

CÍLENÝ MONITORING HYGIENICKÉ A ZDRAVOTNÍ NEZÁVADNOSTI POTRAVIN V ČR

a.

Souhrn

Rok 2014 byl prvním rokem, kdy probíhala studie "HYGIMON" zaměřená na detekci a identifikaci geneticky modifikovaných organismů (GMO) v potravinách a na falšování potravin živočišného původu. K diagnostice byla využita molekulárně biologická metoda polymerázové řetězové reakce (dále PCR).

Ve čtyřech odběrových termínech byly ve 24 lokalitách v ČR odebrány v obchodní síti vzorky rýže, vzhledem k pravidelným záchytům GM rýže v systému Rychlého varování pro potraviny a krmiva (RASFF) a na trhu EU v předchozích letech. Celkem bylo v roce 2014 odebráno a analyzováno 96 vzorků rýže. K detekci GM rýže byla využita kvalitativní screeningová metoda polymerázové řetězové reakce. Přítomnost GM ve vzorcích rýže nebyla zjištěna. GM rýže není v EU povolena k uvádění na trh.

V roce 2014 bylo ve spolupráci s KHS Středočeského kraje odebráno celkem 19 vzorků pokrmů a výrobků z hovězího masa. Diagnostika byla zaměřena na detekci koňského masa. Ve třech případech byla přítomnost koňského masa prokázána v pokrmech z mletého masa, které bylo deklarováno jako hovězí. Provedené analýzy prokázaly, že koňské maso se v pokrmech stále vyskytuje i přes zavedení akčního plánu, který Evropská komise představila v březnu 2013 v reakci na odhalení rozsáhlé sítě podvodníků, kteří vydávali koňské maso za hovězí.

Další diagnostika byla zaměřena na detekci a identifikaci ryb čeledi treskovitých (*Gadidae*) a rodu štikozubec (*Merluccius* spp.) v pokrmech a výrobcích z mořských ryb. Ve spolupráci s KHS Středočeského kraje bylo celkem odebráno 57 vzorků pokrmů a výrobků z mořských ryb, deklarovaných jako treska (47 vzorků) nebo štikozubec (6 vzorků), případně rybí filé (4 vzorky). Treskovité ryby byly prokázány u 44 vzorků, štikozubec u pěti vzorků. U jednoho vzorku rybího filé byly prokázány treskovité ryby a u tří vzorků byl prokázán štikozubec. Další analýza spočívala v identifikaci jednotlivých druhů tresek, treska obecná (*Gadus morhua*), treska aljašská (*Theragra chalcogramma*) a treska tmavá (*Pollachius virens*). U jednoho vzorku deklarovaného jako treska aljašská nebyly prokázány ani treskovité ani štikozubec a stanovený obsah rtuti odpovídal spíše množství, které známe u sladkovodních ryb. U dvou vzorků deklarovaných jako treska aljašská byl detekován pouze štikozubec. U pěti vzorků deklarovaných jako treska aljašská byla také prokázána přítomnost i tresky obecné. Jeden vzorek deklarovaný jako treska modrá byl detekován jako treska obecná. Výsledky analýz zaměřených na falšování ryb potvrdily naši hypotézu, že dochází k záměně druhů ryb na trhu v ČR i v provozovnách společného stravování.

b.

Spolupracující organizace a odborníci

Státní zdravotní ústav, Centrum zdraví, výživy a potravin v Brně (Prof. MVDr. Jiří Ruprich, CSc., Doc. MVDr. Vladimír Ostrý, CSc., Ing. Veronika Kýrová, Ph.D., RNDr. Irena Řehůrková, Ph.D., Ing. Pavla Surmanová, Ivana Procházková), Krajská hygienická stanice Středočeského kraje se sídlem v Praze (Ing. Marie Jechová, Ing. Josef Hrdina, MBA, JUDr. Ivo Krýsa, Ph.D., LL.M.)

c.

Základní informace

V roce 2013 se do popředí zájmu kontrolních orgánů a veřejnosti dostalo závažné zjištění týkající se falšování potravin živočišného původu. Jednalo se o případy výskytu koňského masa v různých druzích pokrmů z hovězího masa v rámci EU včetně ČR. EU na uvedenou situaci zareagovala přípravou akčního plánu pro boj s podvodnými praktikami v oblasti potravin, který je realizovaný od roku 2014.

Uvedeným problémem se operativně začalo také zabývat Centrum zdraví, výživy a potravin SZÚ v Brně. Bylo rozhodnuto o restrukturalizaci studie „GENOMON“ a rozšíření řešeného tématu v zájmu mapování problematiky falšování potravin, ale i dalších aktuálních témat. Cílem této části monitoringu je reakce na zhoršující se situaci v oblasti falšování potravin a jejich hygienické kvality, která je nedílnou součástí „bezpečnosti potravin“ kontrolované OOVZ (typování námětů na kontrolní akce). Studie „HYGIMON“ je zaměřená na monitoring potravin „hygienicky závadných“ s využitím molekulárně-biologických metod (PCR). Jde zejména o:

- 1) detekce a identifikace GMO v potravinách
- 2) druhové falšování potravin a klamání spotřebitele

d.

Detekce a identifikace GMO

Ve studii jsme se zaměřili na průkaz GM rýže. Analýza kukuřičné mouky a potravin na bázi sóji byla ukončena, protože u vzorků s pozitivním výsledkem se jednalo o GMO povolené pro uvádění na trh.

Analýza byla provedena u vzorků rýže, které byly sváženy z 24 míst republiky (region A = Beroun, Písek, České Budějovice, Vlašim, Votice, Trhový Štěpánov, region B = Odolná Voda, Kostelec nad Labem, Líbeznice, Kladno, Jičín, Praha, region C = Ostrava, Litovel, Lutín, Slatinice, Chrudim, Šumperk, region D = Jihlava, Brno, Mikulov, Hrušovany nad Jevišovkou, Drnholec, Kyjov).

Použitá metoda

Metoda PCR

PCR metody slouží pro diagnostiku specifických sekvencí DNA. Tato metoda umožňuje in vitro zmnožení vybraného úseku DNA, který se nachází mezi dvěma místy o známé sekvenci nukleotidů. Jako cílová sekvence může vystupovat veškerá vnesená DNA – tj. promotor, samotný gen, terminátor nebo genový marker, použitý pro selekci transgenních organismů. V našem případě byla pro detekci geneticky modifikované rýže využita screeningová PCR metoda (35S promotor, NOS terminátor).

Zabezpečení kvality práce

Metody použité ve studii byly validovány. Zkoušky byly akreditovány u Českého institutu pro akreditaci (ČIA) podle normy ČSN EN ISO/IEC 17025. Metody jsou zpracovány do formy *Standardních operačních postupů (SOP)*. Při práci jsou používány certifikované referenční materiály, testovací materiály a laboratoř se pravidelně účastní mezinárodních mezilaboratorních porovnávacích zkoušek (GeMMA).

