf Attitude:	medium
Leaf Color:	dark green
Ray Flowers:	dense, fusiform
	flat, short
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color:	dark brown
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	orange yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above (if none, state "none").

None

7PNHZ36R claims no resistance to the common sunflower diseases and insect pests

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PQMQ97R

7PQMQ97R is an high oleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross PH5016R/T0978HM. Both PH5016R & T0978HM are Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant stature, stay green, oil content, high oleic content and yield, as assessed in hybrid combination. The pedigree method was used in the development of 7PQMQ97R. It is a bulk of F7 seed tracing back to a single F6 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PQMQ97R have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	short
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular to rounded
Leaf Serration:	fine
Leaf Attitude:	low
Leaf Blistering:	weak
Leaf Color:	dark green
Ray Flower Color:	medium yellow
Ray Flowers:	dense, fusiform
Stigma Anthocyanin:	absent,
	flat, medium length
Pappi Color:	green
Disk Flower Color:	orange
Head (neck) Attitude:	vertical
Pollen Color:	yellow
Seed Shape:	lovoid elongated
Head Shape:	flat
Seed Thickness:	thin
Seed Outer Pericarp Color:	grey
Hypocotyl Anthocyanin:	present, weak
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:

State expected variants or other varietal information not described above (if none, state "none").

None

7PQMQ97R claims no resistance to the common sunflower diseases and insect pests.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PRUA71R

7PRUA71R is a tribenuron-methyl resistant, linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross X0017LM// T0866LM*5/ PH5020R . All X0017LM, T0866LM & PH5020R are Pioneer proprietary lines. PH5020R is a tribenuron-methyl resistant line used as the donor for herbicide resistance. Selections were made for tribenuron-methyl resistance, earlier flowering, shorter plant height, oil and fatty acid content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PRUA71R. It is a bulk of F5 seed tracing back to a single F4 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PRUA71R have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	high
Leaf Color:	dark green
Ray Flowers:	dense, fusiform
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	dark brown
Stripe Appearance:	marginal: strongly expressed center: strongly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	absent or very weak
Ray Flower Color:	orange yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

The expression and intensity of the marginal and lateral grey stripes.

This variety is resistant to tribenuron-methyl herbicide.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PSHU66R

1. 7PSHU66R is a tribenuron-methyl resistant, linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the backcross U06TNLM*5/B0642LM. Both U06TNLM & B0642LM are Pioneer proprietary lines. B0642LM is a tribenuron-methyl resistant line used as the donor for herbicide resistance. Selections were made for tribenuron-methyl resistance and recurrent parent traits.

The backcross and pedigree methods were used in the development of 7PSHU66R It is a bulk of BC4F6 seed tracing back to a single BC4F5 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing 7PSHU66R have been tested and are adapted to the growing regions of Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	present, predominantly apical
Distal Leaf Shape:	broad triangular
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, fusiform
	longitudinal recurved, long
Disk Flower Color:	yellow
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	orange yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	lovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above (if none, state "none").

None

4. This variety is resistant to tribenuron-methyl herbicide.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PSZJ42R

7PSZJ42R is an high oleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the backcross T0455LM*5/PH5102R. Both T0455LM & PH5102R are Pioneer proprietary lines. PH5102R is the donor of oleic oil trait. Selections were made for high oleic oil type and recurrent parent traits.
 The pedigree method was used in the development of 7PSZJ42R. It is a bulk of BC4F4 seed tracing back to a single BC4F3 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PSZJ42R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	medium
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular
Leaf Attitude:	high
Leaf Color:	light green
Ray Flowers:	medium density, narrow ovate
	flat, long
Disk Flower Color:	yellow
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:
Leaf Serration:	fine
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

None

7PSZJ42R claims no resistance to the common sunflower diseases and insect pests.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PTWP69B

1. 7PTWP69B is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross PH1015B/T0916LG. PH1015B and T0916LG are Pioneer proprietary lines. Selections were made for shorter plant stature, earlier flowering, oil content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PTWP69B. It is a bulk of F8 seed tracing back to a single F7 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single head.

2. Hybrids utilizing 7PTWP69B have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to rounded
Leaf Serration:	medium
Leaf Attitude:	medium
Leaf Blistering:	weak
Leaf Color:	medium green
Ray Flower Color:	orange yellow
Ray Flowers:	medium density, broad ovate
Stigma Anthocyanin:	absent,
undulated, medium length	Pappi Color: green
Disk Flower Color:	orange
Head (neck) Attitude:	half-turned down with straight stem
Pollen Color:	yellow
Seed Shape:	ovoid wide
Head Shape:	weakly convex
Seed Thickness:	medium
Seed Outer Pericarp Color:	black
Hypocotyl Anthocyanin:	absent,
Stripe Appearance:	marginal: strongly expressed center: none or weakly expressed color: grey

State expected variants or other varietal information not described above (if none, state "none").

