

## Technical questionnaire

**maize**

**CPVO/TQ-002/3**

*Mandatory fields or sections are marked with an asterisk (\*)*

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**01 . Botanical taxon: name of the genus, species or sub-species to which the variety belongs:**

*Zea mays* L.

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**02 . Application code:**

For office use only

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**03 . Breeder's reference**

Breeder's Ref.

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**04 . Information on the breeding scheme and propagation of the variety \***

**04 . 01 . Breeding scheme \***

Breeder's Ref.

**04 . 01.01 . Type of material \***

*(this question could be confidential)*

- inbred line
- single-cross hybrid
- three-way cross hybrid
- double-cross hybrid
- open-pollinated variety
- other

Please specify the genetic origin:

Indicate formula

**04 . 01.01.01 . Variety use \***

- agricultural
- sweet
- pop

**04 . 01.02 . Variety resulting from: \***

**04 . 01.02.01 . Crossing**

*(this question could be confidential)*

- controlled cross (indicate parent varieties)
- partially known cross (indicate known parent variety(ies))
- unknown cross

**04 . 01.02.02 . Mutation**

*(this question could be confidential)*

Please state parent variety

**04 . 01.02.03 . Discovery and development \***

*(this question could be confidential)*

Please state when the variety was discovered \*

Please state where the variety was discovered \*

Please state how the variety has been developed \*

**04 . 01.02.04 . Other information on the origin of the variety**

*(this question could be confidential)*

Please specify

**04 . 02 . Method of propagation of the variety \***

**04 . 02.01 . In the case of hybrid varieties the production scheme should be provided. This should provide details of all the parent lines required for propagating the hybrid e.g.**



Breeder's Ref.

**04 . 02.01.01 . Single hybrid**

*(this question could be confidential)*

Denomination or breeder's reference of female parental line of single hybrid

Denomination or breeder's reference of male parental line of single hybrid

(  )x(  )

**04 . 02.01.02 . Three-Way hybrid**

female parent of single hybrid - A

male parent of single hybrid - B

(  )x(  )

single hybrid used as parent - AB

male or female parent of three-way hybrid - C

(  )x(  )

Three-way hybrid - (AB)C

(  )x(  )

**04 . 02.01.03 . Double Hybrid**

female parent of single hybrid - A

male parent of single hybrid - B

(  )x(  )

female parent of single hybrid - C

male parent of single hybrid - D

(  )x(  )

single hybrid A x B used as female parent

single hybrid C x D used as female parent

(  )x(  )

Double hybrid (AB) (CD)

(  )x(  )

**04 . 02.01.04 . The production scheme should identify in particular:**

*(this question could be confidential)*

any male sterile female parent lines

maintenance system of male sterile female parent lines

**04 . 02.02 . Open-pollinated variety**

*(this question could be confidential)*

Please provide details

**04 . 02.03 . Other information on the method of propagating the variety**

*(this question could be confidential)*

Please specify

**04 . 03 . Notification concerning a technical examination carried out with a DUS system of breeders participation (e.g. French maize testing system) \***

In case of hybrids, please give the requested information for each component too (you may use the confidential part of the technical questionnaire to indicate this information):

- No, the variety has not been notified for being tested under such system
- Yes, the variety has been notified for being tested under this system



Breeder's Ref.

**04 . 03.01 . Breeders participation system**

If you notified the Examination Office on your intention to use the breeders participation system (for the hybrid and/or its components), please attach a copy of the notification(s)



Breeder's Ref.

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**05 . Characteristics of the variety to be indicated \***

(the number in brackets refers to the corresponding characteristic in the CPVO Technical Protocol; please mark the state of expression which best corresponds)



Breeder's Ref.

**05 . 01 . Tassel: time of anthesis (6) (G) \***

- |   |  |
|---|--|
| <input type="radio"/> 1 - very early          | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 2 - very early to early | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 3 - early               | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 4 - early to medium     | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 5 - medium              | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 6 - medium to late      | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 7 - late                | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 8 - late to very late   | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |
| <input type="radio"/> 9 - very late           | Please indicate comparable variety(ies) of your choice |
|   | <input type="text"/>                                   |

**05 . 02 . Tassel: anthocyanin coloration at base of glume (7) (G) \***

- |   |                    |
|---|--------------------|
| <input type="radio"/> 1 - absent or very weak   | W117, Royalty (SC) |
| <input type="radio"/> 2 - very weak to weak     |                    |
| <input type="radio"/> 3 - weak                  | F66, Boston (SC)   |
| <input type="radio"/> 4 - weak to medium        |                    |
| <input type="radio"/> 5 - medium                | F107               |
| <input type="radio"/> 6 - medium to strong      |                    |
| <input type="radio"/> 7 - strong                | EP1                |
| <input type="radio"/> 8 - strong to very strong |                    |
| <input type="radio"/> 9 - very strong           |                    |



**05 . 02.00 . Tassel: anthocyanin coloration at base of glume (7) (G) \***

If **Segregation** for this characteristic in the case of three-way hybrids or double-cross hybrids, please indicate several notes.

