

## Document 4-1

## Results of the study by the crop subcommittee

Name: Resistance to Lepidoptera and Coleoptera and herbicides glufosinate and glyphosate

Five Resistant maize (modified cry1F , pat , cry34Ab1 , cry35Ab1 , cry1Ab , modified cp4 epsps , modified Strange Cry3Aa2 , Zea Mays Subsp. Mays (L.) Iltis) (1507 × 59122 × MON810 × NK603 × MIR604, OECD UI: DAS-Ø15Ø7-1 × DAS-59122-7 × MON-ØØ81Ø-6 × MON-ØØ6Ø3-6 × SYN-IR6Ø4-5) ( Bt Cry1F maize line 1507, Bt Cry34 / 35Ab1 Event DAS-59122-7, MON810, NK603 and MIR604

Of the progeny line separated from the corn

Excluding those approved by the Species Use Regulations. )including. )

Ten Contents of first-class use, etc .: Use, cultivation, processing, storage, transportation and waste for food or feed  
Abandonment and acts accompanying them

Applicant: DuPont

The Crop Subcommittee is based on the biodiversity impact assessment document submitted by the applicant and the first Lepidoptera and Coleoptera pest resistance and herbicide glufosinate and

15 Glyphosate-resistant maize ( Bt Cry1F maize line 1507, Bt Cry34 / 35Ab1 Event  
Has transgene combination to DAS-59122-7, MON810, NK603 and MIR604 respectively

Of the progeny line separated from the corn

Excluding those received. )including. ) (Hereinafter referred to as “the stack maize”)

The contents of the assessment by the applicant regarding the impact of biodiversity when conducting the above were examined. mainly

20 The confirmed items are as follows.

About result of 1 biodiversity impact assessment

This stack line maize

The modified cry1F gene encoding the modified Cry1F protein and the PAT protein (phosphinothrin  
Lepidoptera that have been introduced with a pat gene that encodes ( synacetyltransferase )

twenty five Resistant and herbicide glufosinate resistant maize ( Bt Cry1F maize line 1507),  
Cry34Ab1 / cry35Ab1 gene and PAT protein encoding Cry34Ab1 / Cry35Ab1 protein  
Introduced the pat gene that encodes the quality (phosphinothricin acetyltransferase)  
Coleoptera pest-resistant and herbicide glufosinate-resistant maize ( Bt  
Cry34 / 35Ab1 Event DAS-59122-7),

30 Lepidoptera pest resistant corn introduced with cry1Ab gene encoding Cry1Ab protein  
Rokoshi (MON810),

Coated modified CP4 EPSPS protein (5-enolpyruvylshikimate-3-phosphate synthase)

Herbicide glyphosate-tolerant maize introduced with modified cp4 epsps gene (NK603)

- 35 (5) Modified cry3Aa2 gene encoding the modified Cry3Aa2 protein and PMI protein (phosphoma Coleoptera pest resistance introduced with pmi gene encoding ( nose isomerase)

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Corn (MIR604),

It was created by the cross breeding method. For these five lines, biodiversity

When the same type 1 use as this stack maize is used in the impact assessment study group

It has been determined that there is no risk of biodiversity impacts.

Five The specificity of the Bt protein involves the structure of the protein, which is different in the pest midgut cells.

This is thought to bind to different receptors. In addition to this, it has been approved so far

In other stack lines, there was no report that Bt protein showed a synergistic effect, and insecticidal activity

This stack line corn has only the traits that the parent line has.

Each Bt protein expressed in Koshi (modified Cry1F protein, Cry34Ab1 / Cry35Ab1 protein, Cry1Ab

Ten Proteins and modified Cry3Aa2 proteins) interact to change the specificity of these Bt proteins

It was thought that there was nothing to do. In addition, PAT protein, modified CP4 EPSPS protein and PMI

Protein substrates and actions are different, the metabolic pathways involved are independent of each other, and the Bt protein is fermented.

Since there are no reports of active activity, these stack maize

Even if proteins are expressed, they interact to change the metabolic system of the host, resulting in unexpected metabolites

15 It was thought that there was nothing.

In addition, from the bioassay test, Lepidoptera and Coleoptera of this stack corn

Resistance and resistance to the herbicide glyphosate are similar to the parent strains.

An additive effect, which was considered to be dependent on the expressed protein, was observed in the citrate resistance.

