

Appendix 3.	Literature search for annual monitoring on the general surveillance of DAS and Bayer GM maize products in the EU
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APPENDIX 3

LITERATURE SEARCH TO SUPPORT GENERAL SURVEILLANCE OF 2019/2020 ANNUAL POST MARKET ENVIRONMENTAL MONITORING REPORTS OF MAIZE MON 89034 × 1507 × NK603 AND ITS SUB-COMBINATIONS, AND MAIZE MON 89034 × 1507 × MON 88017 × 59122 AND ITS SUB-COMBINATIONS

Data protection.

This application contains scientific data and other information which are protected in accordance with Art. 31 of Regulation (EC) No 1829/2003.

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SUMMARY

This literature search was conducted to support general surveillance of 2019/2020 annual post market environmental monitoring reports in accordance with the 2019 EFSA explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019). It addresses the review question “Do maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations, derived food/feed products and their respective introduced traits have adverse effects on human and animal health and the environment?”.

In accordance with the 2019 EFSA Explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019), eligibility/inclusion criteria to establish the relevance of retrieved publications was determined. Two electronic bibliographic databases (SciSearch and CABA databases) were selected for the literature search. Search strategies were developed together with an information specialist to perform the searches. In addition, literature searches were conducted in internet pages of relevant key organisations for MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.

The literature search covered the time span 2019 – 2020 and retrieved 383 and 229 hits in SciSearch and CABA databases, respectively, and a total of 13 records in the internet pages of the relevant key organisations. From these, four publications were identified as relevant. These publications did not have any implication on the risk assessment, because no new hazard, modified exposure, or new scientific uncertainty is reported.

The comprehensive literature search found no new information that would invalidate the conclusions of the risk assessment for MON 89034 × 1507 × NK603 and its sub-combinations, and for MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.

1. INTRODUCTION

As part of the general surveillance requirements for MON 89034 × 1507 × NK603¹, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations² authorised in the European Union (EU) market under regulation (EC) No 1829/2003, Dow AgroSciences Distribution S.A.S and Bayer Agriculture BV³ has actively monitored the maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations by conducting quarterly literature searches covering the time span between June 2019 and May 2020.

The results of the literature search that were analysed in detail according to the relevance for the risk assessment of MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations are presented here.

The completed form of EFSA Appendix E completeness checklist (EFSA, 2019) is provided as an attachment to this report.

2. FORMULATING THE REVIEW QUESTION AND CLARIFYING ITS PURPOSE

This literature search has been conducted to address the review question “Do MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations, derived food/feed products and respective introduced traits have adverse effects on human and animal health and the environment?”

The purpose for undertaking this literature search is to support general surveillance of 2019/2020 annual post market environmental monitoring (PMEM) reports in accordance with the 2019 EFSA explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019).

Key elements used for the review question are humans, animals, and/or the environment (= population), MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations, derived food/feed products and respective introduced traits (= intervention/exposure), conventional counterpart or non-GM maize (= comparator), and adverse effect on human and animal health, and the environment (= outcomes). Accordingly, the eligibility criteria for assessing the relevance of publications for inclusion in the literature review are provided in **Table 1**.

¹ European Commission Implementing Decision 2013/648/EU: <https://eur-lex.europa.eu/legal-content/NL/TXT/?uri=CELEX:02013D0648-20190211> – Accessed on 16 September 2020

² European Commission Implementing Decision 2013/650/EU: <https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:32013D0650> – Accessed on 16 September 2020

³ Hereafter, referenced as DAS and Bayer

Table 1. Eligibility/inclusion criteria to establish the relevance of publications

Key elements	Criteria
Population	Humans, animals and the environment (taking into account the scope of the applications) <i>i.e.</i> authorisation for all uses as any other maize but excluding the cultivation of MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations are addressed as general protection goals.
Intervention/exposure	MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations derived food/feed products and corresponding introduced traits addressed in the publication are identical or similar to those under scientific review by the EFSA.
Comparator	In case of a comparative study that uses the GM plant material as test material, eligible publications must report a non-GM maize as a comparator.
Outcomes	Adverse effects on human and animal health and the environment are addressed (taking into consideration the scope of the applications).
Additional key elements	
Stacked events / sub-combinations	The single events addressed in the publication are the single events in MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations. MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations are addressed in the study.
Information/ data requirements, including source of publications data	The publication potentially contributes to the knowledge of the risk assessment of MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations intended for all uses as any other maize but excluding cultivation. Original/primary data are presented in the publication.

3. SEARCHING FOR/ IDENTIFYING RELEVANT PUBLICATIONS

In accordance with the 2010 EFSA Guidance on application of systematic review methodology to food and feed safety assessments to support decision making (EFSA, 2010) and the 2019 EFSA Explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019), identification of bibliographic sources and development of search strategies was developed together with an information specialist who subsequently performed the literature search. The approach used to develop the search strategy follows a lumping method and includes a wide range of free-text terms and where available, controlled vocabulary that defines search terms.

3.1. Sources of scientific literature

3.1.1. Electronic bibliographic databases

DAS and Bayer select the SciSearch (Science Citation Index)⁴ and the CABA⁵ (CAB Abstracts®)⁶ databases to perform the literature search based on the coverage and relevance of the journals included in these databases. The literature search was conducted using the STN® database catalogue⁷.

The SciSearch, produced by from Clarivate Analytics (UK) Limited, includes over 45 million records in Science and technology published since 1974. It includes literatures captured under Science Citation Index Expanded™, a largest multidisciplinary scientific database and an international index covering all scientific topics. It contains also all the records published from the Current Contents series of publications as well as bibliographic information and cited references from over 5 600 scientific, technical and medical journals. In addition, “*Records from January 1991 on include abstracts, author keywords, and KeyWords Plus®. Bibliographic information, authors, cited references, and KeyWords Plus® are searchable*”⁵. The database is updated on a weekly basis.

The CABA, produced by CAB international (UK), includes over 8.9 million records in agriculture and life sciences published since 1973. The database “*covers worldwide literature from all areas of agriculture and related sciences including biotechnology, forestry, and veterinary medicine. Sources for CABA include journals, books, reports, published theses, conference proceedings, and patents. Bibliographic information, indexing terms, abstracts, and CAS Registry Numbers are searchable. An online thesaurus is available for the Con-trolled Term (/CT), the Geographic term (/GT), and the Organism (/ORGN) fields*”. The database is updated on a weekly basis.

All journals included in the two databases must go through a verification process and as a minimum requirement, non-English language journals must include English-language bibliographic information (title, abstract, keywords) and be peer-reviewed^{7,8}. In general, English is considered the universal language of science. For this reason, the journals most important to the international research community will publish either full text or a

⁴ SciSearch: <http://www.stn-international.de/sites/default/files/STN/summary-sheets/SCISEARCH.pdf> - Accessed on 2 September 2020

⁵ CABA: <http://www.stn-international.de/sites/default/files/STN/summary-sheets/CABA.pdf> - Accessed on 2 September 2020

⁶ CAB Abstracts®: <https://www.cabi.org/publishing-products/online-information-resources/cab-abstracts/> - Accessed on 14 July 2020

⁷ STN®: http://www.stn-international.de/stnbrochures_gi.html - Accessed on 14 July 2020

⁸ Web of Science group; <https://clarivate.com/webofsciencgroup/solutions/webofscience-core-collection-editorial-selection-process/> - Accessed on 14 July 2020

minimum of bibliographic information in English, which is especially true in the scientific domain of natural sciences. Full text in English is highly desirable if the journal intends to serve an international community of researchers. Therefore, it is expected that even if there is a relevant article for the food and feed safety of GM plants in a language different than English, the article will include title/abstract/keywords in English, which will guarantee the retrievability of these articles when using keywords and keyword combinations in English.

Based on the above, the selected databases are, to our knowledge, comprehensive, multidisciplinary, conservative sources for literature searching and offer the broadest coverage to retrieve a largest breadth of possible relevant publications. Therefore, additional search sources are not deemed necessary.

3.1.2. Internet (world-wide-web) pages of relevant key organisations

In accordance with the 2019 Explanatory note on literature searching for GMO applications (EFSA, 2019), the search in electronic bibliographic databases has been complemented with internet search in webpages of relevant key organisations involved in the risk assessment of GM plants.

Of the 14 key organisations cited in the 2019 Explanatory note on literature searching for GMO applications (EFSA, 2019), three (Environment and Climate Change Canada, CIBIOGEM and OECD) are not involved in the risk assessment of GM plants. Six (USDA, FDA, CFIA, Health Canada, FSANZ and MAFF) do not regulate stack products. Two (OGTR and GEAC), for the time being, only assess cotton and oilseed rape. From the remaining three, US EPA regulates only stacks with Plant-Incorporated Protectants (PIP) combinations while CTNBio and CONABIA regulate stack products. Therefore, the internet search focused on the last three organisations (US EPA, CTNBio and CONABIA)⁹ relevant for MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.

3.2. Search strategy (electronic databases)

3.2.1. Search terms and search strings

The intervention/exposure key elements were defined and translated into search terms. These search terms were identified following the below listed approaches in line with the 2019 EFSA Explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019):

- assessing words in reference publications,
- assessing subject indexing terms,
- searching for synonyms and related terms and
- consulting experts and stakeholders.