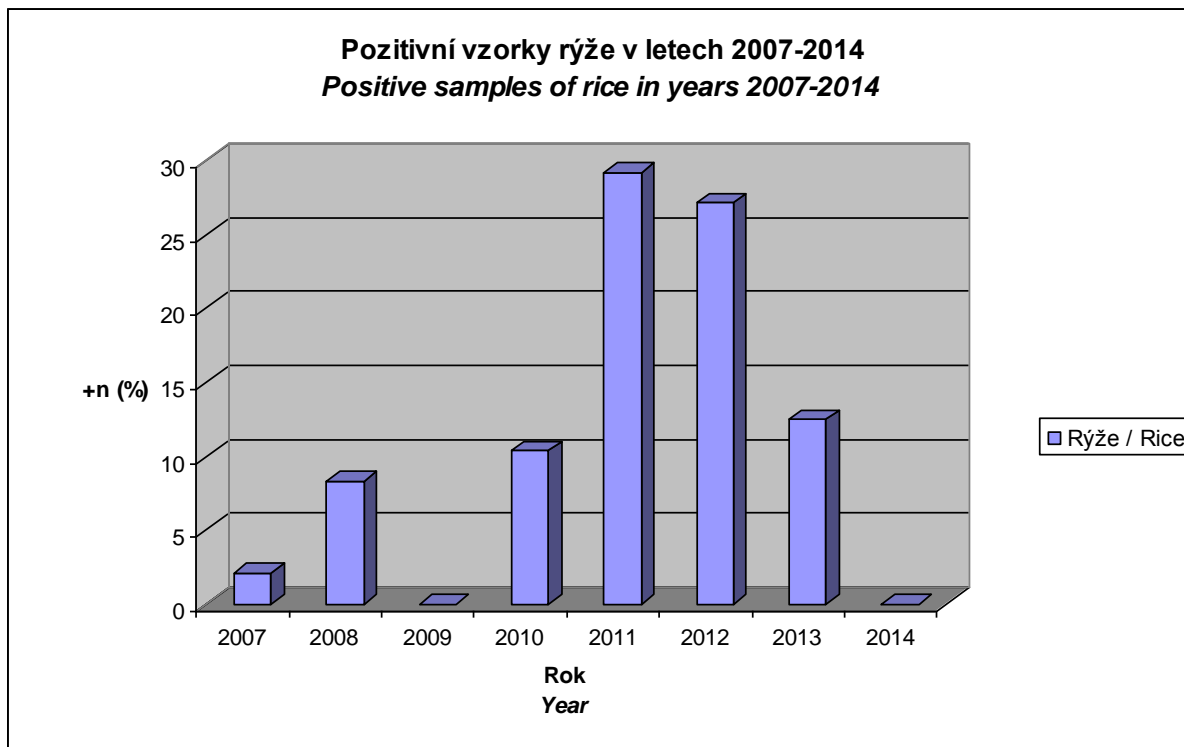
Strategie analytického postupu

Pro analýzu byla vybrána rýže, která podle informací z RASFF v posledních letech byla několikrát zachycena a v EU není povolena žádná GM rýže pro uvádění na trh. Vzorky rýže byly vyšetřeny pomocí screeningové PCR, zaměřené na obecně se vyskytující nové geny ve více typech GMO (35S promotor, NOS terminátor). Tento analytický postup umožňuje záchyt i nepovolených GMO.

Výsledky laboratorní analýzy

Celkem bylo v roce 2014 vyšetřeno 96 vzorků rýže. Vzorky byly vyšetřeny screeningovou metodou PCR (35S promotor, NOS terminátor) a přítomnost GM rýže ve vzorcích rýže nebyla touto metodou zjištěna. V průběhu sledovaného období došlo k poklesu výskytu GM rýže na trhu jak je vidět grafu (obr. 1).

Obr. 1



Závěr

GM rýže není v EU dosud povolena k uvádění na trh! Získané výsledky dokazují, že v průběhu dlouhodobého sledování dochází k poklesu výskytu příměsí nepovolené GM rýže v tržní síti v ČR. V průběhu roku 2014 nebyly publikovány žádné nové aktuální vědecké údaje, které by signalizovaly možná zdravotní rizika pro člověka při konzumaci potravin na bázi GMO. V ČR je povoleno uvádět do oběhu ty potraviny na bázi GMO, které jsou povoleny v EU, viz. příloha č. 1 (zdroj: http://ec.europa.eu/food/dyna/gm_register/index_en.cfm). Značení výrobků je povinné od 0,9% GM.

e.

Falšování potravin živočišného původu

Podvodné nebo nepřesné údaje o složení potravin jsou široce rozšířený problém, zejména v případě dražších potravin. Nejčastěji jde o nahrazení jednoho druhu/produktu podobným, ale lacinějším, méně kvalitním či snáze dostupným. V EU se jednalo o případy výskytu koňského masa v různých druzích pokrmů z hovězího masa. Do studie byla proto také zařazena detekce koňského masa.

Vzhledem k narůstajícímu zájmu spotřebitelů o mořské ryby, které jsou považovány za součást zdravé výživy, vyvstalo podezření, zda rovněž nedochází k jejich falšování, což je dobře známé ze zahraničí. Tresky jsou nejčastěji importovanou mořskou rybou do ČR. V roce 2014 bylo v rámci systému RASFF přijato několik hlášení týkajících se druhového falšování tresek. Vzhledem k těmto informacím byla další diagnostika zaměřena na falšování rybiho masa čeledi treskovitých (*Gadidae*) a detekci masa ryb rodu štikozubec (*Merluccius* spp.) v pokrmech a výrobcích z mořských ryb

Použitá metoda

Metoda PCR

Vzhledem k tomu, že byly analyzovány hlavně zpracované potraviny a pokrmy, u kterých není možné morfologické zkoumání, bylo proto nezbytné využití molekulárně biologických metod. Detekce koňského masa byla provedena za použití komerčního kitu kvalitativní metodou PCR. Pro důkaz čeledi treskovitých (*Gadidae*) v potravinách v syrovém stavu i tepelně upraveném byla provedena amplifikace genu mitochondriálního cytochromu b. Pro důkaz rodu štikozubec (*Merluccius* spp.), tresky obecné (*Gadus morhua*), tresky tmavé (*Pollachius virens*), tresky aljašské (*Theragra chalcogramma*) byla provedena amplifikace genu *pantophysin I* (*PanI*).

Zabezpečení kvality práce

Metody použité ve studii byly validovány. Zkouška pro detekci koňského masa byla akreditována u Českého institutu pro akreditaci (ČIA) podle normy ČSN EN ISO/IEC 17025. Metody jsou zpracovány do formy *Standardních operačních postupů (SOP)*. Při práci jsou používány testovací materiály a laboratoř se účastní mezinárodních mezilaboratorních porovnávacích zkoušek (FAPAS).

Strategie analytického postupu

Pro analýzu byly vybrány výrobky a pokrmy, u kterých je předpoklad výskytu koňského masa. Treskovité ryby byly vybrány k analýze, protože jsou nejčastěji imporovaným druhem ryb do ČR a vzhledem k dostupným informacím ze systému RASFF dochází také k druhovému falšování.

Výsledky laboratorní analýzy

V roce 2014 bylo ve spolupráci s KHS Středočeského kraje odebráno celkem 19 vzorků pokrmů a výrobků z hovězího masa. Diagnostika byla zaměřena na detekci koňského masa. Ve třech případech byla přítomnost koňského masa prokázána v pokrmech z mletého masa, které bylo deklarováno jako hovězí.