None

4. 7PTWP69B claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

7PUGQ32R

1. 7PUGQ32R is a tribenuron-methyl resistant, linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the backcross T0866LM*5/PH5020R. Both T0866LM & PH5020R are Pioneer proprietary lines. PH5020R is a tribenuron-methyl resistant line used as the donor for herbicide resistance. Selections were made for tribenuron-methyl resistance and recurrent parent traits.

The pedigree method was used in the development of 7PUGQ32R It is a bulk of BC4F6 seed tracing back to a single BC4F5 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing 7PUGQ32R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	short
Branching Type:	present, overall
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	high
Leaf Color:	dark green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	strongly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:
Leaf Serration:	fine
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	lovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, strong

State expected variants or other varietal information not described above (if none, state "none").

4. none

5. This variety is resistant to tribenuron-methyl herbicide.

6. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

7. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PUHD10B

7PUHD10B is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the backcross PH1015B*2/HR38248973. PH1015B and HR38248973 are Pioneer proprietary lines. HR38248973 is the trait donor for imidazolinone resistance. Selections were made for imidazolinone resistance and recurrent parent traits.

The backcross and pedigree methods were used in the development of 7PUHD10B. It is a bulk of BC1F6 seed tracing back to a single BC1F5 selection. The sterile analog derives from the CMS PET1 cytoplasm following 3 generations of backcrossing. It is homozygous dominant for single heads.

Hybrids utilizing 7PUHD10B have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	tall
Branching Type:	absent,
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	high
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly concave
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: strongly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	absent or very weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	lovoid wide
Seed Thickness:	thick
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

none

This variety is resistant to imidazolinone herbicide.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PUKC97B

7PUKC97B is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross. PH1015B/T0916LG. PH1015B and T0916LG are all Pioneer proprietary lines. PH1015B is the donor of tribenuron-methyl resistance. Selections were made for earlier flowering, tribenuron-methyl resistance, shorter plant height, oil & fatty acid content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PUKC97B It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single heads.

Hybrids utilizing 7PUKC97B have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	short
Branching Type:	absent,
Distal Leaf Shape:	broad triangular
Leaf Attitude:	medium
Leaf Color:	light green
Ray Flowers:	dense, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: strongly expressed center: weakly expressed color: grey
Leaf Serration:	coarse
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above (if none, state "none").

None

4 This variety is resistant to tribenuron-methyl herbicide.

5 Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6 Certified seed is first expected to be available in 2019. please do not publish certified seed production acreage.

7 Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PVDC41B

7PVDC41B is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross PH1015B/T0916LG. PH1015B and T0916LG are all Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant height, oil & fatty acid content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PVDC41B It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single heads.

Hybrids utilizing 7PVDC41B have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to rounded
Leaf Serration:	fine
Leaf Attitude:	high
Leaf Blistering:	weak
Leaf Color:	medium green
Ray Flower Color:	medium yellow
Ray Flowers:	dense, fusiform
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Disk Flower Color:	orange
Seed Shape:	ovoid wide
Pollen Color:	yellow
Seed Thickness:	medium
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Hypocotyl Anthocyanin:	present, weak
Stripe Appearance:	marginal: strongly expressed center: strongly expressed color: grey

State expected variants or other varietal information not described above (if none, state "none").

none

7PVDC41B claims no resistance to the common sunflower diseases and insect pests.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: May 16, 2019

Sunflower

7PVPS81R

7PVPS81R is an linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross T1170LM/T1068LM. Both T1170LM & T1068LM are Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant stature, oil content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PVPS81R. It is a bulk of F8 seed tracing back to a single F7 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PVPS81R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	short
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular to acuminate
Leaf Serration:	fine
Leaf Attitude:	low
Leaf Blistering:	absent or very weak
Leaf Color:	dark green
Ray Flower Color:	medium yellow
Ray Flowers:	dense, fusiform
Stigma Anthocyanin:	absent,
	flat, short
Pappi Color:	green
Disk Flower Color:	orange
Head (neck) Attitude:	half-turned down with straight stem
Pollen Color:	yellow
Seed Shape:	ovoid elongated
Head Shape:	flat
Seed Thickness:	thick
Seed Outer Pericarp Color:	light brown
Hypocotyl Anthocyanin:	present, weak
Stripe Appearance:	marginal: strongly expressed center: weakly expressed color: white

State expected variants or other varietal information not described above (if none, state "none").

