Decision chart for assessing residues and contaminants in Bud products

February 2024

The legal basis for assessing residues in organic products in Switzerland is the "Weisung zum Vorgehen bei Rückständen im Bio-Bereich" ("Directive on procedures in case of residue contamination in the organic sector", German only) issued by the Swiss Federal Office for Agriculture (FOAG) and the Swiss Federal Food Safety and Veterinary Office (FSVO). This decision chart illustrates Bio Suisse's stance on residues in Bud products and can serve as a guide for the assessment of residues.

Procedures if residues have been detected

- If residues exceed the intervention limit as defined by the "Weisung zum Vorgehen bei Rückständen im Bio-Bereich" ("Directive on procedures in case of residue contamination in the organic sector", German only) issued by the FOAG and the FSVO, the affected products must be temporarily suspended from trade.
- Notify Bio Suisse (residues@bio-suisse.ch) if
  - residues fall under category A–C according to this decision chart or residues exceed the intervention limit according to the directive issued by the FOAG and the FSVO, via the Notification form for residues in Bud products (German, French and Italian only).;
  - residues fall under category D according to this decision chart or residues are below the intervention limit according to the directive issued by the FOAG and the FSVO, but are greater than 0.001 mg/kg, via the Simplified notification form for residues in Bud products (German and French only).
  - Bio Suisse will confirm receipt of the notification form.
- Notify the certification body (CB) as prescribed by the agreement with the certification body via the Notification form for residues in Bud products or the Simplified notification form for residues in Bud products (German and French only).
- Licensee, Bio Suisse and certification body in or outside of Switzerland: implement measures according to Table 2.
- A second analysis or an additional representative (and independent) sampling and analysis may be helpful for the assessment.
- The certification body decides whether products may be traded as prescribed by the Organic Farming Ordinance (OFO), possibly in consultation with the responsible enforcement agency. The certification body's decision serves as the basis for trading under the Bud logo. In most cases, the decisions also apply to trade under the Bud logo, and it is not necessary for Bio Suisse to make a separate decision regarding trade.
- However, in individual cases and independent of decisions made by the certification body, Bio Suisse reserves the right to temporarily or permanently ban products from trade under the Bud logo and initiate investigations and measures on a case-by-case basis.
- Upon request, Bio Suisse will assist licensees, producers and certification bodies in handling, investigating and assessing incidents of residue contamination in Bud products.
- For questions, please contact Simone Hartong (simone.hartong@bio-suisse.ch or on +41 (0)61 204 66 52).

Bio Suisse's general stance on residues

As part of Bio Suisse's quality requirements, Bud products should contain no residues or as few traces of residues as possible. However, agricultural production is influenced by environmental factors. The environment is polluted by contaminants from traffic, industry and incineration. Furthermore, organic products are produced within the larger context of non-organic surroundings (e.g. in the vicinity of non-organic agricultural operations or operations that

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process both non-organic and organic products). Residues therefore cannot be entirely avoided. For these reasons, Bio Suisse believes a zero-tolerance policy towards residues would be unfair and counterproductive.
Bio Suisse assesses incidents of residue contamination in light of whether Bio Suisse standards were upheld and duty of care obligations were met. Should that be the case, then slight traces of residues in Bud products can be tolerated. In any case, potential measures for improvement must be assessed and implemented accordingly. Bio Suisse believes that declassification (i.e. rescinding organic certification) is only justified if there is evidence of violations of the Bio Suisse Standards, if duty of care obligations were not met and/or residue levels are high.
For further information, see the position paper entitled "Haltung von Bio Suisse zum Thema 'Rückstände'" ("Bio Suisse's stance on residues", German and French only).

Stance for assessing residues and contaminants in Bud products

The table below provides an overview of Bio Suisse's stance on assessing residue contamination in Bud products. This stance is based on many years of experience in residue case management and literature research. It takes into account both the high-quality standards of Bud products and unavoidable environmental influences. Exceptions are listed in Table 3 on page 7. Compliance with Bio Suisse Standards and internal monitoring is also required. In all cases, confirmation of the organic status by the certification body is required for trading under the Bud logo, possibly in consultation with the responsible enforcement agency. As a rule, the certification body's trade decision, which may be made in consultation with the responsible enforcement agency, also applies to trade under the Bud logo. However, in individual cases and independent of decisions by the certification body and the residue concentration, Bio Suisse reserves the right to temporarily or permanently ban products from trade under the Bud logo and initiate investigations and measures.

For food items intended for persons with special dietary requirements (e.g. infants and babies), the maximum levels of residue as given in the FDHA Ordinance on Foodstuffs for Persons with Special Dietary Requirements (SR 817.022.104 – Verordnung des EDI über Lebensmittel für Personen mit besonderem Ernährungsbedarf) apply.

