



VKM Report 2022:2

Assessment of genetically modified soybean GMB151, for food and feed uses, import and processing under Regulation (EC) No 1829/2003 (application EFSA-GMO-NL-2018-153)

Scientific Opinion of the Panel on genetically modified organisms of the Norwegian Scientific Committee for Food and Environment

VKM Report 2022:2

Assessment of genetically modified soybean GMB151, for food and feed uses, import and processing under Regulation (EC) No 1829/2003 (application EFSA-GMO-NL-2018-153)

Scientific Opinion of the Panel on genetically modified organisms of the Norwegian Scientific Committee for Food and Environment

14.02.2022

ISBN: 978-82-8259-377-9

ISSN: 2535-4019

Norwegian Scientific Committee for Food and Environment (VKM)

Postboks 222 Skøyen

0213 Oslo

Norway

Phone: +47 21 62 28 00

Email: vkm@vkm.no

vkm.no

Cover photo: Colourbox

Suggested citation: VKM, Johanna Bodin (Chair), Nur Duale, Anne Marthe Jevnaker, Monica Sanden, Ville Erling Sipinen, Tage Thorstensen and Rose Vikse (2022). Assessment of genetically modified soybean GMB151, for food and feed uses, import and processing under Regulation (EC) No 1829/2003 (application EFSA-GMO-NL-2018-153). Scientific Opinion of the Panel on genetically modified organisms (GMO) of the Norwegian Scientific Committee for Food and Environment. VKM Report 2022:2, ISBN: 978-82-8259-377-9, ISSN: 2535-4019. Norwegian Scientific Committee for Food and Environment (VKM), Oslo, Norway.

Assessment of genetically modified soybean GMB151, for food and feed uses, import and processing (application EFSA-GMO-NL-2018-153) under regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed

Authors of the opinion

The authors have contributed to the opinion in a way that fulfils the authorship principles of VKM (VKM, 2019). The principles reflect the collaborative nature of the work, and the authors have contributed as members of the VKM Panel on genetically modified organisms.

Members of the Panel on genetically modified organisms (in alphabetical order before chair of the Panel): Johanna Bodin (chair), Nur Duale, Monica Sanden, Tage Thorstensen and Rose Vikse.

Table of Contents

Summary	5
Sammendrag	6
Background as provided by the Norwegian Food Safety Authority and the Norwegian Environment Agency	7
1 Assessment of genetically modified soybean GMB151 (application EFSA-GMO-NL-2018-153)	8
1.1 Comments during the EFSA scientific consultation-period	8
1.2 Considerations after EFSA's publication of their scientific opinion – part 1.....	11
1.3 Considerations after EFSA's publication of their scientific opinion – part 2.....	12
2 Conclusions	13
3 References	14

Summary

Event GMB151 (application EFSA-GMO-NL-2018-153) is a genetically modified soybean developed by *Agrobacterium tumefaciens* -mediated transformation. Soybean GMB151 express the *hppdPf-4Pa* and *cry14Ab-1.b* genes encoding the HPPD-4 and Cry14Ab-1 proteins. HPPD-4 confers tolerance to 4-hydroxyphenylpyruvate dioxygenase inhibitor herbicides (HPPD). Protein Cry14Ab-1 belongs to the Cry (crystal)-type protein family and confers resistance to soybean-cyst nematodes.

The scientific documentation provided in the application for genetically modified soybean GMB151 is adequate for risk assessment, and in accordance with EFSA guidance on risk assessment of genetically modified plants for use in food or feed (EFSA 2011).

The VKM GMO panel does not consider the introduced modifications in event GMB151 to imply potential specific health or environmental risks in Norway, compared to EU-countries. The EFSA opinion is adequate also for Norwegian considerations (EFSA 2021). Therefore, a full risk assessment of event GMB151 was not performed by the VKM GMO Panel.

Sammendrag

GMB151 (søknad EFSA-GMO-NL-2018-153) er en genmodifisert soya utviklet ved transformasjon av planteceller ved hjelp av *Agrobacterium tumefaciens*. Soya GMB151 uttrykker transgenene *hppdPf-4Pa* og *cry14Ab-1.b*. Transgenene gjør soyaen tolerant mot ugrasmidler med virkestoffet 4-hydroxyphenylpyruvate dioxygenase (HPPD) og er motstandsdyktig mot motstandsdyktig mot planteparasitnematoden *Heterodera glycines*.

Søkers vitenskapelige dokumentasjon for den genmodifiserte soyaen er dekkende for risikovurdering, og i samsvar med EFSA retningslinjer for risikovurdering av genmodifiserte planter til bruk i mat eller fôr (EFSA 2011).