None

7PVPS81R claims no resistance to the common sunflower diseases and insect pests.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PWLH62R

7PWLH62R is an linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the backcross H0560LM*4//PH5000R/HR44086067. All H0560LM, PH5000R & HR44086067 are Pioneer proprietary lines. HR44086067 is the donor of CLHA+ trait. Selections were made for imidazolinone resistance, and recurrent parent traits. The pedigree method was used in the development of 7PWLH62R. It is a bulk of BC3F5 seed tracing back to a single BC3F4 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing 7PWLH62R have been tested and are adapted to the growing regions of Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	short
Branching Type:	present, overall
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	sparse, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color:	medium brown
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:
Leaf Serration:	coarse
Leaf Blistering:	absent or very weak
Ray Flower Color:	orange yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

none

This variety is resistant to imidazolinone herbicide.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

7PYRH24B

7PYRH24B is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross PH1015B/T0916LG. PH1015B and T0916LG are all Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant height, oil & fatty acid content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PYRH24B. It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single heads.

Hybrids utilizing 7PYRH24B have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	tall
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to acuminate
Leaf Serration:	medium
Leaf Attitude:	high
Leaf Blistering:	absent or very weak
Leaf Color:	medium green
Ray Flower Color:	medium yellow
Ray Flowers:	medium density, fusiform
Stigma Anthocyanin:	absent,
	longitudinal recurved, long
Pappi Color:	green
Disk Flower Color:	orange
Head (neck) Attitude:	turned down with straight stem
Pollen Color:	yellow
Seed Shape:	rounded
Head Shape:	flat
Seed Thickness:	medium
Seed Outer Pericarp Color:	black
Hypocotyl Anthocyanin:	present, weak
Stripe Appearance:	marginal: strongly expressed center: strongly expressed color: grey

State expected variants or other varietal information not described above (if none, state "none").

None

7PYRH24B claims no resistance to the common sunflower diseases and insect pests.

Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

Certified seed is first expected to be available in 2019. please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

CN9811B

1. CN9811B is a linoleic oil type maintainer line developed by Agrigenetics Inc. D/B/A Mycogen Seeds that derives from the backcross H879B*2/E52HM55B6. H879B and E52HM55B6 are Agrigenetics Inc. D/B/A Mycogen Seeds. Selections were made for recurrent parent traits.

The pedigree method was used in the development of CN9811B It is a bulk of BC1F4 seed tracing back to a single BC1F3 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing CN9811B have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	narrow triangular
Leaf Serration:	coarse
Leaf Attitude:	medium
Leaf Blistering:	medium
Leaf Color:	dark green
Ray Flower Color:	medium yellow
Ray Flowers:	medium density, fusiform
Stigma Anthocyanin:	absent,
undulated, medium length	Pappi Color: green
Disk Flower Color:	orange
Head (neck) Attitude:	turned down with straight stem
Pollen Color:	yellow
Seed Shape:	lovoid elongated
Head Shape:	flat
Seed Thickness:	medium
Seed Outer Pericarp Color:	black
Hypocotyl Anthocyanin:	absent,
Stripe Appearance:	marginal: strongly expressed center: strongly expressed color: brown

State expected variants or other varietal information not described above (if none, state "none").

None

4. **CN9811B** claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

CP8861R

1. CP8861R is linoleic oil type imidazolinone resistant restorer line developed by Agrigenetics Inc. D/B/A Mycogen Seeds that derives from the backcross CN8861R*3//ON6725R/BTI-1R. CN8861R & ON6725R are Agrigenetics Inc. D/B/A Mycogen Seeds lines. BTI -1R is the CLHA + inbred licensed for use from BASF. Selections were made for imidazolinone resistance and recurrent parent traits.

The pedigree and backcross methods were used in the development of CP8861R It is a bulk of BC2F4 seed tracing back to a single BC2F3 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing CP8861R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very late
Height (relatively short, medium or tall?):	medium
Branching Type:	present, only apical
Distal Leaf Shape:	broad triangular
Leaf Attitude:	high
Leaf Color:	medium green
Ray Flowers:	dense, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	medium brown
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	isolated or very fine
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above (if none, state "none").

None

4. This variety is resistant to imidazolinone herbicide.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

D1457SULM

1. D1457SULM is a tribenuron-methyl resistant linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross PH5000R/PH6000R. Both PH5000R & PH6000R are Pioneer proprietary lines. Selections were made for tribenuron-methyl resistance, earlier flowering, shorter plant height, oil and fatty acid content and yield, as assessed in hybrid combination
 The pedigree method was used in the development of D1457SULM. It is a bulk of F8 seed tracing back to a single F7 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing D1457SULM have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	short
Branching Type:	present, overall
Distal Leaf Shape:	narrow triangular to broad triangular
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, fusiform
	flat, long
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:
Leaf Serration:	medium
Leaf Blistering:	absent or very weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	vertical
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

None

4. D1457SULM claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY
 Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

OID4120R

1. OID4120R is linoleic oil type imidazolinone resistant restorer line developed by Agrigenetics Inc. D/B/A Mycogen Seeds that derives from the cross CN2922R*5/45195R/3/OND163R/OIN163R//CN2922R*5/45195R. CN2922R, OND163R and 45195R are Agrigenetics Inc. D/B/A Mycogen Seeds lines. Selections were made for imidazolinone resistance, oil content, shorter plant stature, earlier flowering and yield, as assessed in hybrid combination.