Table 1: Bio Suisse's stance on assessing residue based on the residue concentration

Cat.	Relevant residue concentration[1]	Bio Suisse's stance on whether the product may be traded under the Bud logo	Measures
A	**Residue level ≥ tolerance threshold as prescribed by the PestRO[2]**	**These lots must not be traded under the Bud logo.[3]** Implement measures as prescribed by the responsible enforcement agency. For certain active ingredients, no specific tolerance threshold has been defined by the PestRO, and the standard tolerance threshold of 0.01 mg/kg applies. For others, depending on their approval status in Switzerland, a low tolerance threshold, e.g. of 0.01 mg/kg, has been defined. If in such cases it may be assumed that there was no improper use of plant protection products (e.g. in the case of pre-existing contamination), that there was no breach of duty of care obligations and that the detected concentration of the substance poses no health risk, Bio Suisse takes the stance that products containing such residues may reasonably be traded under the Bud logo in some cases. However, the certification body and/or responsible enforcement agency must examine the products and confirm that they can be traded and meet organic standards.	**According to Table 2 on page 5**
B	**0.02 mg/kg < residue level < tolerance threshold as prescribed by the PestRO**	**Trade under the Bud logo is possible in some cases.** The certification body will decide on a case-by-case basis, possibly in consultation	

[1] Relevant residue concentrations as defined in the "Weisung zum Vorgehen bei Rückständen im Bio-Bereich" ("Directive on procedures in case of residue contamination in the organic sector") issued by the FOAG and the FSVO for individual substances in raw products or as defined by the FDHA Ordinance on the Maximum Residue Levels for Pesticides in or on Products of Plant and Animal Origin (PestRO) (VPRH, SR 817.021.23). For exceptions and explanatory notes, please see page 7 of this document.

[2] PestRO: FDHA Ordinance on the Maximum Residue Levels for Pesticides in or on Products of Plant and Animal Origin (VPRH, SR 817.021.23); based on the EU Pesticides database.

[3] In the case of animal feed and seed, it may be possible to trade a product under the Bud logo even if the residue concentration is greater than the tolerance threshold defined by the PestRO, depending on the results of assessments made on a case-by-case basis.

		with the responsible enforcement agency. This decision usually applies equally for the Bud logo.	
C	**IL[4] < residue level ≤ 0.02 mg/kg**	**Trade under the Bud logo is possible in some cases.** The certification body will decide on a case-by-case basis, possibly in consultation with the responsible enforcement agency. This decision usually applies equally for the Bud logo. Many years of experience in assessing pesticide contamination in Bud products have led to the conclusion that residues of up to 0.02 mg/kg (actual measured value) were usually not due to improper use, but rather resulted from inadvertent contamination. In most cases, the exact cause of contamination cannot be determined or can only be surmised. If no suspicion exists that standards have been compromised, and if traceability is ensured, Bio Suisse sees no reason to rescind the Bud status of products containing residues of up to 0.02 mg/kg, provided that the certification body or the responsible enforcement agency has cleared their organic status. However, if necessary, measures to improve the prevention of residue contamination in future lots will be introduced.	
D	**0.001 mg/kg < residue level ≤ IL**	**Products retain Bud status.** Compliance with the provisions of the Organic Farming Ordinance is required in accordance with the responsible organic certification body, possibly in consultation with the responsible enforcement authority.	
E	**Residue level ≤ 0.001 mg/kg**	**Products retain Bud status.** Compliance with the provisions of the Organic Farming Ordinance is required in accordance with the responsible organic certification body, possibly in consultation with the responsible enforcement authority.	

[4] IL: Intervention limit as defined by the "Weisung zum Vorgehen bei Rückständen im Bio-Bereich" ("Directive on procedures in case of residue contamination in the organic sector") (FOAG/FSVO).

Measures to be taken in the event of contamination

The required measures given in the following table serve Bio Suisse in assessing residue contamination and devising measures to improve future deliveries.