- 1 - absent or very weak
- 2 - very weak to weak
- 3 - weak
- 4 - weak to medium
- 5 - medium
- 6 - medium to strong
- 7 - strong
- 8 - strong to very strong
- 9 - very strong

**05 . 02.01 . Tassel: anthocyanin coloration of glumes excluding base (8)**

- 1 - absent or very weak F259, Empire (SC)
- 2 - very weak to weak
- 3 - weak F2, Royalty (SC)
- 4 - weak to medium
- 5 - medium WD36, Centurion (SC)
- 6 - medium to strong
- 7 - strong W79A
- 8 - strong to very strong
- 9 - very strong

**05 . 02.01.00 . Tassel: anthocyanin coloration of glumes excluding base (8)**

If **Segregation** for this characteristic in the case of three-way hybrids or double-cross hybrids, please indicate several notes.

- 1 - absent or very weak
- 2 - very weak to weak
- 3 - weak
- 4 - weak to medium
- 5 - medium
- 6 - medium to strong
- 7 - strong
- 8 - strong to very strong
- 9 - very strong



**05 . 02.02 . Tassel: anthocyanin coloration of anthers (9)**

- 1 - absent or very weak A654, Empire (SC)
- 2 - very weak to weak
- 3 - weak F2, Royalty (SC)
- 4 - weak to medium
- 5 - medium W182E, Centurion (SC)
- 6 - medium to strong
- 7 - strong
- 8 - strong to very strong
- 9 - very strong

**05 . 02.02.00 . Tassel: anthocyanin coloration of anthers (9)**

*If Segregation for this characteristic in the case of three-way hybrids or double-cross hybrids, please indicate several notes.*

- 1 - absent or very weak
- 2 - very weak to weak
- 3 - weak
- 4 - weak to medium
- 5 - medium
- 6 - medium to strong
- 7 - strong
- 8 - strong to very strong
- 9 - very strong

**05 . 03 . Ear: anthocyanin coloration of silks (14) (G) \***

- 1 - absent or very weak F7, F195, Bonus (SC)
- 2 - very weak to weak
- 3 - weak F257, El Toro (SC)
- 4 - weak to medium
- 5 - medium F244, Gyöngymazsola (SC)
- 6 - medium to strong
- 7 - strong W401
- 8 - strong to very strong
- 9 - very strong



**05 . 03.00 . Ear: anthocyanin coloration of silks (14) (G) \***

If **Segregation** for this characteristic in the case of three-way hybrids or double-cross hybrids, please indicate several notes.

- 1 - absent or very weak
- 2 - very weak to weak
- 3 - weak
- 4 - weak to medium
- 5 - medium
- 6 - medium to strong
- 7 - strong
- 8 - strong to very strong
- 9 - very strong



Breeder's Ref.

**05 . 04.01 . Only inbred lines and varieties with ear type of grain: sweet or pop: Plant: length (22.1) (G) \***

- |   |  |
|---|--|
| <input type="radio"/> 1 - very short          | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 2 - very short to short | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 3 - short               | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 4 - short to medium     | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 5 - medium              | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 6 - medium to long      | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 7 - long                | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 8 - long to very long   | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 9 - very long           | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |



Breeder's Ref.

**05 . 04.02 . Only hybrids and open-pollinated varieties, excluding varieties with ear type of grain: sweet or pop:**  
**Plant: length (22.2) (G) \***

- |   |  |
|---|--|
| <input type="radio"/> 1 - very short          | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 2 - very short to short | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 3 - short               | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 4 - short to medium     | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 5 - medium              | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 6 - medium to long      | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 7 - long                | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 8 - long to very long   | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |
| <input type="radio"/> 9 - very long           | Please indicate length in cm and/or comparable example varieties |
|   | <input type="text"/>   |



Breeder's Ref.

