

Food and feed components of 'Bud' products that are at risk of GMO contamination

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We consider organic food and feed components to be 'at risk of GMO contamination' when they

- are also cultivated in the form of genetically modified organisms (GMOs) in non-organic agriculture
- exist as genetically modified products or as products produced with the help of GMOs
- are microorganism/yeast cultures
- are non-organic ingredients, additives or processing aids that are permitted in the production of organic food as per CH organic regulations (appendix 3 of the Swiss EAER Ordinance on Organic Farming, SR 910.181)

Any use of food and feed components that are at risk of GMO contamination must comply with the current Bio Suisse standards, and the information given in the Bio Suisse information notes on GMOs must be followed. More information can be found in documents available on the [Bio Suisse website](#) under 'GMO':

- Information note '[Knospe ohne Gentechnik –die Sicherstellung](#)' / '[Le Bourgeon sans manipulations génétiques-la garantie](#)' (German and French only)
- Information note '[Preventing GMOs and GM derivatives in imported "Bud" products](#)'
- Interpretation of the ban on the use of genetic engineering in the production and processing of organic foods
- Form certifying GMO-free agriculture (InfoXgen form)

1. At-risk countries and crops for the production and importation of 'Bud' products

Bio Suisse regularly assesses the risk for 'Bud' products of GMO contamination or contamination with GM derivatives. This takes into account that genetically modified products are not only cultivated, but are also transported, stored and processed worldwide. Therefore, 'Bud' products also risk becoming commingled outside of those areas where genetically modified plants are cultivated.

In general, imported 'Bud' products should be tested if there is any suspicion of contamination with GMOs or GM derivatives. Bio Suisse requires a PCR test for certain countries and products.¹

A list of countries and crops that are deemed to be at risk due to the cultivation of genetically modified crops has been compiled based on information received from the Biosafety Clearing House (BSCH), ISAAA, and local experts (Table 1).

¹ See the Bio Suisse Standards, part V, appendix to section 1.8 or the information note '[Preventing GMOs and GM derivatives in imported "Bud" products](#)'

Table 1: List of countries and crops that are deemed to be at risk

| Countries and crops that are deemed to be at risk | | | | | | | | | | | | | | | | | | | |
|---|-------|-----|------|--------|------------|------|------------|---------|---------|---------|--------|--------|---------|--------|-----------|-------|------|--------|----------|
| | maize | soy | rape | papaya | sugar beet | rice | sugar cane | linseed | mustard | turnips | potato | squash | alfalfa | tomato | bentgrass | apple | plum | cotton | eggplant |
| Egypt | p | | | | | | | | | | | | | | | | | | |
| Argentina | xx | xx | | | | | | | | | | | | | | | | xx | |
| Australia | | | xx | | | | | | C | C | | | | | | | | xx | |
| Bangladesh | | | | | | | | | | | | | | | | | | | xx |
| Bolivia | | xx | | | | | | | | | | | | | | | | | |
| Burkina Faso | | | | | | | | | | | | | | | | | | p | |
| Brazil | xx | xx | | | | | x | | | | | | | | | | | xx | |
| Chile | xx | xx | xx | | | | | | C | C | | | | | | | | | |
| China | | | | xx | | xx | | | | | | | | | | | | xx | |
| Costa Rica | | xx | | | | | | | | | | | | | | | | xx | |
| EU | xx | | | | | | | | | | | | | | | | | | |
| Bulgaria | p | p | | | | | | | | | | | | | | | | | |
| Poland | p | | | | | | | | | | | | | | | | | | |
| Portugal | xx | | | | | | | | | | | | | | | | | | |
| Romania | | p | | | | | | | | | | | | | | | | | |
| Slovakia | p | | | | | | | | | | | | | | | | | | |
| Spain | xx | | | | | | | | | | | | | | | | | | |
| Czech Republic | p | | | | | | | | | | | | | | | | | | |
| Honduras | xx | | | | | | | | | | | | | | | | | | |
| India | | | | | | | | | | | | | | | | | | xx | |
| Indonesia | | | | | | | x | | | | | | | | | | | | |
| Canada | xx | xx | xx | | xx | | | (x) | C | C | | | xx | | | | | | |
| Colombia | xx | | | | | | | | | | | | | | | | | xx | |
| Cuba | p | | | | | | | | | | | | | | | | | | |
| Mexico | p | x | | | | | | | | | | | | | | | | xx | |
| Myanmar | | | | | | | | | | | | | | | | | | xx | |
| New Zealand | | | | | | | | | | | | | | | | | | | |
| Pakistan | | | | | | | | | | | | | | | | | | xx | |
| Paraguay | xx | xx | | | | | | | | | | | | | | | | xx | |