Table 2: Measures to be taken by the licensee, Bio Suisse and the certification body in or outside of Switzerland

Cat.	Measures to be taken by the licensee	Measures taken by Bio Suisse	Measures to be taken by the certification body of operations in Switzerland	Measures to be taken by the certification body of operations outside of Switzerland
A	▪ Suspend trade of these and all other lots of the same origin (e.g. supplier, producer) in consultation with the responsible enforcement agency ▪ Notify Bio Suisse and the organic certification body (complete Notification form for residues in Bud products in full and also provide your own statement and a statement from the supplier) ▪ These lots must be recalled after consulting with the responsible enforcement agency.	▪ Provide confirmation of receipt to licensee ▪ If necessary, take measures to prevent future incidents of contamination in cooperation with the certification bodies	▪ Temporarily or permanently halt trade of the product, further lots and/or trade with the supplier ▪ Check traceability, source of contamination Compliance with duty of care obligations and measures to prevent future incidents of contamination as prescribed by the OFO	▪ Notify the inspection body outside of Switzerland ▪ Check traceability, source of contamination and compliance with duty of care obligations ▪ Take measures to prevent future incidents of contamination
B	▪ Suspend trade of these and, if applicable, all other lots of the same product and origin (e.g. supplier, producer) in consultation with the certification bodies ▪ Notify Bio Suisse and the organic certification body (complete Notification form for residues in Bud products in full and also provide your own statement and a statement from the supplier)	▪ Provide confirmation of receipt to licensee. ▪ If necessary, take measures to prevent future incidents of contamination in cooperation with the certification bodies	▪ Check traceability, source of contamination and compliance with duty of care obligations in accordance with the directive issued by the FOAG/FSVO, in consultation with the licensee, possibly in consultation with the certification body outside of Switzerland ▪ Temporarily or permanently halt trade of the product, further lots and/or trade with the supplier in consultation with the licensee in accordance with the directive issued by the FOAG/FSVO ▪ Make decision regarding trade (OFO and the Bud). ▪ If necessary, take measures to prevent future incidents of contamination.	▪ Check traceability, source of contamination, compliance with duty of care obligations and measures to prevent future incidents of contamination via the inspection body outside of Switzerland, possibly in consultation with the certification body in Switzerland ▪ If necessary, a statement on the clarification of causes in consultation with the certification body in Switzerland: incl. assessment of the organic status by the inspection body, results of the cause of contamination analysis, confirmation of traceability and compliance with internal monitoring

				▪ If necessary, take measures to prevent future incidents of contamination in consultation with Bio Suisse
C	▪ Suspend these lots in consultation with the certification body ▪ Notify Bio Suisse and the organic certification body (complete Notification form for residues in Bud products in full and also provide your own statement and a statement from the supplier)	▪ Provide confirmation of receipt to licensee. ▪ If necessary, take measures to prevent future incidents of contamination (e.g. in the event of multiple residues, recurrences or possible dilution) in cooperation with the certification bodies	▪ Check traceability, source of contamination and compliance with duty of care obligations in accordance with the directive issued by the FOAG/FSVO, in consultation with the licensee, possibly in consultation with the certification body outside of Switzerland ▪ Temporarily or permanently halt trade of the product, further lots and/or trade with the supplier in consultation with the licensee in accordance with the directive issued by the FOAG/FSVO ▪ Make decision regarding trade (OFO and the Bud). ▪ If necessary, take measures to prevent future incidents of contamination.	▪ If necessary, check traceability, source of contamination, compliance with duty of care obligations and measures to prevent future incidents of contamination via the inspection body outside of Switzerland, in consultation with the certification body in Switzerland ▪ If necessary, a statement on the clarification of causes in consultation with the certification body in Switzerland: incl. assessment of the organic status by the inspection body, results of the cause of contamination analysis, confirmation of traceability and compliance with internal monitoring
D	▪ Notify Bio Suisse (Simplified notification form for residues in Bud products, German and French only). ▪ Notify the organic certification body in accordance with any agreements.	▪ Provide confirmation of receipt to licensee. ▪ If necessary, take measures to prevent future incidents of contamination (e.g. in the event of multiple residues, recurrences or possible dilution) in cooperation with the certification bodies	▪ Check traceability and compliance with duty of care obligations in accordance with the directive issued by the FOAG/FSVO. ▪ If necessary, temporarily or permanently halt trade of the product in accordance with the directive issued by the FOAG/FSVO. ▪ Possibly make decision regarding trade (OFO and the Bud).	▪ If necessary, take measures to prevent future incidents of contamination (in consultation with Bio Suisse.)
E	▪ No notification to Bio Suisse is necessary. ▪ If necessary, notify the organic certification body in accordance with any agreements	▪ None	▪ As prescribed by the OFO.	▪ None

Exceptions and special cases
Table 3 shows Bio Suisse's stance on assessing exceptions and special cases. The procedures described below are based on the procedures given in Table 1 on page 3. If the tolerance threshold as prescribed by the PestRO is reached, then procedure A applies. The confirmation of organic status by the certification body (in consultation with the responsible enforcement agency, if necessary) serves as the basis for trading under the Bud logo. Their policies may differ from those of Bio Suisse.
Contamination that is subject to foodstuff legislation and does not violate any requirements of the Bio Suisse Standards must be assessed in terms of food safety by the responsible enforcement agency. More information about specific contaminants is provided in Table 3.