**05 . 04.03 . Only sweet or pop: Ear:length (26) \***

- 1 - very short  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 2 - very short to short  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 3 - short  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 4 - short to medium  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 5 - medium  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 6 - medium to long  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 7 - long  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 8 - long to very long  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 9 - very long  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.



**05 . 04.04 . Only sweet or pop: Ear: diameter (in middle) (27) \***

- 1 - very small Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 2 - very small to small Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 3 - small Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 4 - small to medium Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 5 - medium Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 6 - medium to large Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 7 - large Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 8 - large to very large Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 9 - very large Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.

**05 . 04.05 . Only sweet or pop: Ear: shape (28) \***

- 1 - conical F16, Wombat (SC)
- 2 - conico-cylindrical F816, Centurion (SC)
- 3 - cylindrical F66, GH2547 (SC)



Breeder's Ref.

**05 . 04.06 . Only sweet or pop: Ear: number of rows of grain (29) \***

- 1 - very few  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 2 - very few to few  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 3 - few  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 4 - few to medium  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 5 - medium  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 6 - medium to many  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 7 - many  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 8 - many to very many  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.
- 9 - very many  
Please fill in a well known variety and the raw data requested for both varieties, candidate and well known variety.

**05 . 04.07 . Only sweet or waxy: Ear: number of colours of grains (30) \***

- 1 - one
- 2 - two



**05 . 05 . Ear: type of grain (34) (G) \***

- |  |               |
|--|---------------|
| <input type="radio"/> 1 - flint        | F2            |
| <input type="radio"/> 2 - flint-like   | F252          |
| <input type="radio"/> 3 - intermediate | F107          |
| <input type="radio"/> 4 - dent-like    | A654          |
| <input type="radio"/> 5 - dent         | W182E         |
| <input type="radio"/> 6 - sweet        | Jubilee (SC)  |
| <input type="radio"/> 7 - pop          | Iowa Pop (PC) |
| <input type="radio"/> 8 - waxy         |               |
| <input type="radio"/> 9 - flour        |               |

**05 . 05.00 . Ear: type of grain (34) (G) \***

If **Segregation** for this characteristic in the case of three-way hybrids or double-cross hybrids, please indicate several notes.

- |   |
|---|
| <input type="checkbox"/> 1 - flint        |
| <input type="checkbox"/> 2 - flint-like   |
| <input type="checkbox"/> 3 - intermediate |
| <input type="checkbox"/> 4 - dent-like    |
| <input type="checkbox"/> 5 - dent         |
| <input type="checkbox"/> 6 - sweet        |
| <input type="checkbox"/> 7 - pop          |
| <input type="checkbox"/> 8 - waxy         |
| <input type="checkbox"/> 9 - flour        |

**05 . 05.01 . Only sweet: Ear: shrinkage of top of grain (35) \***

- |  |                 |
|--|-----------------|
| <input type="radio"/> 1 - weak             | Zarja (SC)      |
| <input type="radio"/> 2 - weak to medium   |                 |
| <input type="radio"/> 3 - medium           | Merkur (SC)     |
| <input type="radio"/> 4 - medium to strong |                 |
| <input type="radio"/> 5 - strong           | Dessert 73 (SC) |



**05 . 05.02 . Ear: colour of top of grain (36) \***

- |   |   |
|---|---|
| <input type="radio"/> 1 - white           | A188, Purple white (SC), Snowbelle (SC) |
| <input type="radio"/> 2 - yellowish white |   |
| <input type="radio"/> 3 - yellow          | F259                                    |
| <input type="radio"/> 4 - yellow orange   | F244, Gyöngymazsola (SC)                |
| <input type="radio"/> 5 - orange          | F257, GH2547 (SC)                       |
| <input type="radio"/> 6 - red orange      | Dynasty (SC)                            |
| <input type="radio"/> 7 - red             |   |
| <input type="radio"/> 8 - purple          |   |
| <input type="radio"/> 9 - brownish        | Zenith (SC)                             |
| <input type="radio"/> 10 - blue black     | Miheukchal                              |

**05 . 05.02.00 . Ear: colour of top of grain (36) \***

- |  |
|--|
| <input type="checkbox"/> 1 - white           |
| <input type="checkbox"/> 2 - yellowish white |
| <input type="checkbox"/> 3 - yellow          |
| <input type="checkbox"/> 4 - yellow orange   |
| <input type="checkbox"/> 5 - orange          |
| <input type="checkbox"/> 6 - red orange      |
| <input type="checkbox"/> 7 - red             |
| <input type="checkbox"/> 8 - purple          |
| <input type="checkbox"/> 9 - brownish        |
| <input type="checkbox"/> 10 - blue black     |

**05 . 06 . Excluding varieties with ear type of grain: sweet: Ear: colour of dorsal side of grain (37) \***

If **Segregation** for this characteristic in the case of three-way hybrids or double-cross hybrids, please indicate several notes.