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|--------------|----|----|----|----|----|-----|--|-----|---|---|----|----|----|----|----|-----|-----|----|
| Philippines | xx | | | | | | | | | | | | | | | | | xx |
| South Africa | xx | xx | | | | | | | | | | | | | | | | xx |
| South Korea | | | | | | | | | | | | | | | | | | |
| Sudan | | | | | | | | | | | | | | | | | | xx |
| Taiwan | | | | | | | | | | | | | | | | | | |
| Thailand | | | | xx | | | | | | | | | | | | | | |
| Ukraine | x | x | | | | | | | | | | | | | | | | |
| Uruguay | xx | xx | | | | | | | | | | | | | | | | |
| USA | xx | xx | xx | xx | xx | (x) | | (x) | C | C | xx | xx | xx | xx | xx | (x) | (x) | xx |
| Hawaii | | | | xx | | | | | | | | | | | | | | |
| Vietnam | xx | | | | | | | | | | | | | | | | | |
| Swaziland | | | | | | | | | | | | | | | | | | xx |

xx = Cultivation; x = Cultivation probable; (x) = Approval available, but no cultivation known yet; p = Cultivation in the past; C = No cultivation, but cross-breeding with rape possible

Honey/ bees:

There are no GM bees. In Switzerland honey counts as an animal product and pollen does not count as an ingredient. Just as milk from cows that eat GM feed need not be declared as 'genetically modified', honey from bees that collected pollen from GM crops need not be declared. If pollen from GM plants is detected, its presence is considered adventitious, and the honey remains salable.

In the EU it is unclear how pollen should be dealt with. However, when pollen occurs in honey, the plants from which it is derived must be permitted as food in the EU.

The following also applies to organic beekeeping: Beehives must be situated in such a way that the nectar and pollen sources within a three-kilometre radius mainly consist of organically cultivated crops and/or spontaneous vegetation and/or crops treated with low environmental impact methods which cannot affect the organic status of the apiculture products.

In particular, there may be no cultivation of GM crops within a 3-km radius. These regulations do not apply when no plants are in bloom or when the beehives are dormant.

2. Vegetable raw materials used in 'Bud' products that are at risk of GMO contamination

Table 2 lists at-risk agricultural raw materials (maize/corn, soy and rape) that are used in 'Bud' products. The data are sourced from ISAAA Brief 51 (www.isaaa.org and www.biotradestatus.com).

A detailed summary of the data is available in German at: www.transgen.de.

Table 2: List of agricultural raw materials used in 'Bud' products that are at risk of GMO contamination