Following the aforementioned approaches, possible synonyms, related terms, abbreviations including acronyms and truncations, old and new as well as lay and scientific terminologies, brand and generic names, and spelling variants including

⁹ Internet pages of the relevant key organisations for maizes MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations:

US EPA (<https://www.epa.gov/environmental-topics/science-topics>) - Accessed on 14 July 2020;

CTNBio (<http://ctnbio.mctic.gov.br/>) - Accessed on 14 July 2020;

CONABIA (<https://www.argentina.gob.ar/>) - Accessed on 14 July 2020.

common typos of the search terms were considered. Where applicable, the search was also adapted to controlled vocabulary (subject indexing). The search terms were designed to give an excellent coverage and retrieve the broadest possible number of articles related to MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.

Annex I presents the translation of the intervention key elements into search terms. The search terms, the fields and the Boolean operators used to combine them were defined as shown in **Annex II**. The search strings were built following the STN[®] commands (Karlsruhe, 2007) to allow the literature search in the STN[®] database catalogue. The free-text search terms, controlled vocabulary and the search strings are updated upon identification of a new search term.

The search sets belonging to each key element as described in **Annex I** and **Annex II** were combined by ‘OR’ to retrieve all the identified publications excluding duplicates. The separate assessment of these search sets, including those yielding only a small number of publications, was considered not necessary as this would duplicate the literature screening process and alter the consistency and comprehensiveness used in the literature search strategies.

3.2.2. Limits applied

An advanced literature search was conducted using the web-based STN[®] database catalogue for both the selected electronic databases (*see* section 3.1.1). STN[®] enables searching in each electronic database by making use of pre-defined fields, set combinations based on Boolean operators or a combination of both¹⁰. In STN[®], the results of the search from each database can be merged and duplicates can be removed by de-duplication.

The STN[®] literature search utilised “Basic Index” (None (or /BI)) field which utilises free-text search terms and enables comprehensive searching in different sections (*e.g.* title, abstract, keywords, supplementary terms, controlled terms) within a record (Karlsruhe, 2007; STN, 2018a, 2018b). Where applicable, controlled vocabulary (subject indexes) offered by CABA (controlled terms (CT)) were also included in the search strategy. Controlled vocabulary is assigned by subject specialists to CAB records to represent the content of the source documents. It allows users to use only one term to search for a concept rather than using lots of terms¹¹. The most relevant, broad and controlled terms in the hierarchy of CAB Thesaurus terms and that were listed as preferred terms by CAB for a search query were selected and added to the search string, as shown in **Annex I** and **Annex II**.

3.2.3. Language

The search terms and their combinations are established in English. Therefore, the search is expected to result in a list of titles, abstracts or keywords written in English, covering also articles written in other languages with at least a title, abstract or keywords in English. Also, as technical terms on proteins names, event codes, trade names and Latin

¹⁰ STNindex user guide: <https://stn.products.fiz-karlsruhe.de/training-center/documentation/stn-index-user-guide> - Accessed on 2 September 2020

¹¹ CAB Direct advanced searching of CAB abstracts: <https://www.cabi.org/Uploads/CABI/publishing/training-materials/resources-by-interface/cab-direct-user-guides/advanced-searching-cab-abstracts.pdf> - Accessed on 14 July 2020

names are common in all languages, the search is expected to retrieve articles in all languages.

3.2.4. Time period

The literature searches covered the time span 1 May 2019 - 28 May 2020.

The literature search in the electronic databases was conducted on a quarterly basis considering the entry dates in the STN® database catalogue. **Table 2** shows the search dates and the time span of each search.

Table 2. Description of literature search periods in the electronic databases

Date of the search ¹	Last database update dates	Search period
04 October 2019	SciSearch: 30 September 2019	01 May 2019 – 04 October 2019
	CABA: 02 October 2019	01 May 2019 – 04 October 2019
18 February 2020	SciSearch: 18 February 2020	04 Oct 2019 – 21 January 2020
	CABA: 13 February 2020	04 Oct 2019 – 21 January 2020
01 June 2020	SciSearch: 28 May 2020	22 January 2020 – 28 May 2020
	CABA: 29 May 2020	22 January 2020 – 28 May 2020

¹ The literature search in the electronic databases was conducted on a quarterly basis considering the entry dates in the STN® database catalogue. In addition, a final literature search was also conducted covering the full-time span of the season (01 May 2019 – 28 May 2020) on 22 June 2020. The search result presented in **Annex II** shows the final search covering the full-time span of the 2019-2020 season.

The literature search in the internet pages of the relevant key organisations was conducted on 21 July 2020 and 24 August 2020.

3.2.5. Reference publications

In accordance with the 2019 EFSA Explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019), reference publications that are relevant to answer the review question and are within the scope of the applications shall be used for identifying search terms as well as validating the search strategy. A list of reference publications, complying with the above criteria and used in validating the search strategy as part of the protocol development are provided in **Annex III**.

3.3. Search strategy (relevant key organisations)

Information regarding the selection process for relevant records in the webpages are shown in **Annex IV**. For the selection of relevant publications, all records concerning GMO applications and approvals published in the webpage of each relevant key organisation were screened based on 'limits applied' as described in the **Annex IV**. Afterwards, all the records within the specified limits were assessed for their relevance to MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.

4. SELECTING PUBLICATIONS

Publications retrieved from the literature search were screened for their relevance first and then the selected ones were evaluated for their reliability through detailed assessments. Relevance to the search scope and scientific reliability were rigorously assessed by internal and external technical experts.

4.1. Eligibility screening process

The process of selecting relevant publications was undertaken in two stages:

- **Rapid assessment** for the relevance based on information in the title and abstract of the publications, to exclude publications that are obviously irrelevant.
- **Detailed assessment** of full-text document if required. Full-text documents were obtained for those publications not excluded in the rapid assessment and those documents were assessed in detail for their relevance to the review question. Publications not excluded by the detailed assessment were classified as relevant. At this stage, publications must comply with all the eligibility/inclusion criteria and meet all key elements of the review question.

Experts with a solid experience in GM plants risk assessment performed the screening process. Based on the available comprehensive weight of evidence, the experts assessed if the conclusions of the risk assessment are still valid.

4.2. Reviewers

All publications that were identified by the search described in **Section 3** have been screened by three different reviewers (one internal and two external experts) with solid experience in the risk assessment of GM plants.

In case of disagreements on eligibility for the inclusion of publications, the reviewers, discuss together. If uncertainty remains, the publication is *de facto* included for further consideration.

4.3. Classification of publications

Taking account of i) the review question, ii) the scope of the application, *i.e.* authorisation of MON 89034 × 1507 × NK603, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations for all uses as any other maize but excluding cultivation in the EU and iii) the eligibility criteria to establish the relevance of retrieved publications, the list of retrieved hits was assessed to conclude whether a certain publication was considered relevant or not. When a publication was considered relevant, the category the publication belongs to is indicated. The following is a non-exhaustive list of categories publications may belong to:

Food/Feed safety assessment

- Molecular characterisation
- Protein expression
- Crop composition
- Agronomic and phenotypic characteristics
- Toxicology - Animal feeding / *In vitro*
- Allergenicity of the protein or the whole food/feed
- Nutrition
- Protein / DNA/ RNA fate in digestive tract

- Spillage and consequences thereof

It should be noted that the selection criteria are well defined and reassessed annually.

4.4. Quality appraisal of the relevant publications

The relevant publications, if identified, are appraised in terms of reliability in accordance with the 2019 EFSA Explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019) by at least two individuals with technical expertise on the topic. In cases of disagreements, the evaluators discuss together and collectively determine the reliability of the publication. For the list of reliability categories, *see Annex V*.

5. SUMMARISING AND REPORTING THE DATA, AND CONSIDERING THE IMPLICATIONS OF THE FINDINGS

5.1. Search outcomes

5.1.1. Outcomes of literature search (electronic databases)

The literature searches identified 383 and 229 hits in SciSearch and CABA databases, respectively (*see Annex II*). After de-duplication, the total number resulted in 490 hits.

5.1.2. Outcomes of literature search (relevant key organisations)

The literature search in the internet pages of the three relevant key organisations retrieved a total of 13 records. The links to the results of the literature search and the summary of the retrieved data are shown in **Annex IV**.

5.2. Results of the publication selection process

5.2.1. Results of the publication selection process (electronic databases)

The results of the publication selection process for the retrieved hits from the electronic databases are provided in **Annex V**. Three relevant publications were retrieved after detailed assessment of the full text documents. For bibliographic details regarding these publications in .RIS format, *see Annex VI*. For the full-text documents of the relevant publications, *see* the references folder within the literature searching folder.

5.2.2. Results of the publication selection process (relevant key organisations)

The results of the publication selection process for the retrieved records from the relevant key organisations are provided in **Annex IV**. One record was identified as relevant. For the full-text document of the relevant publication, *see* the references folder within the literature searching folder.

Implication/(s) of the retrieved relevant publications for the risk assessment

The comprehensive literature search relevant to the food, feed, and environmental safety of MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations found no new information that would invalidate the conclusions of the risk assessment for MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.

The relevant publications as well as their reliability and implications for the risk assessment are provided in **Annex V**.

6. CONCLUSION

Taking into consideration all the above, DAS and Bayer confirms that this literature search, conducted to support the general surveillance in the context of 2019/2020 annual PMEM for maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations, in accordance with the 2019 EFSA explanatory note on literature searching conducted in the context of GMO applications (EFSA, 2019), identified no relevant publications that would invalidate the initial conclusions of MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations risk assessment. Therefore, the conclusions of the risk assessment as presented in the initial applications of MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations remain unchanged.