From these facts, these proteins derived from each parental line are

20 It is unlikely to have a functional interaction in the plant body of the plant.

It was thought that there was no change in the character to be evaluated other than having it.

#### (1) Competitive advantage

Maize, the taxonomic species to which the host belongs, is used for a long time in Japan.

However, it has not been reported that it grows naturally in Japan's natural environment.

twenty five This stack maize parent line ( Bt Cry1F maize line 1507, Bt Cry34 / 35Ab1 Event DAS-59122-7, MON810, NK603 and MIR604)

Various traits were investigated. As a result, in some properties, non-recombinant corn

Statistically significant differences were observed, but these increased the competitive advantage.

I thought it was not different.

30 The modified Cry1F protein and Cry1Ab protein expressed in this stack maize

Resistance to Lepidoptera pests is Cry34Ab1 / Cry35Ab1 protein and modified Cry3Aa2 protein

Resistant to Coleoptera pests depending on quality, but Lepidoptera and Coleoptera

The insect damage caused by insects makes it difficult for corn to grow in the natural environment in Japan.

It is not a factor. Therefore, the addition of these traits causes native corn, which is a cultivated crop.

35 It is difficult to think of increasing competitive advantage.

In addition, the PAT protein and the modified CP4 EPSPS protein expressed in this stack maize line.

White matter provides resistance to the herbicides glufosinate and glyphosate,  
In natural environments where herbicides are unlikely to be sprayed, herbicide resistance traits are  
It is unlikely to increase the competitive advantage of traditional maize.

40 In addition, mannose can be used as a carbon source in this stack maize.  
Although the quality is given, this stack line maize is  
North is unlikely to be the main carbon source, and having this trait

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It is unlikely that superiority will increase.

Based on the above, this stack maize is not affected by wild animals and plants.  
A statement that there is no risk of biodiversity impact resulting from competitive advantage  
We concluded that the conclusion of the contractor was valid.

Five (2) Productivity of hazardous substances

Maize, the taxonomic species to which the host belongs, is used for a long time in Japan.  
However, the productivity of harmful substances affecting wild animals and plants is not known.

Ten Modified Cry1F protein, Cry34Ab1 / Cry35Ab1 protein expressed in this stack maize  
White matter, Cry1Ab protein, modified Cry3Aa2 protein, PAT protein, modified CP4 EPSPS protein and  
PMI protein has been confirmed not to have homology with known allergens. Also PAT  
Protein produces N -acetyl- L - glufosinate when sprayed with the herbicide glufosinate  
However, N -acetyl- L -glufosinate was confirmed to be less toxic to animals than glufosinate.  
ing.

15 Hazardous substances in the parent line of this stack maize (secreted from the roots and other plants and  
Affects soil microorganisms, affects other plants after the plant body has withered and died  
Product), the results of conducting a plow test, a succeeding crop test, a soil microflora test,  
The difference that suggests that the productivity of hazardous substances is increasing in any test  
I was not able to admit. Therefore, unintended harmful substances in this stack maize  
Is unlikely to be produced.

20 The modified Cry1F protein and Cry1Ab protein expressed in this stack maize  
Cry34Ab1 / Cry35Ab1 protein and modified Cry3Aa2 protein  
More insecticidal activity against coleopteran pests is added, which may be affected.  
Lepidoptera and Coleoptera insects were identified as wild animals and plants. Identified butterfly eyes  
This stack line maize is directly fed as a situation in which Coleoptera insects are affected  
twenty five Or the pollen scattered from this stack maize is ingested with the dietary plants.

It was thought. However, Lepidoptera and Coleoptera insects are  
At the population level, it is unlikely that they are locally found in the area around Rokoshi.  
The possibility of being affected was considered very low.

30 Based on the above, this stack maize has a biodiversity effect due to the productivity of harmful substances.  
The applicant's conclusion that there was no risk of reverberation was deemed appropriate.

(3) Crossability

Are there any wild plants that can be crossed with corn in the natural environment in Japan?  
Therefore, there is no identification of wild animals and plants that may be affected, and biodiversity resulting from crossability

We concluded that the applicant's conclusion that there was no risk of impact was reasonable.

35 Conclusion of 2 crop subcommittee

From the above, when this stack maize is used in accordance with the first class use regulations,  
The conclusion of the biodiversity impact assessment report that there is no risk of impact on biodiversity in the country is  
Judged to be appropriate.