Dried products
To determine the relevant residue concentration in accordance with the FOAG and the FSVO directive, a corresponding processing factor should be applied to processed products, whereby the residue is recalculated to the base product or ingredient concerned. If, however, it is assumed that a residue has only originated after processing (e.g. storage protection agent, biocide), no processing factor is applied.

Multiple residues and recurrences
Residue cases should be assessed for an increased risk of breach of care obligations or a violation in cases where two or more substances or GMOs are detected at the same time or where there are recurrent residues in products of the same origin. However, the type and concentration of residues and their possible causes must also be taken into account in these cases. In the case of multiple residues and recurrences, the FOAG/FSVO directive provides for a case-by-case assessment.

Products from multiple producers/suppliers and multi-ingredient products
In the case of residues in products from multiple producers/suppliers or in multi-ingredient products, the risk of dilution of the residue concentration compared to the initial product and an associated increased risk of a breach of duty of care obligation or a violation should be examined. However, the type and concentration of residues and their possible causes must also be taken into account in these cases.

Table 3: Exceptions and special cases

Substance	Assessment according to Bio Suisse	Explanations/comments
Plant protection products permitted in organic farming (e.g. spinosad and azadirachtin)	Residue concentration < tolerance threshold, active ingredient as prescribed by the Input List of the FiBL for the crop is not permitted: procedure D; however, measures to prevent future incidents of contamination must be taken.	Applies to active ingredients permitted in accordance with the EAER Ordinance on Organic Farming (SR 910.181) and in accordance with applicable requirements in the country of origin. Not applicable to fumigant agents.
	Residue concentration < tolerance threshold, active ingredient as prescribed by the Input List of the FiBL for the crop is permitted: procedure E.	
1,4-Dimethylnaphthalene	As prescribed by the decision chart Table 1.	If DMN is detected, it must be clarified within the proportionality framework whether this is due to a natural content, to a contamination or to unauthorised use. For further information, see the Bio Suisse white paper entitled "Informationen und Stellungnahme zu Rückständen von Dimethylnaphthalin" ("Information and statement on residues of dithiocarbamates, German only).
Anthraquinone (in dried products such as herbs, teas and spices)	Anthraquinone ≥ 0.02 mg/kg: procedure B.	The following public statement was issued by the Bundesverband Naturkost Naturwaren e.V. (BNN) on the use of the BNN benchmark value for detected biphenyl and anthraquinone residues in organic herbs, spices, herbal teas and tea
	0.01 mg/kg < anthraquinone < 0.02 mg/kg: procedure C.	
	Anthraquinone ≤ 0.01 mg/kg: procedure D.	

		(*Camellia sinensis*): *in the opinion of the Scientific Advisory Board, levels of up to 0.02 mg anthraquinone per kilogramme of examined product can be considered accidental or unavoidable in terms of this statement* [1]. In cases where concentrations pose no health risk and there is no suspicion of improper usage, Bio Suisse is of the opinion that trade under the Bud logo is possible even in the event of higher concentrations.
Beeswax (not as a food additive) with residues of synthetic plant protection products	Residue concentration >0.5 mg/kg: procedure B Residue concentration ≤0.5 mg/kg: procedure D	If residues of plant protection products exceed 1 mg/kg in beeswax, there is an increased risk that the residues will pass into the honey. [16] With respect to a margin of safety, residues above 0.5 mg/kg must be clarified in more detail and the honey must be analysed . Residues in honey are assessed as prescribed by the decision chart Table 1. For thymol residues in beeswax, the following maximum tolerance thresholds apply: maximum tolerance threshold for thymol according to the OFO: 500 mg/kg maximum tolerance threshold for thymol according to Bio Suisse: 5 mg/kg No tolerance thresholds are regulated for other substances. The values in the FiBL information note "Anforderungen an die Bioimkerei" can serve as a guide. Residues of non-authorised acaricides and varroacides are assessed as prescribed by the decision chart Table 1.
Biphenyl (in dried products such as herbs, teas and spices)	Biphenyl ≥ 0.05 mg/kg: procedure B. IL < biphenyl < 0.05 mg/kg: procedure C. Biphenyl ≤ IL: procedure D.	The following public statement was issued by the Bundesverband Naturkost Naturwaren e.V. (BNN) on the use of the BNN benchmark value for detected biphenyl and anthraquinone residues in organic herbs, spices, herbal teas and tea (*Camellia sinensis*): *in the opinion of the Scientific Advisory Board, levels of up to 0.05 mg biphenyl per kilogramme of examined product can be considered accidental or unavoidable in terms of this statement* [1]. In cases where concentrations pose no health risk and there is no suspicion of improper usage, Bio Suisse is of the opinion that trade under the Bud logo is possible even in the event of higher concentrations.
Leaf analyses (not intended for human consumption)	As per Decision chart for assessing of residues on leaf material from Bud operations	Experience has shown that different values must be used for leaf samples than for foods (e.g. in the event of drift).
Bromide	5 mg/kg < bromide < tolerance threshold: procedure B. Bromide ≤ 5 mg/kg or chloride/bromide ratio > 50: procedure D.	Bromide levels under 5 mg/kg are assumed to be naturally occurring. Bromide levels higher than 5 mg/kg may also have natural causes. As a precaution, evidence must be furnished that neither soil sterilisation nor gasing has been carried out. Such evidence is not necessary for products that were grown, stored and processed in the EU.