REFERENCES

References highlighted in grey are EFSA publications. Therefore, their pdfs are not provided.

EFSA, 2010. Application of systematic review methodology to food and feed safety assessments to support decision making The EFSA Journal, 1637, 1-90.

EFSA, 2019. Explanatory note on literature searching conducted in the context of GMO applications for (renewed) market authorisation and annual post-market environmental monitoring reports on GMOs authorised in the EU market - Note on literature searching to GMO risk assessment guidance. EFSA journal, 2019:EN-1614, 1-62.

Karlsruhe F 2007. Command Summary Chart for bibliographic and full-text databases. 1-26.

STN 2018a. CABA. 1-12.

STN 2018b. SciSearch - Science Citation Index. 1-8.

Annex I. Translation of intervention/exposure key elements into search terms for maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations literature search in STN® database catalogue

The search terms for maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations, and for maize MON 89034 × 1507 × NK603 and its sub-combinations are covered by the search terms for Bayer GM maize products.

1. Free-text search terms for Bayer GM Maize products

Key elements	Search terms	Synonyms, related terms, abbreviations/ acronyms/ truncations, lay/ scientific terms, brand/ generic names and spelling variants/ typos (adapted for performing search in STN® database catalogue)
Event names	MON 810 or MON-ØØ81Ø-6 NK 603 or MON-ØØ6Ø3-6 MON 88017 or MON-88Ø17-3 MON 89034 or MON-89Ø34-3 MON 87460 or MON 8746Ø-4 MON 87427 or MON-87427-7 MON 87411 or MON-87411-9 MON 87403 or MON-874Ø3-1 TC1507 or 1507 or DAS-Ø15Ø7-1 59122 or DAS-59122-7 T25 or ACS-ZMØØ3-2	MON 810? OR MON810? OR MON!810? OR MON 00810? OR MON00810? OR MON!00810? OR MON 0081Ø? OR MONØØ81Ø? OR MON!ØØ81Ø? OR MON EMPTY SETEMPTY SET81EMPTY SET? OR MON!EMPTY SETEMPTY SET81EMPTY SET? OR MONEMPTY SETEMPTY SET81EMPTY SET? OR NK603 OR NK 603 MON 00603? OR MON!00603? OR MON00603? OR MON 00603? OR MONØØ603? OR MON!ØØ603? OR MON EMPTY SETEMPTY SET6EMPTY SET3? OR MON!EMPTY SETEMPTY SET6EMPTY SET3? OR MONEMPTY SETEMPTY SET6EMPTY SET3? MON 88017? OR MON!88017? OR MON88017? OR MON 88017? OR MON!88017? OR MON88017? OR MON 88EMPTY SET17? OR MON!88EMPTY SET17? OR MON88EMPTY SET17? MON 89034? OR MON!89034? OR MON89034? OR MON 89034? OR MON!89034? OR MON89034? OR MON 89EMPTY SET34? OR MON!89EMPTY SET34? OR MON89EMPTY SET34? MON 87460? OR MON!87460? OR MON87460? OR MON 87460? OR MON!87460? OR MON87460? OR MON 8746EMPTY SET? OR MON!8746EMPTY SET? OR MON8746EMPTY SET? OR MON 87427? OR MON!87427? OR MON87427? OR MON 87411? OR MON!87411? OR MON87411? MON 87403? OR MON!87403? OR MON87403? OR MON 87403? OR MON!87403? OR

		<p>MON87403? OR MON 874EMPTY SET3? OR MON1874EMPTY SET3? OR MON874EMPTY SET3?</p> <p>1507 OR 1507 OR 15EMPTYSET7 OR TC1507 OR TC1507 OR TC15EMPTYSET7 OR DAS 01507? OR DAS101507? OR DAS01507? OR DAS 01507? OR DAS101507? OR DAS01507? OR DAS EMPTY SET15EMPTY SET7? OR DAS1EMPTY SET15EMPTY SET7? OR DASEMPTY SET15EMPTY SET7? OR 59122 OR DAS 59122? OR DAS159122? OR DAS59122? OR</p> <p>T25 OR ACS ZM003? OR ACS1ZM003? OR ACSZM003? OR ACS ZM003? OR ACS1ZM003? OR ACSZM003? OR ACS ZMEMPTY SET EMPTY SET3? OR ACS1ZMEMPTY SET EMPTY SET3? OR ACSZMEMPTY SET EMPTY SET3?</p>
Trade names	<p>YieldGard® Corn Borer</p> <p>Roundup Ready® 2</p> <p>YieldGard VT Rootworm/RR2®</p> <p>YieldGard® VT® PRO®</p> <p>DroughtGard® Hybrids</p> <p>Herculex™ I, Herculex™ CB</p> <p>Herculex™ RW</p> <p>Liberty Link™ Maize</p> <p>YieldGard® VT ® Triple®</p> <p>Genuity® VT Triple PRO®</p> <p>Genuity® VT Double PRO™</p> <p>Genuity® PowerCore®</p> <p>SmartStax®</p> <p>Genuity® VT Double Pro® with Roundup® Hybridization System</p>	<p>YIELD GARD? OR YIELDG? OR YIELD1GARD? OR YIELDGARD? OR ROUNDUPREADY? OR ROUND UP READY? OR ROUNDUP1READY? OR ROUNDUP READY? OR ROUNDUP READY? OR RR2? OR RRII? OR VT? PRO? OR VT1 PRO OR VT PRO? OR VT1PRO? OR VTPRO? OR DROUGHTGARD? OR DROUGHT GARD? OR HERCULEX? LIBERTY LINK? OR LIBERTYLINK? OR LIBERTY1LINK OR VT? TRIPLE? OR VTRIPLE? OR VT1TRIPLE? OR VT TRIPLE? OR VT DOUBLE PRO? OR VT DOUBLEPRO? OR VTDDOUBLE PRO? OR VTDDOUBLEPRO? OR VT1DOUBLE PRO? OR VT1DOUBLEPRO? OR VT121PRO? OR VT 2 PRO? OR POWER CORE? OR POWERCORE? SMARTSTAX? OR SMART STAX? OR SMART1STAX? OR RHS OR HYBRIDIZATION SYSTEM</p>
Newly expressed proteins	<p>CP4 EPSPS</p> <p>CP4 EPSPS L214P</p>	<p>CP4EPSPS? OR CP4 EPSPS? OR 5(W)(ENOLPYRUVYL SHIKIMATE OR ENOL PYRUVYL SHIKIMATE OR ENOLPYRUVYL SHIKIMATE OR ENOL PYRUVYL SHIKIMATE OR ENOLPYRUVYL SHIKIMATE)(W)3 PHOSPHATE SYNTHASE OR</p>

	PAT Cry1Ab Cry1A.105 Cry2Ab2 Cry3Bb1 Cold shock protein B (cspB) ATHB-17 Cry1F Cry34/35Ab1	PAT OR PHOSPHINOTHRICIN OR NIACETYLTRANSFERASE OR NIACETYLTRANSFERASE OR NIACETYLTRANSFERASE OR N ACETYLTRANSFERASE OR N ACETYLTRANSFERASE CRY1AB OR CRY1 AB OR CRY 1 AB OR CRY 1AB OR CRY1AB OR CRY1 AB OR CRY I AB OR CRY IAB OR CRY1A105 OR CRY1A 105 OR CRY 1A 105 OR CRY 1A105 OR CRY1A105 OR CRY1A 105 OR CRY 1A 105 OR CRY 1A105 OR CRY1A.105 CRY2AB? OR CRY2 AB? OR CRY 2 AB? OR CRY 2AB? OR CRY1IAB? OR CRYII AB? OR CRY II AB? OR CRY IIB? OR CRY3BB? OR CRY3 BB? OR CRY 3 BB? OR CRY 3BB? OR CRYIIBB? OR CRYIII BB? OR CRY III BB? OR CRY IIBB? OR CSPB OR CSP B OR COLD SHOCK PROTEIN B OR COLDISHOCKPROTEINIB OR COLDISHOCK PROTEINIB OR COLDISHOCKPROTEINIB OR ATHB17? OR ATHB117? OR ATHB 17? OR HB117? OR HB117? OR HB 17? CRY1F OR CRY1 F OR CRY 1 F OR CRY 1F OR CRYIF OR CRYI F OR CRY IF OR CRY IF CRY34AB1? OR CRY34AB 1? OR CRY 34AB 1? OR CRY 34AB1? OR CRY35AB1? OR CRY35AB 1? OR CRY 35AB 1? OR CRY 35AB1? (RNA? OR DSRNA? OR SIRNA?)(5A)
Newly expressed RNA	DvSnf7 RNA	(DVSNF7 OR WCR SNF7 OR CRW SNF7 OR DV SNF7 OR DVSNF 7 OR DV SNF 7 OR DV.SNF7 OR SNF7)
Intended traits: Herbicide tolerance traits	Glyphosate/ roundup tolerance, Glufosinate tolerance	(TOLERAN? OR RESISTAN? OR PROTEC?)(5A) (GLIPHOSATE OR GLIFOSATE OR ROUNDUP? OR ROUND UP? OR ROUNDUP OR GLUFOSINATE OR GLUPHOSINATE OR BASTA OR RELY OR FINALE OR IGNITE OR CHALLENGE OR LIBERTY)
Intended traits: Hybridisation system traits	Glyphosate/ roundup-based hybridization system	(HYBRID? OR CROSS? OR POLLEN? OR POLLINAT? OR STERIL?)(5A)MALE) AND (GLIPHOSATE OR GLIFOSATE OR ROUNDUP? OR ROUND UP? OR ROUNDUP?)

