LIVING MODIFIED ORGANISM (LMO)

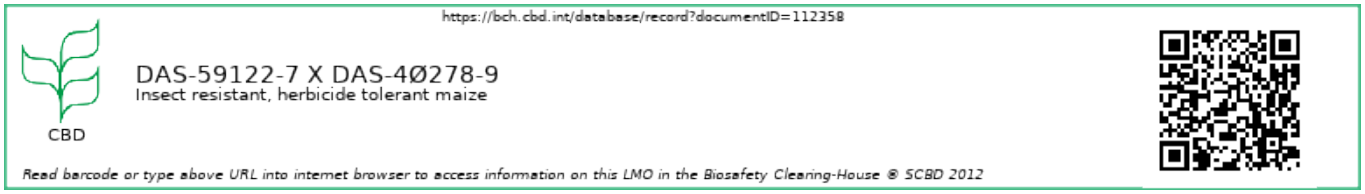
BCH-LMO-SCBD-112358-1

? Decisions on the LMO ? Risk Assessments

LAST UPDATED: 18 AUG 2017

Living Modified Organism identity

The image below identifies the LMO through its unique identifier, trade name and a link to this page of the BCH. Click on it to download a larger image on your computer. For help on how to use it go to the LMO quick-links page.



Name

Insect resistant, herbicide tolerant maize | EN

Transformation event

DAS59122 x MON89034

Unique identifier

DAS-59122-7 x DAS-4Ø278-9

Developer(s)

- ORGANIZATION: SYNGENTA SEEDS GMBH | BCH-CON-SCBD-101875-3

ORGANIZATION

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Description

The stacked maize line DAS-59122-7 x DAS-4Ø278-9 was obtained through the traditional cross breading of each of the parental organisms to produce a maize that expresses each of | EN

Cry1A.105, Cry2Ab2, PAT, Cry34Ab1 and Cry35Ab1 genes. The expression of these genes are expected to confer resistance to Lepidoptera and Coleoptera, and tolerant to glufosinate herbicide.

Recipient Organism or Parental Organisms

The term “Recipient organism” refers to an organism (either already modified or non-modified) that was subjected to genetic modification, whereas “Parental organisms” refers to those that were involved in cross breeding or cell fusion.

BCH-ORGA-SCBD-246-6 ORGANISM | ZEA MAYS (MAIZE, CORN, MAIZE)

Crops

BCH-LMO-SCBD-43773-18 LIVING MODIFIED ORGANISM | MON-89Ø34-3 - YIELDGARD™ VT PRO™

Resistance to diseases and pests - Insects - Lepidoptera (butterflies and moths)

BCH-LMO-SCBD-15165-13 LIVING MODIFIED ORGANISM | DAS-59122-7 - HERCULEX™ RW ROOTWORM PROTECTION MAIZE

Pioneer Hi-Bred International Inc. | Resistance to diseases and pests (Insects, Coleoptera (beetles)), Resistance to herbicides (Glufosinate)

Characteristics of the modification process

Vector

PHP17662 and PV-ZMIR245 EN

Techniques used for the modification

Cross breeding

Genetic elements construct

P-e35S-CaMV 0.300 kb	L-cab-WHEAT 0.060 kb	I-1_act1-ORYSA 0.480 kb	CS-cry1A_105-SYNTH 3.530 kb	T-hsp17_3-WHEAT 0.210 kb
P-34S-FMV 0.560 kb	I-hsp70-MAIZE 0.800 kb	TP-rbcS-MAIZE 0.400 kb	CS-Cry2Ab2-BACTU 1.910 kb	T-nos-RHIRD 0.250 kb
P-ubi1-MAIZE 1.990 kb	CS-cry34Ab1-BACTU 0.370 kb	T-pinII-SOLTU 0.320 kb		
P-pox-WHEAT 1.300 kb	CS-cry35Ab1-BACTU 1.150 kb	T-pinII-SOLTU 0.320 kb		
P-35S-CaMV 0.550 kb	CS-pat-STRVR 0.550 kb	T-35S-CaMV 0.200 kb		

Introduced or modified genetic element(s)

Some of these genetic elements may be present as fragments or truncated forms. Please see notes below, where applicable.