Další diagnostika byla zaměřena na falšování a detekci ryb čeledi treskovitých (*Gadidae*) a rodu štikozubec (*Merluccius* spp.) v pokrmech a výrobcích z mořských ryb. Ve spolupráci s KHS Středočeského kraje bylo celkem odebráno 57 vzorků pokrmů a výrobků z mořských ryb, deklarovaných jako treska (47 vzorků) nebo štikozubec (6 vzorků), případně rybí filé (4 vzorky). Treskovité ryby byly prokázány u 44 vzorků, štikozubec u pěti vzorků. U jednoho vzorku rybího filé byly prokázány treskovité ryby a u tří vzorků byl prokázán štikozubec. Další analýza spočívala v identifikaci jednotlivých druhů tresek, treska obecná (*Gadus morhua*), treska aljašská (*Theragra chalcogramma*) a treska tmavá (*Pollachius virens*). U jednoho vzorku deklarovaného jako treska aljašská nebyly prokázány ani treskovité ani štikozubec a stanovený obsah rtuti odpovídal spíše množství, které známe u sladkovodních ryb. U dvou vzorků deklarovaných jako treska aljašská byl detekován pouze štikozubec. U pěti vzorků deklarovaných jako treska aljašská byla také prokázána přítomnost i tresky obecné. Jeden vzorek deklarovaný jako treska modrá byl detekován jako treska obecná. U jednoho vzorku deklarovaného jako treska tmavá a dvou vzorků tresky obecné byly prokázány pouze treskovité. Podrobné výsledky jsou uvedeny v tabulce 1.

Tab. 1: Výsledky detekce čeledi treskovitých a štikozubce

Deklarováno jako	n	Výsledky detekce							
		G	Tc	Gm	Pv	Msp	Tc+Msp	Tc+Gm	Gm+Pv
Treskovité (G)	11	10	3	2	-	-	-	2	2
Treska aljašská (Tc)	22	19	12	-	-	2	1	5	-
Treska obecná (Gm)	7	7	-	3	-	-	-	-	-
Treska tmavá (Pv)	6	6	-	-	3	-	-	-	-
Treska modrá (Mp)	1	1	-	1	-	-	-	-	-
Štikozubec (Msp)	6	-	-	-	-	5	-	-	-
Rybí filé	4	1	-	-	-	3	-	1	-
Celkem	57	44	15	6	3	10	1	8	2

Závěr

Provedené analýzy prokázaly, že koňské maso se v pokrmech stále vyskytuje i přes zavedení akčního plánu, který Evropská komise představila v březnu 2013.

Výsledky analýz zaměřených na falšování ryb potvrdily naši hypotézu, že dochází k záměně druhů ryb na trhu v ČR i v provozovnách společného stravování. Nejčastějším důvodem pro falšování mořských ryb jsou důvody ekonomické, kdy je dražší druh (treska tmavá) zcela nahrazen nebo použit ve směsi s levnějším druhem ryb (treska aljašská, štikozubec). Do jisté míry lze očekávat i jiné nutriční složení a obsah škodlivin.

Falšování potravin je problém, se kterým je nutné stále počítat. Legislativa, kontrola dozorových orgánů, zdokonalování analytických metod pro průkaz falšování potravin jsou kroky vedoucí k ochraně spotřebitele.

Příloha č. 1

EU register of genetically modified food and feed

Genetically modified cotton			
Transformation event/ Unique ID/ Company	Genes Introduced / Characteristics	Authorized use	Authorization Expiration Date
Cotton (MON1445) MON-Ø1445-2 Monsanto	Genetically modified cotton that contains: cp4 epsps gene inserted to confer tolerance to the herbicide glyphosate nptII and aadA genes inserted as selection markers	Food produced from MON1445 cotton	26/04/2025
		Feed produced from MON1445 cotton	26/04/2025
Cotton (MON15985) MON-15985-7 Monsanto	Genetically modified cotton that contains: cry2Ab2 and cry1Ac genes which confer protection against certain lepidopteran pests uidA gene inserted as a selection marker nptII and aadA genes inserted as selection markers	Foods and food ingredients containing, consisting of, or produced from MON-15985-7 cotton	26/04/2025
		Feed containing, consisting of, or produced from MON-15985-7 cotton	26/04/2025
		Products other than food and feed containing or consisting of MON-15985-7 cotton for the same uses as any other cotton with the exception of cultivation	26/04/2025
Cotton (MON531) MON-ØØ531-6 Monsanto	Genetically modified cotton that contains: cry1A(c) gene inserted to confer insect-resistance nptII and aadA genes inserted as selection markers	Food produced from MON 531 cotton	26/04/2025
		Feed produced from MON 531 cotton	26/04/2025
Cotton (MON531 x MON1445) MON-ØØ531-6 x MON-Ø1445-2 Monsanto	Genetically modified cotton that contains: cry1A(c) gene inserted to confer insect-resistance cp4 epsps gene inserted to confer tolerance to the herbicide glyphosate nptII and aadA genes inserted as selection markers	Food produced from MON531 x MON1445 cotton	26/04/2025
		Feed produced from MON 531 x MON 1445 cotton	26/04/2025
Cotton (LLCotton25) ACS-GHØØ1-3 Bayer	pat gene inserted to confer tolerance to the glyphosate-ammonium herbicide	Foods and food ingredients containing, consisting of, or produced from ACS-GHØØ1-3 cotton (including food additives)	28/10/2018
		Feed containing, consisting of, or produced from ACS-GHØØ1-3 cotton (feed materials and feed additives)	
		Products other than food and feed containing or consisting of ACS-GHØØ1-3 cotton for the same uses as any other cotton with the exception of cultivation	
Cotton (GHB614) BCS-GHØØ2-5 [Bayer]	Genetically modified cotton that expresses: 2mepsps gene inserted to confer tolerance to the glyphosate herbicides	Foods and food ingredients containing, consisting of, or produced from BCS-GHØØ2-5 cotton (including food additives)	16/06/2021
		Feed containing, consisting of, or produced from BCS-GHØØ2-5 cotton (feed materials and feed additives)	
		Products other than food and feed containing or consisting of BCS-GHØØ2-5 cotton for the same uses as any other maize with the exception of cultivation	
Cotton (281-24-236x3006-210-23) DAS-24236-5xDAS-	Genetically modified cotton that expresses: cry1Ac and cry1F genes which provide	Foods and food ingredients containing, consisting of, or produced from DAS-24236-5xDAS-21Ø23-5 cotton (including food additives)	21/12/2021