Intended traits: Insect protection traits	Bt maize / <i>Bacillus thuringiensis</i> maize providing Lepidopteran protection or protection against Noctuidae and Crambidae insect pest families or corn/stem borer or <i>Ostrinia nubilalis</i> or European corn borer (ECB) or <i>Sesamia nonagrioides</i> or Mediterranean corn borer (MCB) or fall armyworm or corn earworm or western bean cutworm	(TOLERAN? OR RESISTAN? OR PROTEC?)(5A) (BTMAIZE OR BTCORN OR BT MAIZE OR BT CORN OR BTMAIZE OR BTCORN OR THURINGIENSIS OR EARWORM OR CUTWORM OR ARMYWORM OR EAR WORM OR CUT WORM OR ARMY WORM OR NOCTUIDAE OR LEPIDOPTERA? OR BORER? OR LEPIDOPTERA? OR OSTRINIA OR SESAMIA OR NUBILALIS OR NONAGRIOIDES OR NOCTUIDAE OR CRAMBIDAE OR ECB OR MCB)
	Bt maize / <i>Bacillus thuringiensis</i> maize providing Coleopteran protection, or protection against Chrysomel insect pest families or western corn rootworm (WCR / WCRW) or <i>Diabrotica virgifera virgifera</i> or Northern corn rootworm (NCR) or <i>Diabrotica barberi</i> (D barberi) or Southern corn rootworm (SCR) or <i>Diabrotica undecimpunctata</i> (D undecimpunctata) or Mexican corn rootworm (MCR) or <i>Diabrotica virgifera zeae</i> (D. <i>virgifera zeae</i>)	(TOLERAN? OR RESISTAN? OR PROTEC?)(5A) (ROOTWORM? OR ROOT WORM? OR COLEOPTERA? OR CHRYSOMEL? OR DIABROTICA OR VIRGIFERA OR BARBERI OR UNDECIMPUNCTATA OR CRW OR WCR? OR NCR? OR SCR? OR MCR? OR BTMAIZE OR BTCORN OR BT MAIZE OR BT CORN OR BTMAIZE OR BT CORN OR THURINGIENSIS)
Intended traits: Drought tolerance traits	Drought tolerant or water efficient maize	TOLERAN? OR RESISTAN? OR PROTEC?)(5A) DROUGHT OR (EFFICIEN? OR REDUC? OR LIMIT? OR DECRE? OR LOW?)(5A)WATER
Intended traits: Increased biomass traits	Increased ear biomass	(INCRE? OR ENHANCE?)(5A) (EAR SIZE OR EAR BIOMASS OR EAR GROWTH OR EAR WEIGHT OR EAR MASS OR SINK CAPACITY OR SINK POTENTIAL)
Crop name	maize, corn, <i>Zea mays</i>	MAIZE? OR CORN? OR "ZEA MAYS" OR "Z. MAYS"
GMO general terms	Genetically modified organism (GMO, GM); Living modified organism (LMO); biotechnology-	GMO? OR LMO? OR GM OR GE OR TRANSGEN? OR ((GENETIC? OR LIVING OR BIOTECH?)(5A)(MODIF? TRANSFORM? OR MANIPULAT? OR IMPROV? OR ENGINEER?

	derived organism (biotech-derived); Genetic engineering (GE); transgenesis (transgene); genetic transformation; genetic manipulation; genetic improvement.	OR DERIV?)

2. Controlled vocabulary, if applicable, for Bayer GM Maize products

Key elements	Search terms	Controlled terms offered by CABA (adapted for performing search in STN® database catalogue)
Event name	Not applicable	
Trade name	Not applicable	
Newly expressed proteins	Not applicable	
Intended traits: Insect protection and herbicide tolerance traits	Bt maize / <i>Bacillus thuringiensis</i> maize providing Lepidopteran protection or protection against Noctuidae and Crambidae insect pest families or corn/stem borer or <i>Ostrinia nubilalis</i> or European corn borer (ECB) or <i>Sesamia nonagrioides</i> or Mediterranean corn borer (MCB) or fall armyworm or corn earworm or western bean cutworm Bt maize / <i>Bacillus thuringiensis</i> maize providing Coleopteran protection, or protection against Chrysomel insect pest families or western corn rootworm (WCR / WCRW) or <i>Diabrotica virgifera</i> <i>virgifera</i> or Northern corn rootworm (NCR) or <i>Diabrotica barberi</i> (D barberi) or Southern corn rootworm (SCR) or <i>Diabrotica undecimpunctata</i> (D undecimpunctata) or Mexican corn rootworm (MCR) or <i>Diabrotica virgifera zeae</i> (D. <i>virgifera zeae</i>) Glyphosate/ roundup tolerance, Glufosinate tolerance	(WEED CONTROL+UF,NT/CT OR INSECT CONTROL+UF,NT/CT) AND (LEPIDOPTERA+UF,NT2/CT,ORGN OR COLEOPTERA+UF,NT2/CT,ORGN OR GLYPHOSATE+UF,NT/CT OR GLUFOSINATE+UF,NT/CT)
Intended traits: Hybridisation	Glyphosate based hybridization system	(HYBRIDIZATION+UF,NT/CT OR CROSSING+UF,NT/CT OR PLANT BREEDING METHODS+UF,NT/CT OR POLLINATION+UF,NT/CT OR

system traits		MALE STERILITY+UF,NT/CT) AND GLYPHOSATE+UF,NT/CT
Intended traits: Drought tolerance and increased ear biomass traits	Drought tolerance and increased ear biomass	DROUGHT RESISTANCE+UF,NT/CT OR BIOMASS PRODUCTION+UF,NT/CT
Crop name	maize, corn, <i>Zea mays</i>	ZEAMAYS+UF,NT/CT, ORGN OR MAIZE+UF, NT/CT, ORGN The term 'corn' is covered by 'maize'
GMO general terms	Genetically modified organism (GMO, GM); Living modified organism (LMO); biotechnology-derived organism (biotech-derived); Genetic engineering (GE); transgenesis (transgene); genetic transformation; genetic manipulation; genetic improvement	GENETIC ENGINEERING+UF,NT/CT OR GENETIC TRANSFORMATION+UF,NT/CT OR GENETICALLY ENGINEERED FOODS+UF,NT/CT OR GENETICALLY ENGINEERED ORGANISMS+UF,NT/CT OR FOOD BIOTECHNOLOGY+UF,NT/CT

Annex II. The search string used for maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations literature search in SciSearch and CABA databases using STN® database catalogue, and outcomes of the search (2019-2020)

The literature search covered the time span June 2019 - May 2020. The literature search in the electronic databases was conducted on a quarterly basis considering the entry dates in the STN® database catalogue. In addition, a final literature search was conducted covering the full-time span of the season. The search result presented below shows the final search conducted covering the full-time span of the 2019-2020 season.

Translation of query terms into STN search language:

This alert run covers the time range from 20190501 until 20200528

(FILE 'STNGUIDE' ENTERED AT 14:30:10 ON 22 JUN 2020)

```
L1          QUE SPE=ON  ABB=ON  PLU=ON  MON 810? OR MON810? OR MON!810?
OR
          MON 00810? OR MON00810? OR MON!00810? OR MON 00810? OR
          MON00810? OR MON!00810? OR MON EMPTY SETEMPTY SET81EMPTY
SET?
          OR MON!EMPTY SETEMPTY SET81EMPTY SET? OR MONEMPTY SETEMPTY
          SET81EMPTY SET? OR NK603 OR NK 603
L2          QUE SPE=ON  ABB=ON  PLU=ON  MON 00603? OR MON!00603? OR
          MON00603? OR MON 00603? OR MON00603? OR MON!00603? OR MON
          EMPTY SETEMPTY SET6EMPTY SET3? OR MON!EMPTY SETEMPTY
SET6EMPTY
          SET3? OR MONEMPTY SETEMPTY SET6EMPTY SET3?
L3          QUE SPE=ON  ABB=ON  PLU=ON  MON 88017? OR MON!88017? OR
          MON88017? OR MON 88017? OR MON!88017? OR MON88017? OR MON
          88EMPTY SET17? OR MON!88EMPTY SET17? OR MON88EMPTY SET17?
L4          QUE SPE=ON  ABB=ON  PLU=ON  MON 89034? OR MON!89034? OR
          MON89034? OR MON 89034? OR MON!89034? OR MON89034? OR MON
          89EMPTY SET34? OR MON!89EMPTY SET34? OR MON89EMPTY SET34?
L5          QUE SPE=ON  ABB=ON  PLU=ON  MON 87460? OR MON!87460? OR
          MON87460? OR MON 87460? OR MON!87460? OR MON87460? OR MON
          8746EMPTY SET? OR MON!8746EMPTY SET? OR MON8746EMPTY SET?
OR
          MON 87427? OR MON!87427? OR MON87427? OR 1507 OR 1507 OR
          15EMPTYSET7 OR TC1507 OR TC1507 OR TC15EMPTYSET7
L6          QUE SPE=ON  ABB=ON  PLU=ON  DAS 01507? OR DAS!01507? OR
          DAS01507? OR DAS 01507? OR DAS!01507? OR DAS01507? OR DAS
          EMPTY SET15EMPTY SET7? OR DAS!EMPTY SET15EMPTY SET7? OR
          DASEMPTY SET15EMPTY SET7? OR 59122 OR DAS 59122? OR
DAS!59122?
          OR DAS59122? OR T25
L7          QUE SPE=ON  ABB=ON  PLU=ON  ACS ZM003? OR ACS!ZM003? OR
          ACSZM003? OR ACS ZMOO3? OR ACS!ZMOO3? OR ACSZMOO3? OR ACS
          ZMEMPTY SET EMPTY SET3? OR ACS!ZMEMPTY SET EMPTY SET3? OR
          ACSZMEMPTY SET EMPTY SET3? OR MON 87411? OR MON!87411? OR
          MON87411?
```