BCH-GENE-SCBD-100366-6 CAMV ENHANCED 35S PROMOTER

Promoter

BCH-GENE-SCBD-100354-6 5' UNTRANSLATED LEADER FROM CHLOROPHYLL A/B-BINDING PROTEIN | (WHEAT)

Leader sequence

BCH-GENE-SCBD-100355-6 RICE ACTIN 1, INTRON | (RICE)

Intron

BCH-GENE-SCBD-43771-9 CRY1A.105 | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU

Protein coding sequence | Resistance to diseases and pests (Insects, Lepidoptera (butterflies and moths))

BCH-GENE-SCBD-100356-6 HEAT SHOCK PROTEIN 17.3 TERMINATOR | (WHEAT)

Terminator

BCH-GENE-SCBD-101507-5 FMV 34S PROMOTER

Promoter

BCH-GENE-SCBD-100359-7 HSP70 INTRON | (MAIZE, CORN)

Intron

BCH-GENE-SCBD-100360-4 TRANSIT PEPTIDE AND FIRST INTRON OF RUBISCO SSU | (MAIZE, CORN)

Transit signal

BCH-GENE-SCBD-14988-7 CRY2AB2 | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU

Protein coding sequence | Resistance to diseases and pests (Insects, Lepidoptera (butterflies and moths))

BCH-GENE-SCBD-100269-8 NOPALINE SYNTHASE GENE TERMINATOR

Terminator

BCH-GENE-SCBD-100362-7 UBIQUITIN GENE PROMOTER | (MAIZE, CORN)

Promoter

BCH-GENE-SCBD-14994-9 CRY34AB1 | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU

Protein coding sequence | Resistance to diseases and pests (Insects, Coleoptera (beetles))

BCH-GENE-SCBD-100367-4 PROTEINASE INHIBITOR II GENE TERMINATOR | (POTATO)

Terminator

BCH-GENE-SCBD-100368-6 PEROXIDASE GENE PROMOTER | (WHEAT)

Promoter

BCH-GENE-SCBD-14995-8 CRY35AB1 | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU

Protein coding sequence | Resistance to diseases and pests (Insects, Coleoptera (beetles))

BCH-GENE-SCBD-100287-7 CAMV 35S PROMOTER

Promoter

BCH-GENE-SCBD-15002-4 PHOSPHINOTHRICIN N-ACETYLTRANSFERASE GENE

Protein coding sequence | Resistance to herbicides (Glufosinate)

BCH-GENE-SCBD-100290-6 CAMV 35S TERMINATOR

Terminator

Notes regarding the genetic elements present in this LMO

DNA insert from MON89034 vector PV-ZMIR245
MON89034 contributed the Cry1A.105 and Cry2A(b) coding sequences and their associated regulatory elements. These confer resistance against lepidopteran pests.

DNA insert from 59122 vector PHP17662
The cry34Ab1 and cry35Ab1 genes, isolated from the common soil bacterium Bacillus

EN

thuringiensis (Bt) strain PS149B1, produce the insect control proteins (delta-endotoxins) Cry34Ab1 and Cry35Ab1. The pat gene was isolated from the soil bacterium Streptomyces viridochromogenes and confers tolerance to herbicides containing glufosinate ammonium.

For additional information on this LMO, please refer to the records of the parental LMOs.

LMO characteristics

Modified traits

Resistance to diseases and pests
Insects
Lepidoptera (butterflies and moths)
Resistance to herbicides
Glufosinate

Common use(s) of the LMO

Food
Feed

Detection method(s)

External link(s)

? DAS-59122-7 - EU Reference Laboratory for GM Food and Feed (EURL-GMFF) *(English)*

? DAS-4Ø278-9 - EU Reference Laboratory for GM Food and Feed (EURL-GMFF) *(English)*

Additional Information

Other relevant website addresses and/or attached documents

? DAS-59122-7 x DAS-4Ø278-9 - ISAAA *(English)*

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Further Information

Questions about the Cartagena Protocol on Biosafety or the operation of the Biosafety Clearing-House may be directed to the Secretariat of the Convention on Biological Diversity.

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