21023-5 [Dow AgroSciences]	protection to certain lepidopteran pests pat gene inserted to confer tolerance to the glufosinate-ammonium herbicides	Feed containing, consisting of, or produced from DAS-24236-5xDAS-21023-5 cotton (feed materials and feed additives)	
		Products other than food and feed containing or consisting of DAS-24236-5xDAS-21023-5 cotton for the same uses as any other maize with the exception of cultivation	
Cotton (T304-40) BCS-GH004-7 [Bayer]	Genetically modified cotton which expresses: pat gene which confers tolerance to glufosinate-ammonium herbicides cry1Ab gene which confers protection against certain lepidopteran pests	Foods and food ingredients containing, consisting of, or produced from BCS-GH004-7 cotton	26/04/2025
		Feed containing, consisting of, or produced from BCS-GH004-7 cotton	26/04/2025
		Products other than food and feed containing or consisting of BCS-GH004-7 cotton for the same uses as any other cotton with the exception of cultivation	26/04/2025
Cotton (MON 88913) MON-88913-8 [Monsanto]	Genetically modified cotton that contains: cp4 epsps gene which confers tolerance to glyphosate-based herbicides	Foods and food ingredients containing, consisting of or produced from MON-88913-8 cotton	26/04/2025
		Feed containing, consisting of, or produced from MON-88913-8 cotton	26/04/2025
		Products other than food and feed containing or consisting of MON-88913-8 cotton for the same uses as any other cotton with the exception of cultivation	26/04/2025
Cotton (GHB614xLLCotton25) BCS-GH002-5xACS-GH001-3 [Bayer]	Genetically modified cotton which expresses: pat gene which confers tolerance to glufosinate-ammonium herbicides cp4 epsps gene which confers tolerance to glyphosate herbicides	Foods and food ingredients containing, consisting of, or produced from BCS-GH002-5xACS-GH001-3 cotton	26/04/2025
		Feed containing, consisting of, or produced from BCS-GH002-5xACS-GH001-3 cotton	26/04/2025
		Products other than food and feed containing or consisting of BCS-GH002-5xACS-GH001-3 cotton for the same uses as any other cotton with the exception of cultivation	26/04/2025

Genetically modified maize			
Transformation event/ Unique ID/ Company	Genes Introduced / Characteristics	Authorized use	Authorization Expiration Date
Maize (Bt11) SYN BT 011-1 Syngenta	Genetically modified maize that contains: cryIA (b) gene inserted to confer insect-resistance pat gene inserted to confer tolerance to the herbicide glufosinate-ammonium	Foods and food ingredients containing, consisting of, or produced from SYN-BT011-1xMON-00021-9	27/07/2020
		Feed containing, consisting of, or produced from SYN-BT011-1xMON-00021-9	
		Products other than food and feed containing or consisting of SYN-BT011-1xMON-00021-9	
Maize (DAS59122) DAS-59122-7 [Pioneer and Dow AgroSciences]	Genetically modified maize that contains: the cry34Ab1 and cry35Ab1 genes inserted to confer protection against certain coleopteran pests such as corn rootworm larvae (<i>Diabrotica</i> spp.) pat gene inserted to confer	Foods and food ingredients containing, consisting of, or produced from DAS	23/10/2017
		Feed containing, consisting of, or produced from DAS-59122-7 maize (feed materials and feed additives)	

	tolerance to the glufosinate-ammonium herbicide	Products other than food and feed containing or consisting of DAS-59122-7 maize for the same uses as any other maize with the exception of cultivation	
Maize (DAS1507) <u>DAS-01507-1</u> Pioneer and DowAgroSciences	Genetically modified maize that contains: cry1F gene inserted to confer resistance to the European corn borer and certain other lepidopteran pests pat gene inserted to confer tolerance to the herbicide glufosinate-ammonium	Foods and food ingredients containing, consisting or produced from DAS1507 maize (including food additives)	02/03/2016
		Feed produced from DAS1507 maize (feed materials and feed additives)	15/03/2016
		Feed produced from DAS1507 maize (feed materials and feed additives)	02/03/2016
		Other products containing or consisting of DAS1507 with the exception of cultivation	15/03/2016
Maize (GA21) <u>MON-00021-9</u> Monsanto	Genetically modified maize that contains: epsps gene inserted to confer tolerance to herbicide glyphosate	Foods and food ingredients containing, consisting of, or produced from MON-00021-9 maize (including food additives)	270/3/2018
		Feed containing, consisting of, or produced from MON-00021-9 maize (feed materials and feed additives)	
		Products other than food and feed containing or consisting of MON-00021-9 maize for the same uses as any other maize with the exception of cultivation	
Maize (MON810) <u>MON-00810-6</u> Monsanto	Genetically modified maize that contains: cryIA (b) gene inserted to confer resistance to lepidopteran pests	Foods and food ingredients produced from MON810 (including food additives)	Renewal of authorisation ongoing
		Feed containing or consisting of MON810 maize	Renewal of authorisation ongoing
		Pollen produced from MON810 maize	05/11/2023
		Feed produced from MON810 maize (feed materials feed additives)	Renewal of authorisation ongoing
		<u>Seeds for cultivation</u>	Renewal of authorisation ongoing
Maize (MON863) <u>MON-00863-5</u> Monsanto	Genetically modified maize that contains: a trait gene cry3Bb1 inserted to confer insect- resistance nptII gene inserted as a selection marker	Food containing, consisting of, or produced from MON 863 maize	12/01/2016
		Food additives produced from MON 863 maize	Renewal of authorisation ongoing
		Feed containing or consisting of MON 863 maize	12/02/2016
		Feed produced from MON 863 maize (feed materials and feed additives)	Renewal of authorisation ongoing
		Other products containing or consisting of MON863 with the exception of cultivation	12/02/2016
Maize (MON863 x NK603) <u>MON-00863-5 x MON-00603-6</u> Monsanto	Genetically modified maize that contains: cry3Bb1 gene inserted to confer protection against certain coleopteran pests cp4 epsps gene inserted to	Foods and food ingredients containing, consisting of, or produced from MON-00863-5xMON-00603-6 maize	01/03/2020
		Feed containing, consisting of, or produced from MON-00863-5xMON-00603-6 maize)	

	confer tolerance to glyphosate herbicides nptII gene inserted as a selection marker	Products other than food and feed, containing or consisting of MON-00863-5xMON-00603-6 maize for the same uses as any other maize with the exception of cultivation	
Maize (MON863 x MON810) MON-00863-5 x MON-00810-6 Monsanto	Genetically modified maize that contains: cry3Bb1 gene inserted to confer protection against certain coleopteran pests cry1Ab gene inserted to confer protection against certain lepidopteran insect pests nptII gene inserted as a selection marker	Foods and food ingredients containing, consisting of, or produced from MON-00863-5xMON-00810-6 maize Feed containing, consisting of, or produced from MON-00863-5xMON-00810-6 maize Products other than food and feed, containing or consisting of MON-00863-5xMON-00810-6 maize for the same uses as any other maize with the exception of cultivation	01/03/2020
Maize (NK603) MON-00603-6 Monsanto	Genetically modified maize that contains: cp4 epsps gene inserted to confer tolerance to the herbicide glyphosate	Foods and food ingredients containing, consisting of, or produced from MON-00603-6 maize Feed containing, consisting of, or produced from MON-00603-6 maize Products other than food and feed containing or consisting of MON-00603-6 maize for the same uses as any other maize with the exception of cultivation	26/04/2025 26/04/2025 26/04/2025
Maize (NK603 x MON810) MON-00603-6 x MON-00810-6 Monsanto	Genetically modified maize that contains: cp4 epsps gene inserted to confer tolerance to the herbicide glyphosate; cryIA (b) gene inserted to confer resistance to lepidopteran pests	Foods and food ingredients containing, consisting of, or produced from MON-00603-6xMON-00810-6 maize (including food additives) Feed containing, consisting of, or produced from MON-00603-6xMON-00810-6 maize (feed materials and feed additives) Products other than food and feed containing or consisting of MON-00603-6xMON-00810-6 maize for the same uses as any other maize with the exception of cultivation	23/10/2017 23/10/2017
Maize (T25) ACS-ZM003-2 Bayer	Genetically modified maize that contains: pat gene inserted to confer tolerance to the herbicide glufosinate-ammonium	Foods and food ingredients containing, consisting of, or produced from ACS-ZM003-2 maize Feed containing, consisting of, or produced from ACS-ZM003-2 maize Products other than food and feed containing or consisting of ACS-ZM003-2 maize for the same uses as any other maize with the exception of cultivation	26/04/2025 26/04/2025 26/04/2025
Maize (DAS1507xNK603) DAS-01507-1xMON-00603-6 Pioneer and Dow AgroSciences	Genetically modified maize that expresses: the Cry1F protein which confers protection against certain lepidopteran pests such as the European corn borer (<i>Ostrinia nubilalis</i>) and species belonging to the genus <i>Sesamia</i> , the PAT protein which confers tolerance to the glufosinate-ammonium herbicide the CP4 EPSPS protein which confers tolerance to the glyphosate herbicide	Foods and food ingredients containing, consisting of, or produced from DAS-01507-1xMON-00603-6 maize (including food additives) Feed containing, consisting of, or produced from DAS-01507-1xMON-00603-6 maize (feed materials and feed additives) Products, other than food and feed, containing or consisting of DAS-01507-1xMON-00603-6 maize for the same uses as any other maize with the exception of cultivation	23/10/2017

