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Results of the study by the crop subcommittee

Name: Lepidoptera pest resistance and herbicide glufosinate resistant maize (modified cry1Ab, bar, Zea mays subsp. mays (L.) Itis) (Event176, OECD UI: SYN-EV176-9)

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

Disposal and related incidents

Applicant: Syngenta Seed Co., Ltd.

The Crop Subcommittee is concerned with the application based on the biodiversity impact assessment document submitted by the applicant. Biodiversity when using this recombinant maize in the first class in accordance with the first class regulations. The contents of the assessment by the applicant regarding the impact were examined. The main confirmed items are It is as follows.

1 Presence of transferred nucleic acid and stability of expression

This recombinant maize is produced using the particle gun method, The pCIB4431 Modifications derived from cry1Ab Genes (Lepidoptera pest resistance genes) and plastic Sumid pCIB3064 Derived from bar The gene (herbicide glufosinate resistance gene) is recombined. It has been introduced into the corn genome and is transmitted stably in multiple generations. This has been confirmed by Southern blot analysis. Also, multiple copies (about Four copy) It has been suggested that the gene (-) has been transferred. Southern blot analysis and its By genetic analysis, the copies are not easily separated over multiple generations, Estimated to be in contact.

In addition, imported modifications cry1Ab Genes and bar The gene is stably expressed. Observed the resistance of Lepidoptera in multi-generation cultivation tests in the US ELISA Modification by law Cry1Ab Protein and PAT (Phosphinothricin acetyltransferase Ase) Confirmed by protein detection.

2 Competitive advantage

Maize (the species to which the host belongs) Zea mays subsp. mays (L. Itis) Cultivation, etc. has been done for a long time in Japan. It has not been.

In the isolated field test in Japan, this recombinant maize 2 Form and raw system Growth characteristics are being investigated. About the number of grains significant difference between the strain and the control However, no significant differences were observed for other survey traits. Because of this difference It is unlikely that the competitive advantage will increase.

The modified maize has been transferred cry1Ab Lepidoptera due to genes Resistance, but also bar The gene imparts tolerance to the herbicide glufosinate. Only However, in the natural environment, corn damage caused by lepidopterous insects makes corn growth difficult. Because glufosinate is not considered to be a selective factor.

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These properties are unlikely to increase competitive advantage.

Based on the above, wild animals and plants that could be affected were not identified, and competitive advantage The applicant's conclusion that there is no risk of biodiversity effects due to position is reasonable. Judged that there was.

3. Productivity of harmful substances

Maize, the species to which the host belongs, affects wild animals and plants There are no reports of producing such harmful substances.

In isolated field tests in Japan, harmful substances of this recombinant maize (secreted from the roots) Those that affect other plants, those that are secreted from the roots and affect soil microorganisms, The productivity of the plant body that is inside and affects other plants after withering) However, there is no significant difference from the control.

This recombinant maize is modified to have insecticidal activity against Lepidoptera insects Cry1Ab Protein and Confer resistance to glufosinate PAT Produce protein.

Modification Cry1Ab The protein has an insecticidal activity against Lepidoptera insects. Shi Therefore, when this recombinant maize is cultivated, the changes expressed in pollen Cry1Ab Protein The quality may affect lepidopterous insects that inhabit the field. But However, it is affected based on the results of bioassay in which pollen is ingested with the feeding plant. The range is limited, so the flowers scattered from this recombinant maize The possibility of being affected by powder at the population level is considered extremely low. on the other hand, there has been no report that proteins are harmful to wild animals and plants. Yes. Also, PAT Protein has high substrate specificity and does not affect host metabolic system it is conceivable that.

Modification Cry1Ab Protein and PAT Protein is the result of homology search of amino acid sequence, It has been confirmed that there is no sequence that is structurally similar to known allergens.

Based on the above, wild animals and plants that may be affected are not identified, and production of harmful substances The applicant's conclusion that there is no risk of biodiversity effects arising from sex I decided.

4 Crossability

Wild plants that can be crossed with corn are not growing in our natural environment. Therefore, no wild plants that could be affected are identified, and biodiversity caused by crossability We concluded that the applicant's conclusion that there was no risk of sexual effects was appropriate.

Conclusion of 5 crop subcommittee

Based on the above, when this recombinant 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.
I decided.