

## Document 4-1

## Results of the study by the crop subcommittee

Name: Lepidoptera pest resistance and herbicide glufosinate resistant maize (modified cry1Ab, pat, Zea mays subsp. mays (L.) Itis ) ( Bt11, OECD UI: SYN-BT011-1 )

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 electroporation method.

Rasmid pZO1502 Modifications derived from cry1Ab Genes (Lepidoptera pest resistance genes) and pat Gene (herbicide glufosinate resistance gene) is present in the genome of this recombinant maize. Southern blot analysis confirms that one copy of each is transferred.

In addition, imported modifications cry1Ab Genes and pat Newly given to the host by gene. The stable expression of the traits is the butterfly in the multi-year cultivation test in the United States. The observation of resistance to pests and the application of glufosinate herbicide in the process of breeding selection. Each has been confirmed.

## 2 Competitive advantage

Maize (the species to which the host belongs) Zea mays subsp. mays (L. Itis ) Although it has been cultivated for a long time in Japan, it has been reported that it has become autonomous. It has not been.

Investigation of morphology and growth characteristics of this recombinant maize in isolated field tests in Japan. However, differences from non-recombinant maize that affect biodiversity are recognized. It has not been put.

The modified maize has been transferred cry1Ab Lepidoptera due to genes. Resistance, but also pat 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. 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.

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### 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 non-recombinant maize.

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

PAT There has been no report that proteins are harmful to wild animals and plants. The

The PAT Proteins are highly substrate specific and do not affect host metabolic systems

Be

On the other hand, Cry1Ab protein has insecticidal activity against Lepidoptera insects

Therefore, when this recombinant maize is cultivated Modifications expressed in pollen Cry1Ab

Although protein may affect lepidopterous insects that inhabit the field,

The expression of the protein in the pollen is low.

Is it limited to a very narrow range even if it is affected based on

Can be affected at the population level by pollen scattered from this recombinant maize

The nature is considered to be extremely low.

Note that PAT Protein and modification Cry1Ab 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.