<p>Maize (MON88017) MON-88017-3 Monsanto</p>	<p>Genetically modified maize that contains: modified cry3Bb1 gene inserted to confer protection to certain coleopteran pests and cp4 epsps gene inserted to confer tolerance to glyphosate herbicides</p>	Foods and food ingredients containing, consisting of, or produced from MON-88017-3 maize (including food additives)	29/10/2019
		Feed containing, consisting of, or produced from MON-88017-3 maize (feed materials and feed additives)	
		Products other than food and feed containing or consisting of MON-88017-3 maize for the same uses as any other maize with the exception of cultivation	
<p>Maize (MON89034) MON-89034-3 Monsanto</p>	<p>Genetically modified maize that contains: cry1A.105 and cry2Ab2 genes inserted to confer protection to certain lepidopteran pests</p>	Foods and food ingredients containing, consisting of, or produced from MON-89034-3 maize (including food additives)	29/10/2019
		Feed containing, consisting of, or produced from MON-89034-3 maize (feed materials and feed additives)	
		Products other than food and feed containing or consisting of MON-89034-3 maize for the same uses as any other maize with the exception of cultivation	
<p>Maize (59122xNK603) DAS-59122-7xMON-00603-6 Pioneer</p>	<p>Genetically modified maize that contains: cry34Ab1 and cry35Ab1 genes inserted to confer protection against certain coleopteran pests pat genes inserted to confer tolerance to the glufosinate-ammonium herbicides cp4 epsps genes inserted to confer tolerance to glyphosate herbicides</p>	Foods and food ingredients containing, consisting of, or produced from DAS-59122-7xMON-00603-6 maize (including food additives)	29/10/2019
		Feed containing, consisting of, or produced from DAS-59122-7xMON-00603-6 maize (feed materials and feed additives)	
		Products other than food and feed containing or consisting of DAS-59122-7xMON-00603-6 maize for the same uses as any other maize with the exception of cultivation	
<p>Maize (MIR604) SYN-IR604-5 Syngenta</p>	<p>Genetically modified maize that contains: modified cry3A gene inserted to confer protection against certain coleopteran pests pmi gene inserted as selection marker</p>	Foods and food ingredients containing, consisting of, or produced from SYN-IR604-5 maize (including food additives)	29/11/2019
		Feed containing, consisting of, or produced from SYN-IR604-5 maize (feed materials and feed additives)	
		Products other than food and feed containing or consisting of SYN-IR604-5 maize for the same uses as any other maize with the exception of cultivation	
<p>Maize (DAS59122) DAS-59122-7 Pioneer and Dow AgroSciences</p>	<p>Genetically modified maize that contains: the cry34Ab1 and cry35Ab1 genes inserted to confer protection against certain coleopteran pests such as corn rootworm larvae (<i>Diabrotica</i> spp.) pat gene inserted to confer tolerance to the glufosinate-ammonium herbicide</p>	Foods and food ingredients containing, consisting of, or produced from DAS-59122-7 maize (including food additives)	23/10/2017
		Feed containing, consisting of, or produced from DAS-59122-7 maize (feed materials and feed additives)	
		Products other than food and feed containing or consisting of DAS-59122-7 maize for the same uses as any other maize with the exception of cultivation	
<p>Maize (MON863xMON810xNK603) MON-00863-5xMON-00810-</p>	<p>Genetically modified maize that contains: cry3Bb1 gene inserted to confer protection against certain</p>	Foods and food ingredients containing, consisting of, or produced from MON-00863-5xMON-00810-6xMON-00603-6 maize	01/03/2020

<p>6xMON-00603-6</p> <p>Monsanto</p>	<p>coleopteran pests cry1Ab gene inserted to confer protection against certain lepidopteran insect pests cp4 epsps gene inserted to confer tolerance to glyphosate herbicides nptII gene inserted as a selection marker</p>	<p>Feed containing, consisting of, or produced from MON-00863-5xMON-00810-6xMON-00603-6 maize</p> <p>Products other than food and feed, containing or consisting of MON-00863-5xMON-00810-6xMON-00603-6 maize for the same uses as any other maize with the exception of cultivation</p>	
<p>Maize (Bt11xGA21)</p> <p>SYN-BT011-1xMON-00021-9</p> <p>Syngenta</p>	<p>Genetically modified maize that expresses: the cry1Ab gene which confers protection against certain lepidopteran pests the pat gene which confers tolerance to the glufosinate-ammonium herbicides the mepsps gene which confers tolerance to glyphosate herbicides</p>	<p>Foods and food ingredients containing, consisting of, or produced from SYN-BT011-1xMON-00021-9</p> <p>Feed containing, consisting of, or produced from SYN-BT011-1xMON-00021-9</p> <p>Products other than food and feed containing or consisting of SYN-BT011-1xMON-00021-9</p>	<p>27/07/2020</p>
<p>Maize (MON88017xMON810)</p> <p>MON-88017-3xMON-00810-6</p> <p>Monsanto</p>	<p>Genetically modified maize that expresses: the cry1Ab gene which confers protection against certain lepidopteran pests the cry3Bb1 gene which provides protection to certain coleopteran pests the cp4 epsps gene which confers tolerance to glyphosate herbicides</p>	<p>Foods and food ingredients containing, consisting of, or produced from MON-88017-3xMON-00810-6</p> <p>Feed containing, consisting of, or produced from MON-88017-3xMON-00810-6</p> <p>Products other than food and feed containing or consisting of MON-88017-3xMON-00810-6</p>	<p>27/07/2020</p>
<p>Maize (MON89034 xNK603)</p> <p>MON-89034-3x MON-00603-6</p> <p>Monsanto</p>	<p>Genetically modified maize that expresses: the cry1A.105 and cry2Ab2 genes which provide protection to certain lepidopteran pests the cp4 epsps gene which confers tolerance to glyphosate herbicides</p>	<p>Foods and food ingredients containing, consisting of, or produced from MON-89034-3x MON-00603-6</p> <p>Feed containing, consisting of, or produced from MON-89034-3x MON-00603-6</p> <p>Products other than food and feed containing or consisting of MON-89034-3x MON-00603-6</p>	<p>27/07/2020</p>
<p>Maize (59122x1507xNK603)</p> <p>DAS-59122-7xDAS-01507xMON-00603-6</p> <p>Pioneer</p>	<p>Genetically modified maize that expresses: the cry1F gene which confers protection against certain lepidopteran pests the cry34Ab1 and cry35Ab1 genes which provide protection to certain coleopteran pests the pat gene which confers tolerance to the glufosinate-ammonium herbicides the cp4 epsps gene which confers tolerance to glyphosate herbicides</p>	<p>Foods and food ingredients containing, consisting of, or produced from DAS-59122-7xDAS-01507xMON-00603-6</p> <p>Feed containing, consisting of, or produced from DAS-59122-7xDAS-01507xMON-00603-6</p> <p>Products other than food and feed containing or consisting of DAS-59122-7xDAS-01507xMON-00603-6</p>	<p>27/07/2020</p>
<p>Maize (1507x59122)</p> <p>DAS-01507x DAS-59122-7</p>	<p>Genetically modified maize that expresses: the cry1F gene which confers</p>	<p>Foods and food ingredients containing, consisting of, or produced from DAS-01507x DAS-59122-7</p>	<p>27/07/2020</p>