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

L8 QUE SPE=ON ABB=ON PLU=ON MON 87403? OR MON!87403? OR
 MON87403? OR MON 87403? OR MON!87403? OR MON87403? OR MON
 874EMPTY SET3? OR MON!874EMPTY SET3? OR MON874EMPTY SET3?
 L9 QUE SPE=ON ABB=ON PLU=ON YIELD GARD? OR YIELDG? OR
 YIELD!GAR
 D? OR YIELDGARD? OR ROUNDUPREADY? OR ROUND UP READY? OR
 ROUND!UP!READY? OR ROUND!UP READY? OR ROUNDUP READY? OR
 RR2?
 OR RRII? OR VT? PRO? OR VT! PRO OR VT PRO? OR VT!PRO? OR
 VTPRO? OR DROUGHTGARD? OR DROUGHT GARD? OR HERCULEX?
 L10 QUE SPE=ON ABB=ON PLU=ON LIBERTY LINK? OR LIBERTYLINK?
 OR
 LIBERTY!LINK OR VT? TRIPLE? OR VTTRIPLE? OR VT!TRIPLE? OR
 VT
 TRIPLE? OR VT DOUBLE PRO? OR VT DOUBLEPRO? OR VTDDOUBLE PRO?
 OR
 VTDDOUBLEPRO? OR VT!DOUBLE PRO? OR VT DOUBLEPRO? OR
 VT!DOUBLEPRO
 ? OR VT!2!PRO?
 L11 QUE SPE=ON ABB=ON PLU=ON SMARTSTAX? OR SMART STAX? OR
 SMART!STAX? OR RHS OR HYBRIDIZATION SYSTEM OR VT 2 PRO? OR
 POWER CORE? OR POWERCORE?
 L12 QUE SPE=ON ABB=ON PLU=ON MAIZE? OR CORN? OR "ZEA MAYS"
 OR
 "Z. MAYS"
 L13 QUE SPE=ON ABB=ON PLU=ON CP4EPSPS? OR CP4 EPSPS? OR
 5(W) (ENOLPYRUVYLSHIKIMATE OR ENOL PYRUVYL SHIKIMATE OR
 ENOLPYRUVYL SHIKIMATE OR ENOL PYRUVYLSHIKIMATE OR
 ENOL!PYRUVYL!
 SHIKIMATE!) (W)3 PHOSPHATE SYNTHASE OR PAT OR
 PHOSPHINOTHRICIN
 L14 QUE SPE=ON ABB=ON PLU=ON N!ACETYLTRANSFERASE OR N!ACETYL
 TRANSFERASE OR N!ACETYL!TRANSFERASE OR N ACETYL TRANSFERASE
 OR
 N ACETYL!TRANSFERASE OR N ACETYLTRANSFERASE
 L15 QUE SPE=ON ABB=ON PLU=ON CRY1AB OR CRY1 AB OR CRY 1 AB
 OR
 CRY 1AB OR CRYIAB OR CRYI AB OR CRY I AB OR CRY IAB OR
 CRY1A105 OR CRY1A 105 OR CRY 1A 105 OR CRY 1A105 OR
 CRYIA105
 OR CRYIA 105 OR CRY IA 105 OR CRY IA105 OR CRYIA.105
 L16 QUE SPE=ON ABB=ON PLU=ON CRY2AB? OR CRY2 AB? OR CRY 2
 AB?
 OR CRY 2AB? OR CRYIIAB? OR CRYII AB? OR CRY II AB? OR CRY
 IIAB? OR CRY1F OR CRY1 F OR CRY 1 F OR CRY 1F OR CRYIF OR
 CRYI
 F OR CRY I F OR CRY IF
 L17 QUE SPE=ON ABB=ON PLU=ON CRY3BB? OR CRY3 BB? OR CRY 3
 BB?
 OR CRY 3BB? OR CRYIIIBB? OR CRYIII BB? OR CRY III BB? OR
 CRY
 IIIBB? OR CRY34AB1? OR CRY34AB 1? OR CRY 34AB 1? OR CRY
 34AB1?
 OR CRY35AB1? OR CRY35AB 1? OR CRY 35AB 1? OR CRY 35AB1?
 L18 QUE SPE=ON ABB=ON PLU=ON CSPB OR CSP B OR COLD SHOCK
 PROTEIN B OR COLD!SHOCKPROTEIN!B OR COLD!SHOCK PROTEIN!B OR
 COLD!SHOCK!PROTEIN!B OR ATHB17? OR ATHB!17? OR ATHB 17? OR
 HB17? OR HB!17? OR HB 17?
 L19 QUE SPE=ON ABB=ON PLU=ON (RNA? OR DSRNA? OR

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

SIRNA?) (5A) (DVSN
 7 F7 OR WCR SNF7 OR CRW SNF7 OR DV SNF7 OR DVSNF 7 OR DV SNF
 7 OR DV.SNF7 OR SNF7)
 L20 QUE SPE=ON ABB=ON PLU=ON GMO? OR LMO? OR GM OR GE OR
 TRANSGEN? OR ((GENETIC? OR LIVING OR BIOTECH?) (5A) (MODIF?
 OR TRANSFORM? OR MANIPULAT? OR IMPROV? OR ENGINEER? OR
 DERIV?))
 L21 QUE SPE=ON ABB=ON PLU=ON (TOLERAN? OR RESISTAN? OR
 PROTEC?) (5A) (GL!PHOSATE OR GL!FOSATE OR ROUNDUP? OR ROUND UP? OR
 ROUND!UP OR GLUFOSINATE OR GLUPHOSINATE OR BASTA OR RELY OR
 FINALE OR IGNITE OR CHALLENGE OR LIBERTY)
 L22 QUE SPE=ON ABB=ON PLU=ON (TOLERAN? OR RESISTAN? OR
 PROTEC?) (5A) (BORER? OR LEPIDOPTERA? OR OSTRINIA OR SESAMIA OR
 NUBILALIS OR NONAGRIOIDES OR NOCTUIDAE OR CRAMBIDAE OR ECB OR MCB)
 L23 QUE SPE=ON ABB=ON PLU=ON (TOLERAN? OR RESISTAN? OR
 PROTEC?) (5A) (BTMAIZE OR BTCORN OR BT MAIZE OR BT CORN OR BT!MAIZE OR
 BT!CORN OR THURINGIENSIS OR EARWORM OR CUTWORM OR ARMYWORM
 OR EAR WORM OR CUT WORM OR ARMY WORM OR NOCTUIDAE OR
 LEPIDOPTERA?)
 L24 QUE SPE=ON ABB=ON PLU=ON (TOLERAN? OR RESISTAN? OR
 PROTEC?) (5A) (ROOTWORM? OR ROOT WORM? OR COLEOPTERA? OR CHRYSOMEL? OR
 DIABROTICA OR VIRGIFERA OR BARBERI OR UNDECIMPUNCTATA)
 L25 QUE SPE=ON ABB=ON PLU=ON (TOLERAN? OR RESISTAN? OR
 PROTEC?) (5A) (CRW OR WCR? OR NCR? OR SCR? OR MCR? OR BTMAIZE OR
 BTCORN OR BT MAIZE OR BT CORN OR BT!MAIZE OR BT!CORN OR
 THURINGIENSIS)
 L26 QUE SPE=ON ABB=ON PLU=ON (TOLERAN? OR RESISTAN? OR
 PROTEC?) (5A) (DROUGHT OR (EFFICIEN? OR REDUC? OR LIMIT? OR DECRE? OR
 LOW?) (5A) WATER
 L27 QUE SPE=ON ABB=ON PLU=ON (HYBRID? OR CROSS? OR POLLEN?
 OR POLLINAT? OR STERIL? (5A) MALE) AND (GL!PHOSATE OR GL!FOSATE
 OR ROUNDUP? OR ROUND UP? OR ROUND!UP?)
 L28 QUE SPE=ON ABB=ON PLU=ON (INCRE? OR ENHANCE?) (5A) (EAR
 SIZE OR EAR BIOMASS OR EAR GROWTH OR EAR WEIGHT OR EAR MASS OR
 SINK CAPACITY OR SINK POTENTIAL)
 L29 QUE SPE=ON ABB=ON PLU=ON ZEA MAYS+UF, NT/CT, ORGN OR
 MAIZE+UF, NT/CT, ORGN
 L30 QUE SPE=ON ABB=ON PLU=ON GENETIC ENGINEERING+UF, NT/CT OR
 GENETIC TRANSFORMATION+UF, NT/CT OR GENETICALLY ENGINEERED
 FOODS+UF, NT/CT OR GENETICALLY ENGINEERED ORGANISMS+UF, NT/CT
 OR

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

FOOD BIOTECHNOLOGY+UF,NT/CT
L31 QUE SPE=ON ABB=ON PLU=ON (WEED CONTROL+UF,NT/CT OR
INSECT CONTROL+UF,NT/CT) AND (LEPIDOPTERA+UF,NT2/CT,ORGN OR
COLEOPTERA +UF,NT2/CT,ORGN OR GLYPHOSATE+UF,NT/CT OR
GLUFOSINATE+UF,NT/CT)