The pedigree method was used in the development of OID4120R It is a bulk of F4 seed tracing back to a single F3 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing OID4120R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	very early
Height (relatively short, medium or tall?):	very short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	lanceolate
Leaf Attitude:	low
Leaf Color:	light green
Ray Flowers:	dense, narrow ovate
	longitudinal recurved, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: none or weakly expressed color: brown
Leaf Serration:	isolated or very fine
Leaf Blistering:	absent or very weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	vertical
Seed Shape:	ovoid elongated
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

None

4. This variety is resistant to imidazolinone herbicide.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

OID5499R

1. OID5499R is high oleic oil type, imidazolinone resistant, restorer line developed by Agrigenetics Inc. D/B/A Mycogen Seeds that derives from the backcross OI3499R*2/OPED6722R. OI3499R and OPED6722R are Agrigenetics Inc. D/B/A Mycogen Seeds lines. OPED6722R is line used as the donor CLHA+ resistant. Selections were made for imidazolinone resistance and recurrent parent traits.

The pedigree and backcross methods were used in the development of OID5499R It is a bulk of BC2F4 seed tracing back to a single BC2F3 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing OID5499R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	early
Height (relatively short, medium or tall?):	very short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	high
Leaf Color:	medium green
Ray Flowers:	medium density, fusiform
	longitudinal recurved, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	medium brown
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: grey
Leaf Serration:	fine
Leaf Blistering:	absent or very weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, medium
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

None

4. This variety is resistant to imidazolinone herbicide.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26, 2019

Sunflower

OK5401R

OK5401R is high oleic oil type restorer line developed by Agrigenetics Inc. D/B/A Mycogen Seeds that derives from the cross PR64A71/HO516501R. PR64A71 & HO516501R are Agrigenetics Inc. D/B/A Mycogen Seeds lines. Selections were made for earlier flowering, shorter plant stature, oil content and yield, as assessed in hybrid combination.

The pedigree method was used in the development of OK5401R. It is a bulk of F7 seed tracing back to a single F6 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing OK5401R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	very tall
Branching Type:	present, predominantly apical
Distal Leaf Shape:	broad triangular
Leaf Attitude:	high
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	undulated, short
Disk Flower Color:	yellow
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, weak
Pappi Color:	rust
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	ovoid elongated
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above (if none, state "none").

none

4 This variety claims no resistance to the common sunflower diseases and insect pests.

5 Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6 Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7 Application for protection under the Plant Variety Protection Act will not be made.

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Date this application was submitted: Mar 11, 2019 Date recommended by the VRB: Jul 26 2019

Sunflower

OKD4447R

OKD4447R is high oleic oil type restorer line developed by Agrigenetics Inc. D/B/A Mycogen Seeds that derives from the backcross OND947R*3/DEB-2. OND947R is Agrigenetics Inc. D/B/A Mycogen Seeds line. DEB-2 is a line developed in collaboration with the Consejo Superior de Investigacion Cientificas Cordoba (CSIC). Selections were made for improve yield and recurrent parent traits.

The pedigree method was used in the development of OKD4447R. It is a bulk of BC2F4 seed tracing back to a single BC2F3 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

Hybrids utilizing OKD4447R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	low
Leaf Color:	dark green
Ray Flowers:	medium density, narrow ovate
	longitudinal recurved, medium length
Disk Flower Color:	yellow
Pollen Color:	yellow
Head Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	strong
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	purple
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	rounded
Seed Thickness:	thick
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above (if none, state "none").

none

4 This variety claims no resistance to the common sunflower diseases and insect pests.

5 Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6 Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7 Application for protection under the Plant Variety Protection Act will not be made.

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Sunflower

ON1701B

1. ON1701B is high oleic oil type maintainer line developed by Agrigenetics Inc. D/B/A Mycogen Seed that derives from the backcross CN1701B*5/234B-DAS. CN1701B and 234B-DAS are Agrigenetics Inc. D/B/A Mycogen Seed lines. 234B-DAS is high oleic oil type line used as the donor oleic oil type. Selections were made for fatty acid content and recurrent parent traits. The pedigree method was used in the development of ON1701B It is a bulk of BC4F4 seed tracing back to a single BC4F3 selection.

2. Hybrids utilizing ON1701B have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	high
Leaf Color:	light green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Head Shape:	flat
Seed Outer Pericarp Color:	medium brown
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: black
Leaf Serration:	medium
Leaf Blistering:	absent or very weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	lovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, strong

State expected variants or other varietal information not described above (if none, state "none").

None

4. **ON1701B** claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2019. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

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