

Document 3-1

Results of the study by the crop subcommittee

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Name: Lepidoptera and Coleoptera pest resistance and glufosinate herbicide and glyphosate resistant

Sorghum (modified cry1Ab, cry34Ab1, cry35Ab1, modified cry3Aa2, cry1F, pat, mEPSPS, Zea mays subsp.mays (L.) Iltis) (Bt11 × Bt Cry34 / 35Ab1

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Event DAS-59122-7 × MIR604 × Bt Cry1F maize line 1507 × GA21, OECD UI: SYN-BTØ11-1 × DAS-59122-7 × SYN-IR6Ø4-5 × DAS-Ø15Ø7-1 × MON-ØØØ21-9) (Bt11, Bt Cry34 / 35Ab1 Event DAS-59122-7, MIR604, Bt Cry1F maize line 1507 and GA21 each having a combination of transgenes,

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Including progeny lines separated from Koshi (excluding those already approved by the Class I Usage Regulations) Well.)

Contents of first-class use: Use, cultivation, processing, storage, transportation for food or feed

Disposal and related actions

Applicant: Syngenta Japan Co., Ltd.

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The Agricultural Products Subcommittee is based on the biodiversity impact assessment submitted by the applicant and

Regarding biodiversity impact when using this stack system in accordance with the 1st class regulations

The contents of the evaluation by the applicant were examined. Mainly confirmed items are as follows.

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1 Results of biodiversity impact assessment

In this stack maize, the modified cry1Ab gene and the pat gene are introduced.

Corn (Bt11), cry34Ab1 residue, resistant to Lepidoptera and herbicide glufosinate

Resistance to and elimination of Coleoptera pests introduced with genes, cry35Ab1 gene and pat gene

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Herb glufosinate-tolerant maize (Event DAS-59122-7), modified cry3Aa2 gene and

Coleoptera pest resistant maize (MIR604) with pmi gene, cry1F

Lepidoptera pest resistance and glufosinate resistant tow with introduced pup and pat genes

Resistance to glyphosate herbicide with sorghum (Cry1F line 1507) and mEPSPS gene

It was produced by cross breeding using sex corn (GA21). These parents

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As for the system, the first type of the same system as this stack system was examined at the Biodiversity Impact Assessment Study Group.

It is judged that there is no risk of biodiversity effects when used.

The specificity of the Bt protein expressed in this stack line is related to the structure of the protein.

Were thought to bind to different receptors in the midgut cells. In addition to this, so far

Is there a report that Bt protein showed a synergistic effect in the stack line approved by

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In this stack line, each Bt protein (modified Cry1Ab protein, Cry34Ab1 protein,

Cry35Ab1 protein, modified Cry3Aa2 protein and Cry1F protein) interact with each other.
Et al. Did not seem to alter the specificity of the Bt protein. PAT protein,
Different substrates and actions of mEPSPS and PMI proteins, and metabolic pathways involved
Are independent of each other and there is no report that Bt protein has enzymatic activity.

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Even if these proteins are expressed in the stack line, they interact to change the metabolic system of the host.
It was thought that no unexpected metabolites were produced.

In addition, the Lepidoptera pest resistance and the herbicide glyphosate resistance of this stack line are
It is similar to that of the parent strains of *C. elegans*, and resistance to Coleoptera and insecticide glufosinate
Five An additive effect that was considered to depend on the current protein mass was observed. From this, each parent
Possibility of protein-derived protein showing functional interaction in plants of this stack line
It is considered that there is no change in traits to be evaluated other than having the traits of the parental line.
It was.

Ten (1) Competitive advantage

Maize, the taxonomic species to which the host belongs, has been used for a long time in Japan.
However, it has not been reported to grow naturally in Japan's natural environment.