L32 QUE SPE=ON ABB=ON PLU=ON (HYBRIDIZATION+UF,NT/CT OR
CROSSING+UF,NT/CT OR PLANT BREEDING METHODS+UF,NT/CT OR
GLYPHOSATE POLLINATION+UF,NT/CT OR MALE STERILITY+UF,NT/CT) AND
+UF,NT/CT

L33 QUE SPE=ON ABB=ON PLU=ON DROUGHT RESISTANCE+UF,NT/CT OR
BIOMASS PRODUCTION+UF,NT/CT

Search in SciSearch Database:

FILE 'SCISEARCH' ENTERED AT 14:31:04 ON 22 JUN 2020
CHARGED TO COST=SLB76724 REG EU ALLYRMAIZE

L34 123 SEA SPE=ON ABB=ON PLU=ON (L1 OR L2 OR L3 OR L4 OR L5 OR
L6 OR L7 OR L8) AND ED>=20190501 AND ED<=20200528 AND PY>=2019

L35 484 SEA SPE=ON ABB=ON PLU=ON (L9 OR L10 OR L11) AND
ED>=20190501 AND ED<=20200528 AND PY>=2019

L36 23300 SEA SPE=ON ABB=ON PLU=ON L12 AND ED>=20190501 AND
ED<=20200528 AND PY>=2019

L37 21 SEA SPE=ON ABB=ON PLU=ON L35 AND L36

L38 840 SEA SPE=ON ABB=ON PLU=ON (L13 OR L14) AND ED>=20190501
AND ED<=20200528 AND PY>=2019

L39 110 SEA SPE=ON ABB=ON PLU=ON (L15 OR L16) AND ED>=20190501
AND ED<=20200528 AND PY>=2019

L40 7 SEA SPE=ON ABB=ON PLU=ON L17 AND ED>=20190501 AND
ED<=20200528 AND PY>=2019

L41 71 SEA SPE=ON ABB=ON PLU=ON L18 AND ED>=20190501 AND
ED<=20200528 AND PY>=2019

L42 8 SEA SPE=ON ABB=ON PLU=ON L19 AND ED>=20190501 AND
ED<=20200528 AND PY>=2019

L43 1034 SEA SPE=ON ABB=ON PLU=ON L38 OR L39 OR L40 OR L41 OR L42

L44 24653 SEA SPE=ON ABB=ON PLU=ON L20 AND ED>=20190501 AND
ED<=20200528 AND PY>=2019

L45 175 SEA SPE=ON ABB=ON PLU=ON L43 AND (L44 OR L36)

L46 1927 SEA SPE=ON ABB=ON PLU=ON L21 AND ED>=20190501 AND
ED<=20200528 AND PY>=2019

L47 118 SEA SPE=ON ABB=ON PLU=ON (L22 OR L23) AND ED>=20190501
AND ED<=20200528 AND PY>=2019

L48 2008 SEA SPE=ON ABB=ON PLU=ON (L24 OR L25) AND ED>=20190501
AND ED<=20200528 AND PY>=2019

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 ×
59122 and its sub-combinations
Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

L49 24080 SEA SPE=ON ABB=ON PLU=ON L26 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L50 89 SEA SPE=ON ABB=ON PLU=ON L27 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L51 17 SEA SPE=ON ABB=ON PLU=ON L28 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L52 28033 SEA SPE=ON ABB=ON PLU=ON L46 OR L47 OR L48 OR L49 OR L50
OR L51

L53 118 SEA SPE=ON ABB=ON PLU=ON L52 AND L44 AND L36

L54 383 SEA SPE=ON ABB=ON PLU=ON L34 OR L37 OR L45 OR L53

Search in CABA Database:

FILE 'CABA' ENTERED AT 14:32:20 ON 22 JUN 2020
CHARGED TO COST=SLB76724 REG EU ALLYRMAIZE

L55 49 SEA SPE=ON ABB=ON PLU=ON (L1 OR L2 OR L3 OR L4 OR L5 OR
L6 OR L7 OR L8) AND ED>=20190501 AND ED<=20200528 AND PY>=2019

L56 101 SEA SPE=ON ABB=ON PLU=ON (L9 OR L10 OR L11) AND
ED>=20190501 AND ED<=20200528 AND PY>=2019

L57 10310 SEA SPE=ON ABB=ON PLU=ON L12 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L58 5986 SEA SPE=ON ABB=ON PLU=ON L29 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L59 10319 SEA SPE=ON ABB=ON PLU=ON L57 OR L58

L60 12 SEA SPE=ON ABB=ON PLU=ON L56 AND L59

L61 232 SEA SPE=ON ABB=ON PLU=ON L13 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L62 76 SEA SPE=ON ABB=ON PLU=ON (L14 OR L15) AND ED>=20190501
AND ED<=20200528 AND PY>=2019

L63 39 SEA SPE=ON ABB=ON PLU=ON L16 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L64 8 SEA SPE=ON ABB=ON PLU=ON (L17 OR L18) AND ED>=20190501
AND ED<=20200528 AND PY>=2019

L65 3 SEA SPE=ON ABB=ON PLU=ON L19 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L66 343 SEA SPE=ON ABB=ON PLU=ON L61 OR L62 OR L63 OR L64 OR L65

L67 7008 SEA SPE=ON ABB=ON PLU=ON L20 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L68 3384 SEA SPE=ON ABB=ON PLU=ON L30 AND ED>=20190501 AND
ED<=202005 28 AND PY>=2019

L69 7021 SEA SPE=ON ABB=ON PLU=ON L67 OR L68

L70 117 SEA SPE=ON ABB=ON PLU=ON L66 AND (L59 OR L69)

L71 713 SEA SPE=ON ABB=ON PLU=ON L21 AND ED>=20190501 AND
ED<=202005

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 ×
59122 and its sub-combinations
Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

28 AND PY>=2019
 L72 118 SEA SPE=ON ABB=ON PLU=ON (L22 OR L23) AND ED>=20190501
 AND
 ED<=20200528 AND PY>=2019
 L73 755 SEA SPE=ON ABB=ON PLU=ON (L24 OR L25) AND ED>=20190501
 AND
 ED<=20200528 AND PY>=2019
 L74 10815 SEA SPE=ON ABB=ON PLU=ON L26 AND ED>=20190501 AND
 ED<=202005
 28 AND PY>=2019
 L75 45 SEA SPE=ON ABB=ON PLU=ON L27 AND ED>=20190501 AND
 ED<=202005
 28 AND PY>=2019
 L76 13 SEA SPE=ON ABB=ON PLU=ON L28 AND ED>=20190501 AND
 ED<=202005
 28 AND PY>=2019
 L77 226 SEA SPE=ON ABB=ON PLU=ON L31 AND ED>=20190501 AND
 ED<=202005
 28 AND PY>=2019
 L78 5 SEA SPE=ON ABB=ON PLU=ON L32 AND ED>=20190501 AND
 ED<=202005
 28 AND PY>=2019
 L79 2687 SEA SPE=ON ABB=ON PLU=ON L33 AND ED>=20190501 AND
 ED<=202005
 28 AND PY>=2019
 L80 13538 SEA SPE=ON ABB=ON PLU=ON L71 OR L72 OR L73 OR L74 OR L75
 OR
 L76 OR L77 OR L78 OR L79
 L81 88 SEA SPE=ON ABB=ON PLU=ON L80 AND L69 AND L59
 L82 229 SEA SPE=ON ABB=ON PLU=ON L55 OR L60 OR L70 OR L81

Deduplication of Hit-sets from both sources:

FILE 'CABA, SCISEARCH' ENTERED AT 14:33:49 ON 22 JUN 2020
 CHARGED TO COST=SLB76724 REG EU ALLYRMAIZE
 L83 511 DUP REM L82 L54 (101 DUPLICATES REMOVED)
 ANSWERS '1-228' FROM FILE CABA
 ANSWERS '229-511' FROM FILE SCISEARCH
 D L83 1-511 AN TI

FILE 'STNGUIDE' ENTERED AT 14:35:17 ON 22 JUN 2020
 CHARGED TO COST=SLB76724 REG EU ALLYRMAIZE

FILE SCISEARCH

FILE COVERS 1974 TO 15 Jun 2020 (20200615/ED)

To bring you the most up-to-date SciSearch information,
 SciSearch SDIs now run on Mondays.

FILE CABA

FILE LAST UPDATED: 17 JUN 2020 <20200617/UP>

FILE COVERS 1973 TO DATE

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE IN
 THE BASIC INDEX (/BI), ABSTRACT (/AB), AND TITLE (/TI) FIELDS >>>

FILE STNGUIDE

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Apr 24, 2020 (20200424/UP).

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

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Annex III. List of reference publications used in identifying search terms and in validating the literature search strategy for maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations literature search

The list below includes reference publications used for each relevant key element, namely event name, trade name, newly expressed proteins and intended traits. For GMO general and crop name search terms, given the breadth of the terms and as they are used to focus the search to GM crops, reference publications were considered not applicable.

Castillo-Lopez E, Clark KJ, Paz HA, Ramirez Ramirez HA, Klusmeyer TH, Hartnell GF, Kononoff PJ. (2014). Performance of dairy cows fed silage and grain produced from second-generation insect-protected (*Bacillus thuringiensis*) corn (MON 89034), compared with parental line corn or reference corn. *J. Dairy Sci.*, 97, 3832–3837.