| Agricultural raw materials that are at risk of GMO contamination | |
|---|---|
| Products | Explanatory notes |
| Maize (corn) ² | <p>In 2018 nearly 30% of the maize grown worldwide was genetically modified (GM maize). GM maize was grown in the following countries, whereby the percentage of GM maize of the total amount of maize grown in each country is given in parentheses: Argentina (97%), Brazil (89%), Canada (100%), Philippines (50%), South Africa (90%) Paraguay (52%), Uruguay (88%), USA (92%). Further cultivation takes place in Honduras, Colombia and Vietnam. In Chile GM varieties are mainly grown for seed propagation. In Europe, GM corn is cultivated in Spain (35%) in Portugal (less than Spain). Other countries have stopped growing GM maize.</p> <p>The situation in Mexico, Ukraine, Cuba and some African countries is unclear. GM maize is presumably grown there as well.</p> <p>Sweet maize varieties are also grown in Argentina, Canada and the USA.</p> <p>In Europe, mixtures of organic products with GM products can occur in processing systems if maize gluten or grain maize is imported from GM cultivating countries at the same time, as the separation of GM products from non-GM products is not always ensured in conventional feedstuffs.</p> |
| Soy | <p>In 2018 78% of the soy grown worldwide was genetically modified. GM soy was mainly cultivated throughout the Americas, especially in Argentina (100%), Brazil (94%), Bolivia (100%), Canada (95%), Paraguay (96%), Uruguay (97%) and the USA (94%). It was also grown in South Africa (95%). It is grown in Costa Rica and Chile for seed propagation.</p> <p>The situation in Ukraine and Mexico is unclear, but GM soy is presumably grown there.</p> <p>No non-organic soy products are permitted in Bio Suisse products.</p> <p>In Europe organic products can become commingled with GM derivatives at processing operations because great amounts of GM soy and GM soy products (soybean press cake, soybean oil) are imported to Europe for animal feed or industrial purposes (biofuel). In the case of animal feed, GM products and non-GM products are not always kept strictly segregated.</p> |
| Rape | <p>In 2018 29% of the rape grown worldwide was genetically modified. GM rape was primarily grown in Canada (95%), Australia (24%) and the USA (100%).</p> <p>No genetically modified rape is cultivated in Europe.</p> <p>No non-organic rape products are permitted in Bio Suisse products.</p> <p>In Europe organic products can become commingled with GM derivatives at processing operations, but very little rape is imported from outside of Europe. When rape is grown in rotation with other crops such as wheat, rapeseed can occur as an impurity in uncleaned wheat.</p> <p>GM rape can cross-breed with mustard and turnips.</p> |

² Maize (corn) includes all forms of maize: silage maize, grain maize, maize gluten, maize starch.

3. Agricultural ingredients, straight feeds, additives and processing aids used in 'Bud' products that are at risk of GMO contamination

In the case of ingredients of agricultural origin and basic feed components for which there is a risk that genetically modified varieties were used, only certified organic ingredients may be used in 'Bud' products. The same rule applies to additives which have been physically extracted from agricultural products (e.g., fructose, wafers, rice and waxy maize starch, vegetable oils/maize-germ oil, rum [see sugarcane cultivation]) and at-risk straight feeds that are also derived from genetically modified plants. Genetically modified straight feeds which are permitted in Switzerland are given in the Swiss Federal Office for Agriculture Ordinance on GMO Feed Lists (SR 916.307.11). Additives and processing aids are at risk of GMO contamination when they are physically derived from non-organic agricultural products and are permitted for use in organic products.³ In the case of at-risk additives and processing aids as well as cultures, the manufacturer of a product must provide verification that it does not contain GMOs.

According to Bio Suisse standards these include:

- separating agents, glazing agents, antifoaming agents (vegetable oils)
- rennet and rennet substitutes
- organic acids (e.g., lactic acid, sodium citrate, citric acid, tartaric acid, sodium tartrate and potassium tartrate) in food and animal feed
- enzymes (e.g., pectinase, lactase, amylase, hemicellulase)
- microorganisms/pure cultured yeast/fungi (e.g., yogurt cultures and sour milk and kefir cultures, lactic acid bacteria, soy products, cultures for producing and curing cheese, washed-rind cultures, wine yeast, starter cultures for producing raw sausage, and cultures for producing fermented drinks and products)
- vitamins in feed (vitamins B2, B12, C, E and lysine)
- microorganisms and yeasts in animal feed
- lactic acid starter culture

The required InfoXgen form 'Declaration of compliance with the prohibition of genetically modified organisms as contained in the current version of Council Regulation (EC) No 834/2007', which also complies with the current version of the Swiss Ordinance on Organic Farming (SR 910.18), can be obtained from the Bio Suisse head office or downloaded from [the Bio Suisse website](#). It is not necessary to furnish verification that no GM derivatives were used in culture media for microorganisms.

