

Document 3-1

Results of the study by the crop subcommittee

Name: Lepidoptera and Coleoptera pest resistance and glufosinate herbicide-resistant corn

Kosi (modified cry1Ab , modified cry3Aa2 , pat , Zea mays subsp. Mays (L.) Itis)

(Bt11 × MIR604, OECD UI: SYN-BT011-1 × SYN-IR604-5)

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

Abandonment and acts accompanying them

Applicant: Syngenta Seed Co., Ltd.

The Crop Subcommittee is based on the biodiversity impact assessment document submitted by the applicant and the first Biodiversity impacts when using this stack line maize in accordance with the species use regulations

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

This stack maize is resistant to Lepidoptera and insecticide glufosinate.

Corn (BIR11) and Coleoptera pest resistance maize (MIR604)

These parental lines were individually identified at the Biodiversity Impact Assessment Study Group.

Separately, the effects of biodiversity are generated when the same type 1 use as this stack maize is used.

It is judged that there is no risk of shifting.

1 Interaction related to the intended trait

Modified Cry1Ab encoded by the modified cry1Ab gene (Lepidoptera pest resistance gene) derived from Bt11

The protein is considered to have insecticidal activity against Lepidopterous insects but not enzyme activity.

In addition, the PAT protein encoded by the Bt11-derived pat gene (glufosinate resistance gene)

Sufinotricine acetyltransferase) is an enzyme with high substrate specificity. Meanwhile, MIR604

Modified Cry3Aa2 encoded by the modified cry3Aa2 gene (Coleoptera pest resistance gene)

Protein is considered to have insecticidal activity against Coleoptera but not enzyme activity

The In addition, the modified Cry1Ab protein and the modified Cry3Aa2 protein are

Insecticidal activity against insects or Coleoptera pests, with no overlapping insecticidal spectrum

Therefore, it is unlikely that interactions between these Cry proteins occur. Therefore,

Traits imparted by the modified cry1Ab gene, pat gene, and modified cry3Aa2 gene affect each other

The possibility of effect is considered low.

In addition, the resistance of Lepidoptera and Coleoptera pests of this stack maize

Resistance test against European corn borers and western corn rootworms

By the test, and for glufosinate tolerance, the herbicide application test

It has been confirmed that it has the same level of resistance and tolerance.

Based on the above, this stack line maize has the characteristics of the parent line.

It is considered that there is no change in traits to be evaluated other than

2 Competitive advantage

Maize has a long-term experience in Japan.

There have been no reports of spontaneous growth in the environment.

This stack maize has a modified cry1Ab gene derived from Bt11 and a modified corn derived from MIR604.

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The modified Cry1Ab protein and modified Cry3Aa2 protein encoded by the altered cry3Aa2 gene, respectively

As a result, it is resistant to Lepidoptera and Coleoptera pests and has pat inheritance derived from Bt11

It is glufosinate-resistant due to the PAT protein encoded by the offspring. However, our natural

Under the environment, maize grows in Japan due to the damage caused by Lepidoptera and Coleoptera pests

It is not the main factor that makes it difficult to do, and glufosinate is sprayed

It is considered that glufosinate is not a selective pressure because it is difficult to control.

Therefore, these properties do not increase the competitive advantage.

It is unlikely that traditional maize will have a competitive advantage over the parental line.

Based on the above, it is said that there is no risk of biodiversity impact resulting from competitive advantage.

We concluded that the conclusion of the contractor was valid.

3. Productivity of harmful substances

For corn, which is the species to which the host belongs,

There are no reports of producing harmful substances.

This stack maize is composed of Bt11-derived modified Cry1Ab protein and PAT protein.

It also has the productivity of modified Cry3Aa2 protein derived from MIR604. Modified Cry1Ab protein and modified

The modified Cry3Aa2 protein has an insecticidal action against Lepidoptera and Coleoptera insects, respectively.

Have. However, although PAT protein confers glufosinate tolerance,

It has been confirmed that it is not a hazardous substance. In addition, the modified Cry1Ab protein and the modified Cry3Aa2 protein

There appears to be no interaction between white matter and PAT protein. Therefore, this stack system

Even though corn has both of these proteins, the parental strain has the ability to produce harmful substances.

It is thought that it does not increase more than the combined traits.

Based on the above, an application that there is no risk of biodiversity effects resulting from the productivity of harmful substances

It was judged that the conclusion by the person was valid.

4 Crossability

Since wild plants that can be crossed with corn are not growing in our natural environment,

Wild plants that may be affected are not identified, and biodiversity effects due to crossability

The applicant's conclusion that there is no risk of swaying was judged to be appropriate.

Conclusion of 5 crop subcommittee

Based on the above, when this stack line maize is used in accordance with the first class regulations,

The conclusion of the biodiversity impact assessment report that there is no risk of biodiversity impact is valid

It was judged.