Curran KL, Festa AR, Goddard SD, Harrigan GG, Taylor ML. (2015). Kernel compositions of glyphosate-tolerant and corn rootworm-protected MON 88017 sweet corn and insect-protected MON 89034 sweet corn are equivalent to that of conventional sweet corn (*Zea mays*). *Agricultural and Food Chemistry*, 63, 3046-3052.

Drury SM, Reynolds TL, Ridley WP, Bogdanova N, Riordan S, Nemeth MA, Sorbet R, Trujillo WA, Breeze ML. (2008). Composition of forage and grain from second-generation insect-protected corn MON 89034 is equivalent to that of conventional corn (*Zea mays* L.). *Journal of Agricultural and Food Chemistry*, 56(12), 4623-4630.

Healy C, Hammond B, Kirkpatrick J. (2008). Results of a 13-week safety assurance study with rats fed grain from corn rootworm-protected, glyphosate-tolerant MON 88017 corn. *Food and Chemical Toxicology*, 46, 2517-2524.

Heck GR, Armstrong CL, Astwood JD, Behr CF, Bookout JT, Brown SM, Cavato TA, DeBoer DL, Deng MY, George C (2005). Development and characterization of a CP4 EPSPS-based, glyphosate-tolerant corn event. *CROP SCIENCE*. Volume: 45, Issue: 1, Pages: 329-339, DOI: 10.2135/cropsci2005.0329

Hyun Y, Bressner GE, Ellis M, Lewis AJ, Fischer R, Stanisiewski EP, Hartnell GF. (2004). Performance of growing-finishing pigs fed diets containing Roundup Ready corn (event NK603), a nontransgenic genetically similar corn, or conventional corn lines. *JOURNAL OF ANIMAL SCIENCE*. Volume: 82. Issue: 2. Pages: 571-580

Lundry DR, Burns A, Nemeth MA and Riordan SG (2013). Composition of grain and forage from insect-protected and herbicide-tolerant corn, MON 89034 × TC1507 × MON 88017 × DAS-59122 7 (SmartStax), is equivalent to that of conventional corn (*Zea mays* L.). [dx.doi.org/10.1021/jf304005n](https://doi.org/10.1021/jf304005n) | *J. AGRIC. FOOD CHEM.*, 61, 1991–1998

Taylor ML, Hartnell GF, Riordan SG, Nemeth MA, Karunanandaa K, George B, Astwood, JD. (2003). Comparison of broiler performance when fed diets containing grain from Roundup Ready (NK603), YieldGard x Roundup Ready (MON810 x NK603), non-transgenic control, or commercial corn. *POULTRY SCIENCE*. Volume: 82, Issue: 3, Pages: 443-453, DOI: 10.1093/ps/82.3.443

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

Taylor M, Lucas D, Nemeth M, David S, Hartnell G (2007). Comparison of broiler performance and carcass parameters when fed diets containing combined trait insect-protected and glyphosate-tolerant corn (MON 89034 x NK603), control, or conventional reference corn. POULTRY SCIENCE, 86(9), 1988-1994, DOI: 10.1093/ps/86.9.1988

Venkatesh TV, Cook K, Liu B, Perez T, Willse A, Tichich R, Feng P, Harrigan G. (2015). Compositional differences between near-isogenic GM and conventional maize hybrids are associated with backcrossing practices in conventional breeding. Plant Biotechnology Journal, 13, 200–210.

Annex IV. Literature search in internet pages of relevant key organisations for maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations covering time span 2019 - 2020

Relevant key organisations	Link to the relevant information and summary of the retrieved records
US EPA	<p>https://www.epa.gov/ingredients-used-pesticide-products/current-and-previously-registered-section-3-plant-incorporated – Accessed on 21 July 2020. The webpage dedicated to PIP registrations was checked.</p> <p><i>Date of the most recent website update at the time of the search:</i> 14 July 2020</p> <p><i>Limits applied:</i> The list of PIP active ingredients registered was sorted by ‘Year Registered’ and those registered starting from 2019 were assessed.</p> <p><i>Number of records retrieved matching the abovementioned criteria:</i> “1”.</p> <p><i>Number of relevant records or full-text documents retrieved:</i> The retrieved record is not relevant to MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.</p>
CTNBio	<p>http://ctnbio.mctc.gov.br/liberacao-comercial/#/liberacao-comercial/consultar-processo – Accessed on 14 August 2020. The webpage dedicated to commercial releases (= Liberacoes Comerciais) was checked.</p> <p><i>Date of the most recent website update at the time of the search:</i> 21 August 2020</p> <p><i>Limits applied:</i> The list of commercial releases for plants (= plantas) starting from 2019 was assessed.</p> <p><i>Number of records retrieved matching the abovementioned criteria:</i> “3”.</p> <p><i>Number of relevant records or full-text documents retrieved:</i> The retrieved records are not relevant to MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations.</p>

CONABIA	<p>https://www.argentina.gob.ar/agroindustria/alimentos-y-bioeconomia/ogm-comerciales – Accessed on 21 July 2020. The webpage of the national advisory commission on agricultural biotechnology (= Comisión Nacional Asesora de Biotecnología Agropecuaria) was checked.</p> <p><i>Date of the most recent website update at the time of the search:</i> Not available</p> <p><i>Limits applied:</i> The list of events with commercial resolución starting from 2019 were checked.</p> <p><i>Number of records retrieved matching the abovementioned criteria:</i> “9”.</p> <p><i>Number of relevant records or full-text documents retrieved:</i> One of the retrieved records is relevant to MON 89034 × 1507 × MON 88017 × 59122 (CONABIA, 2019). The record does not have any implication on the risk assessment, because no new hazards, modified exposure, or new scientific uncertainties are reported.</p>
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REFERENCES

CONABIA, 2019. Resistencia a Lepidópteros y Coleópteros, y tolerancia a glufosinato de amonio y a glifosato. (MON-89034-3 × DAS-01507-1 × MON-88017-3 × DAS-59122-7). <https://www.boletinoficial.gob.ar/detalleAviso/primera/213595/20190816>,

Annex V. Results of the publication selection process for maize MON 89034 × 1507 × NK603 and its sub-combinations, and maize MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations literature search in SciSearch and CABA databases using STN® database catalogue

Table 1. Results of the publication selection process.

Review question captured in the search	Number of publications
Publications identified after searches of the scientific literature in SciSearch and CABA databases (following de-duplication)	490
Publications excluded after rapid assessment for relevance	466
Publications screened using full-text documents	24
Publications excluded after detailed assessment for relevance	21
Unobtainable publications	0
Unclear publications	0
Publications considered relevant	3

Table 2. List of all relevant publications for MON 89034 × 1507 × NK603 and its sub-combinations, MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations retrieved after detailed assessment of full-text documents for relevance: ordered by category of information.

Products	Study (author(s) and year)	Title	Source
Food/Feed safety assessment			
Protein expression			
MON 89034 × 1507 × NK603	(Eghrari <i>et al.</i> , 2019)	Homozygosis of <i>Bt</i> locus increases <i>Bt</i> protein expression and the control of Spodoptera frugiperda (Lepidoptera: Noctuidae) in maize hybrids	Crop Protection
Ag/Pheno			
MON 89034 × 1507 × NK603, MON 89034 × 1507 × MON 88017 × 59122	(Pruter <i>et al.</i> , 2019)	Association of insect-derived ear injury with yield and aflatoxin of maize hybrids varying in <i>Bt</i> transgenes	Environmental Entomology
MON 89034 × 1507 × NK603	(Clawson <i>et al.</i> , 2019)	Consistent risk assessment outcomes from agronomic characterization of GE maize in diverse regions and as single-event and stacked products	Crop Science

Table 3. List of publications excluded from the risk assessment after detailed assessment of full-text documents, with the reason(s) for exclusion

Study authors	Year	Title	Source	Reasons for exclusion based on the eligibility/ inclusion criteria
Horn <i>et al.</i>	2019	A first assessment of glyphosate, 2,4-D and Cry proteins in surface water of South Africa	South African Journal of Science	It is not a safety study on MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Al-Harbi <i>et al.</i>	2019	A proteomic-based approach to study underlying molecular responses of the small intestine of Wistar rats to genetically modified corn (MON810)	Transgenic Research	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Szoboszlai <i>et al.</i>	2019	Annual replication is essential in evaluating the response of the soil microbiome to the genetic modification of maize in different biogeographical regions	PLoS ONE	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
West <i>et al.</i>	2019	<i>Bt</i> Proteins Exacerbate Negative Growth Effects in Juvenile Rusty (F. rusticus) Crayfish Fed Corn Diet	Archives of Environmental Contamination and Toxicology	It is not a safety study on MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Holderbaum <i>et al.</i>	2019	Comparison of in vitro callus-cultures from transgenic maize AG-5011YG (MON810) and conventional near-	Crop Breeding and Applied Biotechnology	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-