		A documented elevated chloride/bromide ratio (approx. 50:1 or higher) suggests that the bromide may be naturally occurring, particularly in cases of former seabeds and areas in the immediate vicinity of the sea [2]. Elevated levels may naturally occur in herbs, spices, teas, brassicas and cep/porcini mushrooms [3]. Bio Suisse will decide on a case-by-case basis which measures listed under categories B and D are necessary.
Chlorate/perchlorate	Chlorate/perchlorate > 0.05 mg/kg: procedure B. IL < chlorate/perchlorate ≤ 0.05 mg/kg: procedure C.	Organic and non-organic products appear to be equally affected, which leads us to conclude that chlorate and perchlorate residues are a ubiquitous pollution that is not specific to organic production and does not constitute a violation of organic standards. The most probable cause of current chlorate and perchlorate residues is the use of chlorinated water or water containing environmental pollutants as irrigation water or for processing [4] [5]. Specific tolerance thresholds apply to chlorate [6] and perchlorate [7] in the EU since 2020. Switzerland has so far adopted the EU's tolerance thresholds for chlorate (last updated: December 2023).
Chlorpropham (germination inhibitor)	As prescribed by the decision chart Table 1.	Even if CIPC is no longer used today, dusts contaminated with CIPC may still be present in mixed storage operations. Experience has shown that even when duty of care obligations are met, unavoidable chlorpropham contamination of up to 0.1 mg/kg can occur. Bio Suisse recommends its "Merkblatt zur Vermeidung von Kontaminationen durch unerlaubte Keimhemmungsmittel auf Knospe-Kartoffeln und Knospe-Lagergemüse" ("Information note on preventing contamination of Bud potatoes and Bud stored vegetables from germination inhibitors", German and French only).
DEET in products from tropical countries	DEET > 0.1 mg/kg: procedure B. IL < DEET ≤ 0.1 mg/kg: procedure D.	DEET residues in products from tropical countries may be caused by protective measures against illnesses (e.g. mosquito repellents against malaria). This is not a violation of the Bio Suisse Standards, and levels of up to 0.1 mg/kg are therefore tolerated, provided that the measures listed in the Bio Suisse white paper entitled "Informationen und Stellungnahme zu Rückständen von DEET" ("Information and statement on residues of DEET", German only) are observed. Products that do not originate from tropical countries are assessed by Bio Suisse on a case-by-case basis and take into account the fact that DEET can also be used against pests such as ticks.
Dithiocarbamate	As prescribed by the decision chart Table 1.	Some plants contain naturally occurring sulphur or carbon-sulphur compounds that interfere with testing and may give the appearance that they contain dithiocarbamates. For example, this is the case with cabbage (brassicaceae) and leek varieties (allium species). This is taken into account during the assessment of residues.