- |  |
|--|
| <input type="checkbox"/> 1 - white           |
| <input type="checkbox"/> 2 - yellowish white |
| <input type="checkbox"/> 3 - yellow          |
| <input type="checkbox"/> 4 - yellow orange   |
| <input type="checkbox"/> 5 - orange          |
| <input type="checkbox"/> 6 - red orange      |
| <input type="checkbox"/> 7 - red             |
| <input type="checkbox"/> 8 - purple          |
| <input type="checkbox"/> 9 - brownish        |
| <input type="checkbox"/> 10 - blue black     |



**05 . 07 . Ear: anthocyanin coloration of glumes of cob (39) (G) \***

- 1 - absent or very weak F2, F257
- 2 - very weak to weak
- 3 - weak F252
- 4 - weak to medium
- 5 - medium W117
- 6 - medium to strong
- 7 - strong A632
- 8 - strong to very strong
- 9 - very strong

**05 . 07.00 . Ear: anthocyanin coloration of glumes of cob (39) (G) \***

If **Segregation** for this characteristic in the case of three-way hybrids or double-cross hybrids, please indicate several notes.

- 1 - absent or very weak
- 2 - very weak to weak
- 3 - weak
- 4 - weak to medium
- 5 - medium
- 6 - medium to strong
- 7 - strong
- 8 - strong to very strong
- 9 - very strong

**06 . Similar varieties and differences from these varieties**

Please note that information on similar varieties may help to identify comparable varieties and can avoid an additional period of testing.

**06 . 01 . Are there any similar varieties known? \***

- Yes
- No

**06 . 02 . Similar varieties and differences from these varieties: \***

Denomination of similar variety	Characteristic in which the similar variety is different	State of expression of similar variety	State of expression of candidate variety



**07 . Additional information which may help to distinguish the variety \***

**07 . 01 . In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety? \***

- Yes, specify
- No

**07 . 02 . Are there any special conditions for growing the variety or conducting the examination? \***

- Yes, specify
- No

**07 . 03 . Other information \***

**07 . 03.01 . Sweet corn varieties only: type**

- normal sweet varieties (su1)
- sugary enhanced varieties (se)
- super sweet varieties (sh2)
- other type

Please specify

**07 . 03.02 . FAO maturity class \***

Please indicate the average FAO maturity class \*

**07 . 03.03 . Other information \***

- Yes, specify
- No

**07 . 04 . Resistance to pests and diseases \***

- Yes, specify
- No

**08 . GMO-information \***

**08 . 01 . GMO-information required \***

The variety represents a Genetically Modified Organism within the meaning of Article 2(2) of Council Directive EC/2001/18 of 12/03/2001.

- Yes
- No

If yes, please attach in point 08.02 a copy of the written attestation of the responsible authorities stating that a technical examination of the variety under Articles 55 and 56 of the Basic Regulation does not pose risks to the environment according to the norms of the above-mentioned Directive.

**08 . 02 . In case of GMO, joint attestation of the responsible authorities stating that a technical examination of the variety under Articles 55 and 56 of the Basic Regulation does not pose risks to the environment according to the norms of the above-mentioned Directive.**



**09 . Information on plant material to be examined**

The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc. Consequently the plant material to be examined should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

**09 . 01 . Micro-organisms (e.g. virus, bacteria, phytoplasma) \*** Yes, specify No**09 . 02 . Chemical treatment (e.g. growth retardant or pesticide) \*** Yes, specify No**09 . 03 . Tissue culture \*** Yes, specify No**09 . 04 . Other factors \*** Yes, specify No**10 . Possible place of the technical examination**

In case the CPVO needs to arrange a technical examination for your candidate variety, there might be more than one examination office entrusted by the CPVO to carry it out. In this case, the Office will decide on the place of the technical examination but you might wish to express a preference in respect of an examination office. The list of entrusted examination offices for that species can be found in the S2/S3 in which you will also find further information about submission of plant material and deadlines for numerous species:CPVO ([plantvarieties.eu](http://plantvarieties.eu))

**10 . 01 . Country where the examination could take place**

Country



Breeder's Ref.

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**DECLARATIONS \***

I/we hereby declare that to the best of my/our knowledge the information given in this form is complete and correct.

Place

Date

Name

Signature