De genetiske endringene i soya GMB151 tilsier ingen økt helse- eller miljørisiko i Norge sammenlignet med EU-land. EFSA's risikovurdering er derfor tilstrekkelig også for norske forhold (EFSA 2021). Ettersom det ikke har blitt identifisert særnorske forhold vedrørende egenskaper ved soya GMB151, har ikke VKMs GMO panel utført en fullstendig risikovurdering av soyaen.

Background as provided by the Norwegian Food Safety Authority and the Norwegian Environment Agency

The Norwegian Food Safety Authority (NFSA) and the Norwegian Environment Agency (NEA) have assigned VKM to perform assessments of genetically modified organisms (GMOs) and derived products thereof, for which there are sought approval of authorisation to the European market under the Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed. VKM is requested to perform assessments for all GMO applications made accessible through the EFSA Document Management System (DMS), where the main focus should be on potential health or environmental risks specific to Norway compared to the EU.

1 Assessment of genetically modified soybean GMB151 (application EFSA-GMO-NL-2018-153)

1.1 Comments during the EFSA scientific consultation-period

When EFSA submits an application for scientific consultation with a three-month commenting deadline, VKM shall initiate the scientific assessment. From the application is submitted for scientific consultation until EFSA has published its Scientific Opinion (6.5 months + the period when 'the clock stops') VKM should:

- Use this period to assess the scientific quality of the documentation presented in the application. Possible lack of essential information and other relevant scientific literature should be addressed. The application must be in compliance with Regulation (EU) No. 503/2013 and adhere to EFSA guidance (EFSA 2010, 2011) for risk assessment of genetically modified plants.
- Provide comments to EFSA within the deadline and inform The Norwegian Food Safety Authority (NFSA) and the Norwegian Environment Agency (NEA) no later than two weeks before the deadline. If no comments are provided to EFSA, VKM notifies the NFSA and NEA for the reasons why no comment was submitted.
- Assess whether there are considerations specific to Norway that need to be addressed. If such considerations are identified VKM should immediately inform the NFSA and NEA.

Stage 1**1. Application**

EFSA-GMO-NL-2018-153
Genetically modified soybean
GMB151

2. Information related to the genetic modification:

Event GMB151 (application EFSA-GMO-NL-2018-153) is a genetically modified soybean developed by *Agrobacterium tumefaciens* -mediated transformation. Soybean GMB151 expresses the *hppdPf-4Pa* and *cry14Ab-1.b* genes encoding the HPPD-4 and Cry14Ab-1 proteins. HPPD-4 confers tolerance to 4-hydroxyphenylpyruvate dioxygenase (HPPD) inhibitor herbicides such as isoxaflutole. Protein Cry14Ab-1 belongs to the Cry (crystal)-type protein family and confers resistance to soybean-cyst nematodes.

Genes**Proteins***hppdPf-4Pa*

HPPD-4

cry14Ab-1.b

Cry14Ab-1

3. Previously assessed by VKM

YES:

NO: X

4. If yes in item 3. – comments from VKM:**5. Date when EFSA declared the application as valid in accordance with Articles 6(1) and 18(1)**

04.03.19

6. Deadline of EFSA's commenting period

08.06.19

7. VKM's assessment of the documentation in the application

Applicants' documentation:

The VKM Panel on genetically modified organisms finds the documentation provided as satisfactory for risk assessment.

Additional literature used by VKM:

No

Documentation in compliance with Regulation (EU) No. 503/2013:

YES: X

NO:

Documentation in accordance with EFSA guidance for risk assessment of genetically modified plants (EFSA 2010, 2011):	YES: X	NO:
8. Comments submitted from VKM during EFSA's public consultation	YES: X	NO:
9. Date of submission from VKM		
10. Comment(s) to EFSA:		
VKM welcomes information on herbicide residue levels and their relevant metabolites in applications for herbicide tolerant GM-plants. Data on Isoxaflutole residue levels, including relevant metabolites, in plant material from field studies would support the assessment of food, feed, and environmental safety.		
11. If NO in item 8. – comments from VKM:		
12. Need for national consideration(s)	YES:	NO: X
13. If YES in item 12. – comments from VKM:		
14. If NO in item 12. – comments from VKM:		
The VKM GMO Panel does not consider the introduced modifications in event GMB151 to imply potential specific health or environmental risks in Norway, compared to EU-countries.		
15. VKMs conclusion regarding the application:		
The scientific documentation provided in the application is adequate for risk assessment, and in accordance with the EFSA guidance on risk assessment of genetically modified plants for use in food or feed.		