<p>Pioneer</p>	<p>protection against certain lepidopteran pests the cry34Ab1 and cry35Ab1 genes which provide protection to certain coleopteran pests the pat gene which confers tolerance to the glufosinate-ammonium herbicides</p>	<p>Feed containing, consisting of, or produced from DAS-Ø15Ø7x DAS-59122-7</p> <p>Products other than food and feed containing or consisting of DAS-Ø15Ø7x DAS-59122-7</p>	
<p>Maize (MON89034 xMON88017) MON-89Ø34-3x MON-88Ø17-3 [Monsanto]</p>	<p>Genetically modified maize that expresses: cry1A.105 and cry2Ab2 genes which provide protection to certain lepidopteran pests cry3Bb1 gene which provides protection to certain coleopteran pests cp4 epsps gene which confers tolerance to glyphosate herbicides</p>	<p>Foods and food ingredients containing, consisting of, or produced from MON-89Ø34-3x MON-88Ø17-3 maize (including food additives)</p> <p>Feed containing, consisting of, or produced from MON-89Ø34-3x MON-88Ø17-3 maize (feed materials and feed additives)</p> <p>Products other than food and feed containing or consisting of MON-89Ø34-3x MON-88Ø17-3 maize for the same uses as any other maize with the exception of cultivation</p>	<p>16/06/2021</p>
<p>Maize (MIR604 xGA21) SYN-IR6Ø4-5 x MON-ØØØ21-9 [Syngenta]</p>	<p>Genetically modified maize that expresses: cry3A gene which provides protection to certain coleopteran pests mepsps gene which confers tolerance to glyphosate herbicides</p>	<p>Foods and food ingredients containing, consisting of, or produced from SYN-IR6Ø4-5xMON-ØØØ21-9 maize (including food additives)</p> <p>Feed containing, consisting of, or produced from SYN-IR6Ø4-5xMON-ØØØ21-9 maize (feed materials and feed additives)</p> <p>Products other than food and feed containing or consisting of SYN-IR6Ø4-5xMON-ØØØ21-9 maize for the same uses as any other maize with the exception of cultivation</p>	<p>21/12/2021</p>
<p>Maize (Bt11xMIR604) SYN-BTØ11-1 x SYN-IR6Ø4-5 [Syngenta]</p>	<p>Genetically modified maize that expresses: cry1Ab gene which provide protection to certain lepidopteran pests cry3A gene which provides protection to certain coleopteran pests pat gene which confers tolerance to the glufosinate-ammonium herbicides</p>	<p>Foods and food ingredients containing, consisting of, or produced from SYN-BTØ11-1xSYN-IR6Ø4-5 maize (including food additives)</p> <p>Feed containing, consisting of, or produced from SYN-BTØ11-1xSYN-IR6Ø4-5 maize (feed materials and feed additives)</p> <p>Products other than food and feed containing or consisting of SYN-BTØ11-1xSYN-IR6Ø4-5 maize for the same uses as any other maize with the exception of cultivation</p>	<p>21/12/2021</p>
<p>Maize (Bt11xMIR604xGA21) SYN-BTØ11-1xSYN-IR6Ø4-5xMON-ØØØ21-9 [Syngenta]</p>	<p>Genetically modified maize that expresses: cry1Ab gene which provide protection to certain lepidopteran pests cry3A gene which provides protection to certain coleopteran pests pat gene which confers tolerance to the glufosinate-ammonium herbicides mepsps gene which confers tolerance to glyphosate</p>	<p>Foods and food ingredients containing, consisting of, or produced from SYN-BTØ11-1xSYN-IR6Ø4-5xMON-ØØØ21-9 maize (including food additives)</p> <p>Feed containing, consisting of, or produced from SYN-BTØ11-1xSYN-IR6Ø4-5xMON-ØØØ21-9 maize (feed materials and feed additives)</p>	<p>21/12/2021</p>

	herbicides	Products other than food and feed containing or consisting of SYN-BT011-1xSYN-IR604-5xMON-00021-9 maize for the same uses as any other maize with the exception of cultivation	
<p>Maize (MIR162) SYN-IR162-4 [Syngenta]</p>	<p>Genetically modified maize that contains: vip3Aa20 gene inserted to confer insect-resistance</p>	Foods and food ingredients containing, consisting of, or produced from SYN-IR162-4	18/10/2022
		Feed containing, consisting of, or produced from SYN-IR162-4	
		Products other than food and feed containing or consisting of SYN-IR162-4	
<p>Maize (MON 89034×1507×MON88017×59122) MON-89034-3xDAS-01507-1xMON-88017-3xDAS-59122-7 and four related GM maizes combining three different single GM events: (MON89034×1507×MON88017) MON-89034-3xDAS-01507-1xMON-88017-3, (MON89034×1507×59122) MON-89034-3xDAS-01507-1xDAS-59122-7, (MON89034×MON88017×59122) MON-89034-3xMON-88017-3xDAS-59122-7, (1507×MON88017×59122) DAS-01507-1xMON-88017-3xDAS-59122-7 and four related GM maizes combining two different single GM events: (MON89034x1507) MON-89034-3xDAS-01507-1, (MON89034x59122) MON-89034-3xDAS-59122-7, (1507xMON88017) DAS-01507-1xMON-88017-3, (MON88017x59122) MON-88017-3xDAS-59122-7 [Monsanto and Dow AgroSciences]</p>	<p>Genetically modified maize that contains: Cry1A.105, Cry2Ab2, Cry1F genes inserted to confer protection against certain lepidopteran pests such as the European corn borer (<i>Ostrinia nubilalis</i>) and species belonging to the genus <i>Sesamia</i>, Cry3Bb1, Cry34Ab1 and Cry35Ab1 genes inserted to confer protection against certain coleopteran pests such as corn rootworm larvae (<i>Diabrotica</i> spp.) pat gene inserted to confer tolerance to the glufosinate-ammonium herbicide cp4 epsps gene inserted to confer tolerance to the glyphosate herbicide</p>	Foods and food ingredients containing, consisting of, or produced from the GMOs, specified in column 1 (including food additives)	05/11/2023
		Feed containing, consisting of, or produced from the GMOs, specified in column 1 (feed materials and feed additives)	
		Products, other than food and feed, containing or consisting of the GMOs, specified in column 1, for the same uses as any other maize, with the exception of cultivation	

