

# Summary Notification Information Format

## A. General information

### A1. Details of notification

**Notification Number**

B/BE/22/V1

**Member State**

Belgium

**Date of Acknowledgement**

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**Title of the Project**

Scientific field evaluation of maize with increased resistance against DNA damage causing environmental stress

**Proposed period of release:**

15/04/2022 to 31/10/2024

### A2. Notifier

**Name of the Institute**

VIB

**A3. Is the same GMPt release planned elsewhere in the Community?**

No.

**A4. Has the same GMPt been notified elsewhere by the same notifier?**

No

## B. Information on the genetically modified plant

### B1. Identity of the recipient or parental plant

- |                            |                                 |
|----------------------------|---------------------------------|
| a) family:                 | <i>Poaceae</i>                  |
| b) genus:                  | <i>Zea</i> , section <i>Zea</i> |
| c) species:                | <i>Zea mays</i>                 |
| d) subspecies:             | <i>mays</i>                     |
| e) cultivar/breeding line: | inbred line B104                |
| f) common name:            | maize                           |

### B2. Description of the traits and characteristics which have been introduced or modified, including marker genes and previous modifications

The genetically modified maize plants have a significantly better growth under environmental stress conditions that lead to DNA damage.

**B3. Type of genetic modification**

Targeted editing of a gene using CRISPR-Cas resulting in the addition of one base pair.

**B4. In case of insertion of genetic material, give the source and intended function of each constituent fragment of the region to be inserted**

There is no donor DNA inserted into the genetic material, but the genome editing using CRISPR-Cas has resulted in the addition of one base pair in the target site.

**B6. Brief description of the method used for the genetic modification**

The plants have been modified using CRISPR-Cas. The CRISPR-Cas machinery was introduced into the maize using *Agrobacterium tumefaciens* mediated genetic modification. This resulted in the stable integration of T-DNA containing the sequences coding for the guide RNA and CAS protein into the genome of the maize. Plants with the desired edit were selected and the T-DNA was segregated out in the next generations leading to the selection of plants that only contained the desired edit but no longer contained any foreign genetic material.

**B7. If the recipient or parental plant is a forest tree species, describe ways and extent of dissemination and specific factors affecting dissemination**

Not applicable.

**C. Experimental Release****C1. Purpose of the release**

The purpose of the release is to measure the performance of the modified maize plants under normal field conditions and learn whether also in these conditions they would have an improved growth.

**C2. Geographical location of the site**

The field trial will take place on grounds belonging to the ILVO research institute in the municipality of Wetteren.

**C3. Size of the site (m<sup>2</sup>)**

The trial plot, including non-modified controls, non-modified fertilizer lines and non-modified buffer rows is 310 m<sup>2</sup>.

**C4. Relevant data regarding previous releases carried out with the same GM-plant, if any, specifically related to the potential environmental and human health impacts from the release**

The GM lines have not been field tested before.

**D. Summary of the potential environmental impact from the release of the GMPTs**

The environmental impact from the release is expected to be zero. The modified characteristics are not expected to lead to greater weediness or the ability of the maize to establish in non-agricultural habitats. The modified characteristics are also not expected to change the interaction of the maize with herbivores or other non-target organisms and also not to change the toxicity and allergenicity of the maize.

There will also be no spread of the modified maize to the environment. The male flowers (tassels) of the maize will be removed before they can start shedding pollen, meaning that shedding of modified pollen to the environment is impossible. Also the spread of seeds to the environment is prevented. The modified seeds are well retained in the cobs and all cobs will be carefully hand harvested to prevent any spread of seeds.

## **E. Brief description of any measures taken for the management of risks**

The risk of spread of the modified properties to the environment is mitigated by removing the tassel, thus preventing the spread of modified pollen to non-modified maize plants in the surroundings. The formed modified seeds are, as already stated above, well retained in the cobs and these cobs will be very carefully hand harvested, thus preventing any spread of seeds to the environment. Experience with such field trials in the past 8 years has shown that the way the cobs are harvested effectively prevents any volunteers being formed. The field trial plot is surrounded by a 1.80 m high wire fence to prevent accidental trespassing and accidental removal or spread of GM material.

## **F. Summary of foreseen field trial studies focused to gain new data on environmental and human health impact from the release**

There are no specific studies foreseen to gain new data on the environmental and human health impact from the release other than the study of the phenotype and growth characteristics of the maize.

## **G. Final report**

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## **H. European Commission administrative information**

To be filled in by the Commission

## **I. Consent given by the Competent Authority:**

To be filled in by the Commission.