1.2 Considerations after EFSA's publication of their scientific opinion – part 1

When EFSA publishes their scientific opinion together with the comments from the member states, VKM shall within a month inform the NFSA and EEA on the following:

- Are EFSA's answer(s) to the Norwegian comments satisfactorily answered, or do VKM still have scientific objections to EFSA's conclusions
- Do EFSA's answers to comments from member states indicate need for follow-up by VKM
- Considerations specific to Norway

Stage 2		
1. Date of publication of EFSA opinion	19.04.21	
2. VKMs deadline for informing NFSA and EEA	19.05.21	
3. If YES in item 8. (table 1)– Answer from EFSA has been considered by VKM as satisfactory (Annex G)	YES: X	NO:
4. If YES in item 3 – Comments from VKM:	The VKM GMO Panel takes the answers from EFSA into consideration: <i>"The measurement of residual herbicide and metabolite levels of the herbicide in plants is not in the remit of the GMO Panel."</i>	
5. If NO in item 3 – Comment(s) and further considerations from VKM:		
6. Follow-up item 11 (table 1) – comments from VKM:	The VKM GMO Panel does not consider the introduced modifications in event GMB151 to imply potential specific health or environmental risks in Norway, compared to EU-countries.	
7. Considerations from VKM regarding comments from EU member states and other countries under Annex G:	No member state comments imply the need for follow-up by VKM.	

1.3 Considerations after EFSA's publication of their scientific opinion – part 2

If VKM's comments regarding health and environmental risk are not considered to be satisfactorily answered by EFSA, VKM shall within three months carry out a risk assessment of these conditions, as well as conditions specific to Norway. VKM shall highlight uncertainty and knowledge gaps. It shall be stated in what area there are knowledge gaps, and whether the uncertainty, quality of the data, and knowledge gaps will affect the conclusion.

Stage 3		
1. Need for further assessment(s)	YES:	NO: X
2. If YES in item 1. – Further considerations from VKM:		
3. If NO in item 1. – comments from VKM:		
<p>The scientific documentation provided in the application is adequate for risk assessment, and in accordance with the EFSA guidance on risk assessment of genetically modified plants for use in food or feed.</p> <p>The EFSA opinion is adequate also for Norwegian considerations.</p>		
4. Need for national considerations	YES:	NO: X
5. If YES in item 4. – comments from VKM:		
6. If NO or NA in item 4. – comments from VKM		
<p>The VKM GMO Panel does not consider the modifications in event GMB151 to imply potential specific health or environmental risks in Norway, compared to EU-countries.</p>		
7. Need for a risk assessment	YES:	NO: X
8. Date of deadline for risk assessment	Not applicable	
9. Date of publication of assessment	15.02.22	

2 Conclusions

The VKM GMO Panel has performed an assessment of genetically modified soybean GMB151. Event GMB151 (application EFSA-GMO-NL-2018-153) is a genetically modified soybean developed by *Agrobacterium tumefaciens*-mediated transformation. Soybean GMB151 express the *hppdPf-4Pa* and *cry14Ab-1.b* genes encoding the HPPD-4 and Cry14Ab-1 proteins. HPPD-4 confers tolerance to 4-hydroxyphenylpyruvate dioxygenase (HPPD) inhibitor herbicides such as isoxaflutole. Protein Cry14Ab-1 belongs to the Cry (crystal)-type protein family and confers resistance to soybean-cyst nematodes.

The VKM GMO panel has assessed the documentation in the application EFSA-GMO-NL-2018-153 and EFSA's opinion on genetically modified soybean GMB151 (EFSA 2021). The scientific documentation provided in the application is adequate for risk assessment, and in accordance with the EFSA guidance on risk assessment of genetically modified plants for use in food or feed (EFSA 2011).

The GMO panel does not consider the introduced modifications in soybean GMB151 to imply potential specific health or environmental risks in Norway, compared to EU-countries. The EFSA opinion is adequate also for Norwegian considerations (2021). Therefore, a full risk assessment of event GMB151 was not performed by the VKM GMO Panel.

3 References

EFSA (2010) Guidance on the environmental risk assessment of genetically modified plants. Scientific opinion from the EFSA Panel on Genetically Modified Organisms (GMO). The EFSA Journal 8 (11):1-111 <http://www.efsa.europa.eu/en/efsajournal/doc/1879.pdf>

EFSA (2011) Guidance for risk assessment of food and feed from genetically modified plants. The EFSA Journal 9(5): 2150. <http://www.efsa.europa.eu/en/efsajournal/doc/2150.pdf>

EFSA (2021) Assessment of genetically modified soybean GMB151 for food and feed uses, under Regulation (EC) No 1829/2003(application EFSA-GMO-NL-2018-153). EFSA Journal 2021;19(4):6424 <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2021.6424>