		For further information, see the Bio Suisse white paper entitled "Informationen und Stellungnahme zu Rückständen von Dithiocarbamaten" ("Information and statement on residues of dithiocarbamates, German only).
Ethoxyquin dimer in fish meat	Ethoxyquin dimer > 0.02 mg/kg: procedure B. Ethoxyquin dimer ≤ 0.02 mg/kg: procedure D.	Experience has shown that even when duty of care obligations are met, unavoidable ethoxyquin contamination of up to 0.02 mg/kg can occur.
Fungicides in wine and wine grapes	Concentration of at least one active ingredient > 0.02 mg/l, sum of all active ingredients > 0.06 mg/l: procedure B. 0.01 mg/l < concentration of the active ingredients ≤ 0.02 mg/l, sum of all active ingredients > 0.03 mg/l: procedure C. Concentration of the active ingredients ≤ 0.01 mg/l and sum of all active ingredients ≤ 0.03 mg/l: procedure D.	Multiple residues occur more often in wine than in other products [8]. The benchmark values given here were derived from a comprehensive study [9]. Bio Suisse factors the respective drift situation into its assessment. Residues cannot always be entirely avoided. Slight traces of residues in Bud products can be tolerated, provided standards and duty of care obligations are met. Bio Suisse recommends the FiBL information note "Pestizidrückstände in Biowein: Wie vermeiden?" ("Avoiding pesticide residues in organic wine", German and French only).
Glyphosate	Glyphosate > 0.05 mg/kg: procedure B. 0.01mg/kg < glyphosate ≤ 0.05 mg/kg: procedure C. Glyphosate ≤ 0.01 mg/kg: procedure D.	This only applies to imports from North America. Due to the widespread use of glyphosate in non-organic agriculture, Bud products from North America may contain traces of glyphosate of up to 0.05 mg/kg as a result of technically unavoidable contamination [10].
GMOs (in imported products)	GMO level > 0.9% if approved GMOs, or 0.5% if tolerated GMOs: procedure A. 0.1% < GMO level ≤ 0.9% if approved, or 0.5% if tolerated: procedure B. GMO level ≤ 0.1 % if approved or tolerated GMOs: procedure E.	GMO residues are assessed according to the Feedstuffs Book Ordinance (FMV SR 916.307) and the FDHA Ordinance on Genetically Modified Foodstuffs (SR 817.022.51). In Switzerland there is a labelling requirement if the level of a permitted GMO exceeds 0.9%. Some GMOs are not permitted, but are tolerated up to a level of 0.5%. Bio Suisse applies these values as threshold values, provided that duty of care obligations (e.g. preventative measures, separation, etc.) are observed. Residues exceeding 0.1% require in-depth clarification. Traces of GMOs that are neither approved nor tolerated always require notification and are assessed by Bio Suisse on a case-by-case basis. Notifications to the certification body must be made in accordance with any agreements with the certification body. For further information, see the Bio Suisse web page on GMOs. Detailed information on authorised and tolerated GMOs in food can be found on the FSVO website. Detailed information on authorised and tolerated GMOs in feed can be found on the FOAG website (French and German only).
GMOs (in domestic products from field crops)	GMO level > 0.1%: procedure A. GMO level ≤ 0.1%: procedure D.	In Switzerland the current moratorium on the cultivation of genetically modified organisms (GMOs) allows for no coexistence. Therefore, the 0.1% limit for domestic products is also the threshold value applied by Bio Suisse. Notifications to the certification body must be made in accordance with any agreements with the certification body.

		For further information, see the Bio Suisse web page on GMOs.
Microbiological contamination	Assessment as prescribed by food laws and regulations.	These residues do not violate Bio Suisse Standards, but must be assessed in terms of food safety by the responsible enforcement agency. The FDHA Ordinance on Hygiene in the Handling of Foodstuffs (SR 817.024.1) (Hygieneverordnung EDI) applies.
Nicotine	Nicotine < maximum tolerance threshold in products other than tea (*Camellia sinensis*) and wild mushrooms from China (Yunnan): procedure D, however with review of measures for improvement Nicotine < maximum tolerance threshold in tea (*Camellia sinensis*) and wild mushrooms from China (Yunnan): procedure D	In the case of nicotine residues in tea (Camellia sinensis) from the Indian regions of Darjeeling and Assam, and Yunnan in China, and in the case of wild mushrooms from China (Yunnan) up to the MRL, it can be assumed that these are unavoidable contaminations from the air or via dust. The most likely cause is the nearby cultivation of tobacco. Bio Suisse therefore takes the stance that these products with residues up to the MRLs can be traded under the Bud logo. For other products, too, a direct application of nicotine cannot be assumed for residues up to the MRL. However, residues may originate from avoidable contamination. Bio Suisse's stance here is therefore that the products can be traded under the Bud logo, but that in any case, they should be reviewed in line with the measures for improvement for duty of care obligations, and these must be implemented accordingly. For further information, see the Bio Suisse white paper "Informationen und Stellungnahme zu Rückständen von Nikotin
Organochlorine pesticides in cucurbit crops	Residue concentration ≥ tolerance threshold: procedure A. Residue concentration < tolerance threshold: procedure D.	The main cause of organochlorine pesticides detected in cucurbit crops is attributable to pre-existing contamination of the soil [11]. In particular, the seeds and the oil are affected as organochlorine pesticides accumulate due to their chemical structure. This does not violate the Bio Suisse Standards. Therefore, residues of organochlorine pesticides from pre-existing contamination are tolerated up to the tolerance threshold. If necessary, measures for improvement must be defined and implemented.
Organochlorine pesticides in seeds of cucurbit crops (not intended for human consumption)	Typically procedure D.	The main cause of organochlorine pesticides detected in cucurbit crops is attributable to pre-existing contamination of the soil [8]. In particular, seeds are affected. This does not violate the Bio Suisse Standards. Organochlorine pesticide residues detected in seeds of cucurbit crops that are not intended for human consumption are therefore tolerated.
PCBs/dioxins	Assessment as prescribed by food laws and regulations.	These residues do not violate Bio Suisse Standards, but must be assessed in terms of food safety by the responsible enforcement agency. The FDHA Ordinance on the Maximum Levels for Contaminants (SR 817.022.15) (Kontaminantenverordnung, VHK) applies.
Permethrin in products from tropical countries	Permethrin > 0.04 mg/kg: procedure B. Permethrin ≤ 0.04 mg/kg: procedure D.	Permethrin residues in products from tropical countries may be caused by protective measures against malaria (e.g. mosquito repellents). This is not a