Bt11, Event DAS-59122-7, MIR604, Cry1F line which is the parent system of this stack system
As a result of investigating various traits related to competitive advantage of 1507 and GA21,
15 A significant difference was observed between the control and non-recombinant maize. However, these
The difference was not considered to increase competitive advantage.
This stack line is given resistance to Lepidoptera and Coleoptera pests.
The damage caused by Lepidoptera and Coleoptera is caused by corn in Japan's natural environment.
Since this is not the main factor that makes it difficult to grow, the addition of this trait is under natural conditions.
20 It's hard to think of it as a self-growth and a competitive advantage. This stack system
The series is given resistance to the herbicides glufosinate and glyphosate.
In the natural environment of Japan where it is difficult to apply herbicide glufosinate and glyphosate,
It is unlikely that the competitive advantage will increase due to the nature. In addition, this stack system
Although it has been given the character that mannose can be used as a carbon source,
twenty five Below, it is unlikely that this stack line will use mannose as the main carbon source.
It is unlikely that the quality will increase competitive advantage.

From the above, this stack system and Bt11, Event DAS-59122-7, MIR604, Cry1F line
1507 and GA21 each having a combination of transgenes,
Progeny lines isolated from Kosi are not identified as wild animals and plants that may be affected,
30 By the applicant that there is no risk of biodiversity impact resulting from competitive advantage
The conclusion was judged to be valid.

(2) Productivity of hazardous substances

Maize, the taxonomic species to which the host belongs, has been used for a long time in Japan.
35 Has a proven track record, but the productivity of harmful substances affecting wild animals and plants is known.
Absent.

Modified Cry1Ab protein, Cry34Ab1 protein, Cry35Ab1 protein expressed in this stack line
White matter, modified Cry3Aa2 protein and Cry1F protein, PAT protein, mEPSPS protein and PMI

It has been confirmed that the protein has no homology with known allergens.

40 In addition, the modified Cry1Ab protein, Cry34Ab1 protein expressed in this stack line, Cry35Ab1 protein, modified Cry3Aa2 protein and Cry1F protein, PAT protein, mEPSPS protein White matter and PMI proteins interact to change the host's metabolic system, causing unexpected metabolites. Because these proteins are not expected to occur, It was thought that no harmful substances were produced. It is actually the parent system of this stack system

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Hazardous substances in Bt11, Event DAS-59122-7, MIR604, Cry1F line 1507 and GA21

Quality (things secreted from the roots that affect other plants and soil microorganisms;
(Products that affect other plants after death)

As a result of the test and soil microflora test, the harmful substances of these parental lines were found in both tests.

Five There were no differences suggesting increased quality productivity.

Modified Cry1Ab protein, Cry34Ab1 protein, Cry35Ab1 protein expressed in this stack line
Quality, modified Cry3Aa2 protein and Cry1F protein against Lepidoptera and Coleoptera insects
Since it exhibits insecticidal activity, Lepidoptera and Coptera as wild animals and plants that may be affected.
Euphorbia insects have been identified. Identified Lepidoptera and Coleoptera insects are affected

Ten The situation is that the stack line is eaten directly, or the flowers scattered from the stack line
It was considered to take the flour with the dietary plants. However, Lepidoptera and Kouchi
It is difficult to think that Lepidoptera insects locally inhabit the cultivation field of this stack line.
Therefore, the possibility of being affected at the population level was considered extremely low.

15 From the above, this stack system and Bt11, Event DAS-59122-7, MIR604, Cry1F line 1507 and GA21 each having a combination of transgenes,
Progeny lines isolated from Koshi have biodiversity effects due to the productivity of harmful substances.
The applicant's conclusion that this is not the case was deemed appropriate.

(3) Crossability

20 Are there any wild plants that can be crossed with corn in the natural environment in Japan?
, This stack system and Bt11, Event DAS-59122-7, MIR604, Cry1F line 1507 and GA21 has a transgene combination to each of the GA21

The separated progeny lines are not identified as wild animals and plants that may be affected, and may be affected by crossability.

The applicant's conclusion that there is no risk of causing biodiversity effects
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2 Conclusion of the crop subcommittee

Based on the above, this stack system and Bt11, Event DAS-59122-7, MIR604, Cry1F line 1507 and GA21, each of which has a transgene combination and

30 When a progeny line separated from sorghum is used in accordance with the first class regulations,
The conclusion of the biodiversity impact assessment report that there is no risk of affecting biodiversity
It was judged that.