Table 3 lists examples of 'Bud' products for which Bio Suisse permits the use of non-organic additives, processing aids and microorganisms, and for which an InfoXgen form confirming freedom from GMOs is required (the list is not complete). Bio Suisse may issue additional restrictions. If no declaration of assurance can be furnished, then the substance may not be used in 'Bud' products.

More information is available in the Bio Suisse Standards for the Production, Processing and Trade of 'Bud' Products.

Table 3: Examples of 'Bud' products for which Bio Suisse permits the use of non-organic additives, processing aids and microorganisms, and for which an InfoXgen form confirming freedom from GMOs is required (the list is not complete).

| Product group | Additives, processing aids and cultures |
|--|--|
| Fruit and vegetable products, including canned fruits and vegetables | Lactic acid (E270), citric acid (E330), fermentation starters |
| Breads, pastries and durable baked goods | Amylases, hemicellulases, the enzyme asparaginase, pure vegetable oils and fats as non-stick baking grease, citric acid (E330), tartaric acid (E334) and potassium tartrate for use as excipients in baking powder |
| Starches, gluten, grain syrups and starch sweeteners | Amylases, cellulases and citric acid (E 330) |

³ Cf. the Bio Suisse Standards, part III, section 1.6

| | |
|--|---|
| Fruit and vegetable juices, nectars and syrups | Fermentation starters, lactic acid (E270), citric acid (E330) Clarifying and fining agents: pectinase, hemicellulases, amylases |
| Jams and jellies | Citric acid (E 330), L(+)-tartaric acid (E 334), calcium citrate (E 333) |
| Wine and sparkling wine | Inactive yeast, pure cultured yeast, bacterial starter cultures, pectinases, tartaric acid (E334) |
| Fruit wine | Pure cultured yeast, pectinases |
| Distilled alcoholic beverages | Cultures/yeast (pure cultured yeast), lactic acid (E270), enzymes |
| Yeast and yeast products | Cultures, enzymes, lactic acid (E 270), citric acid (E 330) |
| Cold beverages made from tea, herbs, fruit and vegetables | Cultures for fermented beverages, lactic acid (E 270), citric acid (E 330) |
| Vinegar | Acetic acid bacteria, pectinases |
| Soy drinks and grain drinks | Cultures for fermented products, amylases |
| Tofu, tempeh and other products made of plant-based proteins | Cultures for fermented products |
| Soy sauce and liquid seasonings | <i>Aspergillus sojae</i> , <i>Pediococcus halophilus</i> , <i>Saccharomyces rouxii</i> |
| Bouillon | Enzymatically hydrolysed plant-based protein |
| Milk and dairy products | All cultures, rennet and rennet substitutes, enzymes Lactase |
| Yogurt and other fermented milk products | Yogurt, sour milk and kefir cultures, yeast |
| Cheese (fresh cheese, aged cheese and cheese products) | All cultures, rennet and rennet substitutes, lactic acid (E270), washed-rind cultures, wine yeast Citric acid (E 330) and sodium citrate (E 331) |
| Cream and cream products | Lactic acid bacteria Sodium citrate (E 331) |
| Whey cheese and mascarpone | Lactic acid (E 270) and citric acid (E 330) |
| Boiled egg products | Lactic acid (E 270) |
| Processed meat products | Lactic acid (E270), cultures, sodium citrate (E250) |
| Vegetable oils and fats (incl. margarine) | Citric acid (E 330) |
| Mayonnaise | Enzymatically modified egg yolk |
| Candy and sweets | Vegetable oils, calcium citrate (E 333), citric acid (E 330), tartaric acid (E 334), sodium tartrate (E 335), potassium tartrate (E 336), separating and glazing agents (vegetable fats and oils) |
| Animal feed | Spent grains/brewer's yeast, potato protein, maize gluten, vitamins and excipients in mineral feeds and supplementary feeds, organic acids |
| Crop protection and plant protection products | Effective microorganisms |