		violation of the Bio Suisse Standards, and levels of up to 0.04 mg/kg are therefore tolerated.
Phosphonic acid (phosphonate)	Phosphonic acid > 0.1 mg/kg for perennial crops, or 0.05 mg/kg for annual and biennial crops: procedure B. IL < phosphonic acid ≤ 0.1 mg/kg for perennial crops: procedure C. Phosphonic acid ≤ 0.05 mg/kg (IL): procedure D	Experience has shown that even when duty of care obligations are met, unavoidable phosphonic acid contamination can occur. According to the fact sheet published by the BNN: *If no fosetyl itself is detected, then there is no reasonable cause to suspect that the phosphonic acid detected is a result of unauthorised use of fosetyl-Al* [12]. However, this does not exclude the use or contamination of, or with, phosphonate. A clarification of causes and measures for improvement are also recommended for residues below 0.1 mg/kg or 0.05 mg/kg, respectively. For further information, see the Bio Suisse white paper entitled "Information and statement on phosphonate/phosphonic acid residues". The procedure (incl. notification) for confirming organic status must be carried out in accordance with the directive of the FOAG/FSVO, possibly in consultation with the certification body and, if necessary, the responsible enforcement agency. According to the directive of the FOAG/FSVO, an intervention limit of 0.05 mg/kg for unprocessed food/feed applies.
Phosphine, phosphane (PH_3)	0.02 mg/kg < phosphine < tolerance threshold: procedure B. 0.01 mg/kg < phosphine < 0.02 mg/kg: procedure C. 0.001 mg/kg < phosphine ≤ 0.01 mg/kg: procedure D; see, however, comments on the procedure according to the FOAG/ FSVO directive regarding the organic status	The procedure (incl. notification) for confirming organic status must be carried out in accordance with the directive of the FOAG/FSVO, possibly in consultation with the certification body and, if necessary, the responsible enforcement agency. It should be noted that according to the directive of the FOAG/FSVO, an intervention limit of 0.001 mg/kg applies to cereals, pulses and oilseeds (incl. sesame, poppy seeds, etc.). PH_3 levels of 0.001 to 0.005 mg/kg are regulated as special cases for these products according to the directive. The company concerned can decide for itself, by its own standards and based on internal monitoring or good manufacturing practice, whether the product is to continue being traded. Obligations such as notification and clarification of causes remain for the company. For residues above 0.005 mg/kg, a case-by-case assessment is carried out by the certification body, if necessary in consultation with the responsible enforcement agency. So far, our experience/investigations have concluded that there were no indications of unauthorised use for residues up to 0.01 mg/kg. Guidelines for good manufacturing practices with regard to phosphine residues in organic cereals ("Leitfaden GHP zu Phosphin-Rückständen bei Bio-Getreide", German and French only) can be accessed on the IG BIO website.
Phthalimide	As prescribed by the decision chart Table 1	Heat-dried products are particularly affected [13].