<p>Maize (MON89034×1507×NK603)</p> <p>MON-89034-3×DAS-01507-1×MON-00603-6</p> <p>[Monsanto and Dow AgroSciences]</p>	<p>Genetically modified maize that contains:</p> <p>Cry1A.105, Cry2Ab2, Cry1F genes inserted to confer protection against certain lepidopteran pests such as the European corn borer (<i>Ostrinia nubilalis</i>) and species belonging to the genus <i>Sesamia</i>,</p> <p>pat gene inserted to confer tolerance to the glufosinate-ammonium herbicide</p> <p>cp4 epsps gene inserted to confer tolerance to the glyphosate herbicide</p>	<p>Foods and food ingredients containing, consisting of, or produced from MON-89034-3×DAS-01507-1×MON-00603-6 maize (including food additives)</p>	<p>05/11/2023</p>
		<p>Feed containing, consisting of, or produced from MON-89034-3×DAS-01507-1×MON-00603-6 maize (feed materials and feed additives)</p>	
		<p>Products, other than food and feed, containing or consisting of MON-89034-3×DAS-01507-1×MON-00603-6 maize for the same uses as any other maize with the exception of cultivation</p>	
<p>Maize (MON 87460)</p> <p>MON 87460-4</p> <p>[Monsanto]</p>	<p>Genetically modified maize that contains:</p> <p>cspB gene inserted to reduce yield loss caused by drought stress</p> <p>nptII gene inserted as selection marker</p>	<p>Foods and food ingredients containing, consisting of or produced from MON 87460-4 maize</p>	<p>26/04/2025</p>
		<p>Feed containing, consisting of, or produced from MON 87460-4 maize</p>	
		<p>Products other than food and feed containing or consisting of MON 87460-4 maize for the same uses as any other maize with the exception of cultivation</p>	

Genetically modified oilseed rape			
Transformation event/ <u>Unique ID/ Company</u>	Genes Introduced / Characteristics	Authorized use	Authorization Expiration Date
<p>Oilseed rape (GT73)</p> <p><u>MON-00073-7</u></p> <p>Monsanto</p>	<p>Genetically modified oilseed rape that contains:</p> <p>cp4 epsps and goxv247 genes inserted to confer tolerance to the herbicide glyphosate</p>	<p>Foods and food ingredients containing, consisting of, or produced from MON-00073-7 oilseed rape with the exception of isolated seed protein</p>	<p>26/04/2025</p>
		<p>Feed containing and consisting of GT73 oilseed rape</p>	<p>20/02/2017</p>
		<p>Feed produced from MON-00073-7 oilseed rape</p>	<p>26/04/2025</p>
		<p>Other products containing or consisting of GT73 with the exception of cultivation</p>	<p>20/02/2017</p>
<p>Swede-rape (MS8, RF3, MS8xRF3)</p> <p><u>ACS-BN005-8ACS-BN003-6ACS-BN005-8 x ACS-BN003-6</u></p> <p>Bayer</p>	<p>Genetically modified oilseed rape that contains:</p> <p>a bar (pat) gene inserted to confer tolerance to herbicides based on glufosinate ammonium</p> <p>barnase gene inserted to leads to lack of viable pollen and male sterility</p> <p>barstar gene inserted to leads to</p>	<p>Foods and food ingredients containing, consisting of, or produced from ACS-BN005-8ACS-BN003-6ACS-BN005-8 x ACS-BN003-6 oilseed-rape (including food additives)</p>	<p>24/06/2023</p>

	lack of viable pollen and male sterility	Feed containing or consisting of ACS-BN005-8ACS-BN003-6ACS-BN005-8 x ACS-BN003-6 oilseed- rape	24/05/2017
		Feed produced from ACS-BN005-8ACS-BN003-6ACS-BN005-8 x ACS-BN003-6 oilseed- rape	24/06/2023
		Other products containing or consisting of ACS-BN005-8ACS-BN003-6ACS-BN005-8 x ACS-BN003-6 oilseed- rape with the exception of cultivation	24/05/2017
Oilseed rape (T45) <u>ACS-BN008-2</u> Bayer	Genetically modified oilseed rape that contains: pat gene inserted to confer tolerance to the herbicide glufosinate-ammonium	Foods and food ingredients containing or produced from ACS-BN008-2 oilseed rape (including food additives)	09/03/2019
		Feed containing or produced from ACS-BN008-2 oilseed rape (feed materials and feed additives)	
		Products other than food and feed	
Oilseed rape (MON 88302) MON-88302-9 [Monsanto]	Genetically modified oilseed rape which expresses: cp4 epsps gene which confers tolerance to glyphosate herbicides	Foods and food ingredients containing, consisting of, or produced from MON-88302-9 oilseed rape	26/04/2025
		Feed containing, consisting of, or produced from MON-88302-9 oilseed rape	26/04/2025
		Products other than food and feed containing or consisting of MON-88302-9 oilseed rape for the same uses as any other oilseed rape with the exception of cultivation	26/04/2025

Genetically modified soybean			
Transformation event/ Unique ID/ Company	Genes Introduced / Characteristics	Authorized use	Authorization Expiration Date
Soya (MON40-3-2) <u>MON-04032-6</u> Monsanto	Genetically modified soya that contains: cp4 epsps gene inserted to confer tolerance to the herbicide glyphosate	Food containing, consisting of, or produced from MON 40-3-2 soybean (including food additives)	09/02/2022
		Feed containing or consisting of MON 40-3-2 soybean	
		Feed produced from MON 40-3-2 soybean (feed materials and feed additives)	
		Other products containing or consisting of MON 40-3-2 soybean with the exception of cultivation	
Soybean (A2704-12) <u>ACS-GM005-3</u> Bayer	Genetically modified soybean that contains: pat gene inserted to confer tolerance to the glyphosate-ammonium herbicide	Foods and food ingredients containing, consisting of, or produced from ACS-GM005-3 soybean (including food additives)	07/09/2018
		Feed containing, consisting of, or produced from ACS-GM005-3 soybean (feed materials and feed additives)	
		Products other than food and feed containing or consisting of ACS-GM005-3 soybean for the same uses as any other soybean with the exception of cultivation	
Soybean (MON89788) <u>MON-89788-1</u> Monsanto	Genetically modified soybean that contains: cp4 epsps gene inserted to confer tolerance to the herbicide glyphosate	Foods and food ingredients containing, consisting of, or produced from MON-89788-1 soybean (including food additives)	03/12/2018
		Feed containing, consisting of, or produced from MON-89788-1 soybean (feed materials and feed additives)	
		Products other than food and feed containing or consisting of MON-89788-1 soybean for the same uses as any other soybean with the exception of cultivation	