Study authors	Year	Title	Source	Reasons for exclusion based on the eligibility/ inclusion criteria
		isogenic maize AG-5011		combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Bruns <i>et al.</i>	2019	Comparison of yield components and physiological parameters of drought tolerant and conventional corn hybrids	Agronomy Journal	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Stein <i>et al.</i>	2019	Expression profiling of key pathways in rat liver after a one-year feeding trial with transgenic maize MON810	Scientific Reports	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Xu <i>et al.</i>	2019	Effects of <i>Bacillus thuringiensis</i> genetic engineering on induced volatile organic compounds emission in maize and the attractiveness to a parasitic wasp	Frontiers in Bioengineering and Biotechnology	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Erasmus <i>et al.</i>	2019	Introgression of a cry1Ab transgene into open pollinated maize and its effect on Cry protein concentration and target pest survival	PLoS ONE	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Steinberg <i>et al.</i>	2019	Lack of adverse effects in subchronic	Archives of	The hybrid used to conduct the

Study authors	Year	Title	Source	Reasons for exclusion based on the eligibility/ inclusion criteria
		and chronic toxicity/carcinogenicity studies on the glyphosate-resistant genetically modified maize NK 603 in Wistar Han RCC rats	Toxicology	study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Steinberg <i>et al.</i>	2020	Lack of adverse effects in subchronic and chronic toxicity/carcinogenicity studies on the glyphosate-resistant genetically modified maize NK 603 in Wistar Han RCC rats	Archives of Toxicology	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Visser <i>et al.</i>	2020	Plant Abandonment by <i>Busseola fusca</i> (Lepidoptera: Noctuidae) Larvae: Do <i>Bt</i> Toxins Have an Effect?	Insects	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Visser <i>et al.</i>	2019	Preference of <i>Bt</i> -resistant and susceptible <i>Busseola fusca</i> moths and larvae for <i>Bt</i> and non- <i>Bt</i> maize	Entomologia Experimentalis et Applicata	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Shu <i>et al.</i>	2019	Presence of Cry1Ab in the <i>Bt</i> maize - aphid (<i>Rhopalosiphum maidis</i>) - ladybeetle (<i>Propylaea japonica</i>) system has no adverse effects on insect biological parameters	Entomologia Experimentalis et Applicata	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and

Study authors	Year	Title	Source	Reasons for exclusion based on the eligibility/ inclusion criteria
				its sub-combinations
Mesnager <i>et al.</i>	2019	Relationship between faecal microbiota and plasma metabolome in rats fed NK603 and MON810 GM maize from the GMO90+ study	Food and Chemical Toxicology	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Fernandes <i>et al.</i>	2019	Species richness and community composition of ants and beetles in <i>Bt</i> and non- <i>Bt</i> maize fields	Environmental Entomology	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Counoul <i>et al.</i>	2019	The GMO90+ project: absence of evidence for biologically meaningful effects of genetically modified maize-based diets on Wistar rats after 6-months feeding comparative trial	Toxicological Sciences	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
du Pisanie <i>et al.</i>	2019	The rate of release of Cry1Ab protein from <i>Bt</i> maize leaves into water	Water SA	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Fast <i>et al.</i>	2020	Transgene expression in sprayed and non-sprayed herbicide-tolerant genetically engineered crops is	Regulatory Toxicology and Pharmacology	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-

Study authors	Year	Title	Source	Reasons for exclusion based on the eligibility/ inclusion criteria
		equivalent		combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Shogren <i>et al.</i>	2019	Transport and instream removal of the Cry1Ab protein from genetically engineered maize is mediated by biofilms in experimental streams	PLoS ONE	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations
Corujo <i>et al.</i>	2019	Use of omics analytical methods in the study of genetically modified maize varieties tested in 90 days feeding trials	Food Chemistry	The hybrid used to conduct the study is not MON 89034 × 1507 × NK603 and its sub-combinations, or MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

Table 4. Report of the reliability and implications for the risk assessment of the relevant publication retrieved after detailed assessment of full-text document for relevance.

Study author(s) and year	Reliability appraisal ¹	Implications for the risk assessment ²
Food/Feed Safety assessment		
Protein expression		
(Eghrari <i>et al.</i> , 2019)	Moderate	None, because no new hazards, modified exposure, or new scientific uncertainties are reported
Ag/Pheno		
Pruter <i>et al.</i> (2019)	Moderate	None, because no new hazards, modified exposure, or new scientific uncertainties are reported
Clawson <i>et al.</i> (2019)	High	None, because no new hazards, modified exposure, or new scientific uncertainties are reported
¹ High (use as key study); Moderate because the study reported is subject to some limitations (useable as key study depending on the limitations of the study); Low because the study reported is subject to several limitations (limited use or not useful; generally not to be used as key study, but depending on the limitations of the study, it may be useful in weight of evidence approaches or as supporting information); Not reliable because the study reported does not comply with minimum reliability criteria carrying a high level of uncertainty (not useful); Not assignable because no or insufficient information is reported in the study (EFSA, 2019)		
² Identification of a new hazard, modified exposure, or new scientific uncertainty requiring further consideration in the risk assessment; None , because no new hazards, modified exposure, or new scientific uncertainties are reported; None , because the findings reported in the study are not reliable; Implications for risk assessment were previously considered by EFSA and/or its GMO Panel, and are therefore not addressed further here (EFSA, 2019).		

¹ **High** (use as key study); **Moderate** because the study reported is subject to some limitations (useable as key study depending on the limitations of the study); **Low** because the study reported is subject to several limitations (limited use or not useful; generally not to be used as key study, but depending on the limitations of the study, it may be useful in weight of evidence approaches or as supporting information); **Not reliable** because the study reported does not comply with minimum reliability criteria carrying a high level of uncertainty (not useful); **Not assignable** because no or insufficient information is reported in the study (EFSA, 2019)

² Identification of a new hazard, modified exposure, or new scientific uncertainty requiring further consideration in the risk assessment; **None**, because no new hazards, modified exposure, or new scientific uncertainties are reported; **None**, because the findings reported in the study are not reliable; Implications for risk assessment were previously considered by EFSA and/or its GMO Panel, and are therefore not addressed further here (EFSA, 2019).

References

References highlighted in grey are EFSA publications. Therefore, their pdfs are not provided.

- Clawson EL, Perrett JJ, Cheng L, Ahmad A, Stojšin D, McGowan Y, Heredia Diaz O, Muhammad A, Vertuan H, Quddusi M and Soares DJ, 2019. Consistent Risk Assessment Outcomes from Agronomic Characterization of GE Maize in Diverse Regions and as Single-Event and Stacked Products. *Crop Sci*, 59, 1681-1691.
- EFSA, 2019. Explanatory note on literature searching conducted in the context of GMO applications for (renewed) market authorisation and annual post-market environmental monitoring reports on GMOs authorised in the EU market - Note on literature searching to GMO risk assessment guidance. *EFSA journal*, 2019:EN-1614, 1-62.
- Eghrari K, de Brito AH, Baldassi A, Santana Balbuena T, Aparecido Fernandes O and Vitti Moro G, 2019. Homozygosis of Bt locus increases Bt protein expression and the control of *Spodoptera frugiperda* (*Lepidoptera: Noctuidae*) in maize hybrids. *Food Chemistry*, 292, 359-371.
- Pruter LS, Brewer MJ, Weaver MA, Murray SC, Isakeit TS and Bernal JS, 2019. Association of Insect-Derived Ear Injury With Yield and Aflatoxin of Maize Hybrids Varying in Bt Transgenes. *Environmental Entomology*, 48(6), 1401-1411.

Annex VI. List of relevant publications retrieved from SciSearch and CABA databases using STN® database catalogue (provided in .RIS format)

TY - JOUR

AU - Clawson, E.L.

AU - Perrett, J.J.;

AU - Cheng, L.

AU - Ahmad, A.

AU - Stojšin, D.

AU - McGowan, Y.

AU - Heredia Diaz, O.

AU - Muhammad, A.

AU - Vertuan, H.

AU - Quddusi, M.

AU - Soares, D.J.

PY - 2019

SP - 1681-1691

ST - Consistent Risk Assessment Outcomes from Agronomic Characterization of GE Maize in Diverse Regions and as Single-Event and Stacked Products

T2 - Crop Sci

TI - Consistent Risk Assessment Outcomes from Agronomic Characterization of GE Maize in Diverse Regions and as Single-Event and Stacked Products

VL - 59

ID - 25

ER -

TY - JOUR

AU - Eghrari, K.

AU - de Brito, A.H.

AU - Baldassi, A.

AU - Santana Balbuena, T.

AU - Aparecido Fernandes, O.

AU - Vitti Moro, G.

PY - 2019

Appendix 3 – Annual general surveillance report in 2019/2020 season

Literature search - MON 89034 × 1507 × NK603 and its sub-combinations, and MON 89034 × 1507 × MON 88017 × 59122 and its sub-combinations

Dow AgroSciences Distributions S.A.S and Bayer Agriculture BV

SP - 359-371

ST - Homozygosis of Bt locus increases Bt protein expression and the control of *Spodoptera frugiperda* (*Lepidoptera: Noctuidae*) in maize hybrids

T2 - Food Chemistry

TI - Homozygosis of Bt locus increases Bt protein expression and the control of *Spodoptera frugiperda* (*Lepidoptera: Noctuidae*) in maize hybrids

VL - 292

ID - 24

ER -

TY - JOUR

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AU - Brewer, M.J.

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AU - Murray, S.C.

AU - Isakeit, T.S.

AU - Bernal, J.S.

PY - 2019

SP - 1401-1411

ST - Association of Insect-Derived Ear Injury With Yield and Aflatoxin of Maize Hybrids Varying in Bt Transgenes

T2 - Environmental Entomology

TI - Association of Insect-Derived Ear Injury With Yield and Aflatoxin of Maize Hybrids Varying in Bt Transgenes

VL - 48(6)

ID - 7

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