Soybean (MON87701) MON-87701-2 [Monsanto]	Genetically modified soybean that contains: cry1Ac gene inserted to confer protection against certain lepidopteran pests	Foods and food ingredients containing, consisting of, or produced from MON-87701-2 soybean (including food additives)	09/02/2022
		Feed containing, consisting of, or produced from MON-87701-2 soybean (feed materials and feed additives)	
		Products other than food and feed containing or consisting of MON-87701-2 soybean for the same uses as any other soybean with the exception of cultivation	
Soybean (356043) DP-356043-5 [Pioneer]	Genetically modified soybean that contains: gat gene inserted to confer tolerance to the herbicide glyphosate gm-hra gene inserted to confer tolerance to the ALS-inhibiting herbicide	Foods and food ingredients containing, consisting of, or produced from DP-356043-5 soybean (including food additives)	09/02/2022
		Feed containing, consisting of, or produced from DP-356043-5 soybean (feed materials and feed additives)	
		Products other than food and feed containing or consisting of DP-356043-5 soybean for the same uses as any other soybean with the exception of cultivation	
Soybean (A5547-127) ACS-GM006-4 [Bayer	Genetically modified soybean that contains: pat gene inserted to confer tolerance to the glufosinate-ammonium herbicide	Foods and food ingredients containing, consisting of, or produced from ACS-GM006-4 soybean (including food additives)	09/02/2022
		Feed containing, consisting of, or produced from ACS-GM006-4 soybean (feed materials and feed additives)	
		Products other than food and feed containing or consisting of ACS-GM006-4 soybean for the same uses as any other soybean with the exception of cultivation	
Soybean (MON87701 x MON89788) MON-87701-2 x MON-89788-1 [Monsanto]	Genetically modified soybean that contains: cry1Ac gene inserted to confer protection against certain lepidopteran pests cp4 epsps gene inserted to confer tolerance to the herbicide glyphosate	Foods and food ingredients containing, consisting of, or produced from MON-87701-2 x MON-89788-1 soybean (including food additives)	27/06/2022
		Feed containing, consisting of, or produced from MON-87701-2 x MON-89788-1 soybean (feed materials and feed additives)	
		Products other than food and feed containing or consisting of MON-87701-2 x MON-89788-1 soybean for the same uses as any other soybean with the exception of cultivation	
Soybean (MON 87705) MON-87705-6 [Monsanto]	Genetically modified soybean which contains: cp4 epsps gene inserted to confer tolerance to glyphosate herbicides fragments of FAD2-1A and FATB1-A genes resulting in inhibition of the expression of the FAD2-1A and FATB1-A genes by RNA interference (RNAi), which leads to an increased oleic acid and reduced linoleic acid	Foods and food ingredients containing, consisting of or produced from MON-87705-6 soybean	26/04/2025
		Feed containing, consisting of, or produced from MON-87705-6 soybean	26/04/2025
		Products other than food and feed containing or consisting of MON-87705-6 soybean for the same uses as any other soybean with the exception of cultivation.	26/04/2025
Soybean (MON 87708) MON-87708-9 [Monsanto]	Genetically modified soybean which expresses: DMO gene which confers tolerance to dicamba-based herbicides	Foods and food ingredients containing, consisting of or produced from MON-87708-9 soybean	26/04/2025
		Feed containing, consisting of, or produced from MON-87708-9 soybean	26/04/2025
		Products other than food and feed containing or consisting of MON-87708-9 soybean for the same uses as any other soybean with the exception of cultivation	26/04/2025

Soybean (MON 87769) MON-87769-7 [Monsanto]	Genetically modified soybean which expresses: Pj.D6D gene which results in conversion of linoleic acid to α -linolenic acid Nc.Fad3 gene which results in conversion of α -linolenic acid to stearidonic acid	Food containing, consisting of, or produced from MON-87769-7 soybean	26/04/2025
		Feed containing, consisting of, or produced from MON-87769-7 soybean	26/04/2025
		Products other than food and feed containing or consisting of MON-87769-7 soybean for the same uses as any other soybean with the exception of cultivation	26/04/2025
Soybean (305423) DP-305423-1 [Pioneer]	Genetically modified soybean which expresses: a fragment of the endogenous fad2-1 gene resulting, through RNA interference, in the silencing of the endogenous fad2-1 gene, which leads to an increased oleic acid and reduced linoleic acid Glycine max-hr gene which confers tolerance to acetolactate synthase-inhibiting herbicides	Foods and food ingredients containing, consisting of or produced from DP-305423-1 soybean	26/04/2025
		Feed containing, consisting of, or produced from DP-305423-1 soybean	26/04/2025
		Products other than food and feed containing or consisting of 305423-1 soybean for the same uses as any other soybean with the exception of cultivation	26/04/2025
Soybean (BPS-CV127-9) BPS-CV127-9 [BASF]	Genetically modified soybean which expresses: acetohydroxyacid synthase large sub-unit of Arabidopsis thaliana gene inserted to confer tolerance to the imidazolinone herbicides	Foods and food ingredients containing, consisting of, or produced from BPS-CV127-9 soybean	26/04/2025
		Feed containing, consisting of, or produced from BPS-CV127-9 soybean with the exception of forage	26/04/2025
		Products other than food and feed containing or consisting of BPS-CV127-9 soybean for the same uses as any other soybean with the exception of cultivation	26/04/2025

Genetically modified sugar beet			
Transformation event/ Unique ID/ Company	Genes Introduced / Characteristics	Authorized use	Authorization Expiration Date
Sugar beet (H7-1) KM-00071-4 KWS SAAT and Monsanto	Genetically modified sugar beet that expresses: a CP4 EPSPS protein confers tolerance to glyphosate containing herbicides	Foods and food ingredients produced from KM-000H71-4 sugar beet	23/10/2017
		Feed produced from KM-000H71-4 sugar beet	

Genetically modified microorganisms			
Transformation event/ Unique ID/ Company	Genes Introduced / Characteristics	Authorized use	Authorization Expiration Date
Bacterial biomass (pCABL- Bacterial biomass) Ajinomoto Eurolysine SAS	Bacterial protein, by-product from the production by fermentation of L-Lysine HCl obtained from (Brevibacterium lactofermentum) the recovered killed microorganisms. The source is the Brevibacterium lactofermentum strain SO317/pCABL	Feed produced from GMO bacteria: " bacterial biomass"	Renewal of authorisation ongoing

Yeast biomass <u>(pMT742 or pAK729-Yeast biomass)</u> NOVO Nordisk A/S	NOVO Yeast Cream is a product produced from genetically modified yeast strains (<i>Saccharomyces cerevisiae</i>) cultivated on substrates of vegetable origin. The source is the <i>Saccharomyces cerevisiae</i> strain MT663/pMT742 or pAK729	Feed materials produced from GMO yeast: "yeast biomass"	Renewal of authorisation ongoing
---	--	---	----------------------------------

Zdroj: http://ec.europa.eu/food/dyna/gm_register/index_en.cfm