		When assessing phthalimide residues, Bio Suisse relies on the stance of the BNN and assumes that in most cases phthalimide residues are not degradation products of folpet or phosmet, but are due to the environmental contaminants phthalic acid or phthalic anhydride. These substances occur ubiquitously in the environment and can thus lead to unavoidable contamination. So long as standards are complied with, then slight traces of phthalimide residues in Bud products can be tolerated. In-depth clarifications on the possible use of folpet or phosmet are only necessary if one of these substances has been detected at least in traces [2]. Phthalimide can also be formed during the analysis. For further information, see the Bio Suisse white paper entitled "Informationen und Stellungnahme zu Rückständen von Phthalimid und «Folpet (Summe)»" ("Information and statement on residues of phthalimide and folpet (total)", German only).
Piperonyl butoxide	Piperonyl butoxide < tolerance threshold: typically procedure D.	Piperonyl butoxide is often added as a synergist to pyrethrum compounds to enhance the insecticidal effect. Residues in imported Bud products can result from proper use in the field or as a storage preservative. Residues in domestic Bud products can normally only result from proper use as a storage preservative. However, the use of pyrethrum compounds containing piperonyl butoxide is prohibited on agricultural operations. Measures for improvement must be examined and implemented.
Radioactivity (various radionuclides)	Radionuclides level > the tolerance threshold as prescribed by the FDHA or FSVO ordinances: procedure A. Radionuclides level ≤ the tolerance threshold as prescribed by the FDHA or FSVO ordinances: procedure D.	Bio Suisse has specific requirements regarding the testing of products which carry a heightened risk of contamination (see the Bio Suisse Standards, Appendix to part V, section 1.8) and "Analysis requirements for Bud products from areas that may be affected by nuclear reactor accidents". The following Swiss ordinances apply to the assessment of detected contamination: – Tolerance thresholds in the event of nuclear accidents or other radiological emergencies: FDHA Ordinance on the Maximum Levels for Contaminants (SR 817.022.15) (Kontaminantenverordnung, VHK) – Tolerance thresholds for food which is contaminated with caesium 134 and 137 as a result of the accident at the nuclear power plant in Chernobyl: FSVO Ordinance on the Importation and Placing on the Market of Food Which is Contaminated with Caesium as a Result of the Accident at the Nuclear Power Plant in Chernobyl (SR 817.022.151) (Chernobyl Ordinance) – Tolerance threshold for food items sourced from or originating in Japan: FSVO Ordinance on the Importation of Food Sourced from or Originating in Japan (SR 817.026.2)

Seed (not intended for human consumption)	Residue concentration > 0.02 mg/kg: typically procedure B.	Tolerance thresholds as prescribed by the PestRO do not apply to seed.
Heavy metals	Assessment as prescribed by food laws and regulations.	Heavy metal residues in food with the Bud logo do not violate Bio Suisse Standards, but must be assessed in terms of food safety by the responsible enforcement agency. External compost and solid recycled fertiliser must conform to the heavy metal concentration limit values set out in the Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles (SR 814.81, ORRChem).
Secondary plant substances (e.g. pyrrolizidine alkaloids and tropane alkaloids)	Assessment as prescribed by food laws and regulations.	These residues do not violate Bio Suisse Standards, but must be assessed in terms of food safety by the responsible enforcement agency. Specific tolerance thresholds have been established in the EU [14] [15].
Substances that require special sample preparation (e.g. hydrolysis)	If any of these substances are detected, an analysis must be conducted after previous acidic hydrolysis. The final assessment will depend on the results of this analysis.	These substances can only be partially detected by standard pesticide screening. In such cases, pesticide screening only indicates whether the substances are present or not. To determine the amount, the test must be repeated on specially prepared samples. This applies to the following active ingredients: 2,4-D, 2,4,5-T, 2-phenylphenol, acibenzolar acid, amitraz, bentazone, bifenazate, bromoxynil, captan, carbendazim, carbofuran, clethodim, clodinafop, cycloxidim, dalapon, daminozide, dazomet, dicamba, dichlorprop, diclofop, dinocap, dinoseb, dinoterb, dithiocarbamate, DNOC, ethofumesate, fenoprop, fenoxaprop-P, flufenacet, fluazifop, fluopyram, fluroxypyr, folpet, haloxyfop, isoxaflutole, ioxynil, MCPA, MCPB, mecoprop, meptyldinocap, phosphane, prochloraz, propachlor, pyridate, quizalofop and tepraloxydim. For further information, see the Bio Suisse information note entitled "Spectrum of analyses for detecting pesticide residues in organic products".
Synthetic antioxidants (SOX) in fish feed, fish meal and fish oil	3 mg/kg < total SOX level: procedure B. Total SOX level ≤ 3 mg/kg: procedure D.	Levels up to 3 mg/kg indicate contamination rather than added SOX in feed. Possible sources of contamination: – Certain vitamins (mainly vitamins A and D) are stabilised with SOX. From a nutritional point of view, these vitamin mixtures are indispensable in feed. – Cross-contamination can occur in organic feed, fish meal or fish oil if feed mills produce in both organic and non-organic quality. Organic and non-organic products are kept separated via temporal separation and appropriate cleaning procedures, purge batches, etc. However, despite such separation measures, undesired contamination can occur.

		For further information, see the Bio Suisse white paper entitled "Information and Bio Suisse's position on residues of synthetic antioxidants in fish and fish feed". SOX levels in fish meat are assessed as prescribed by the decision chart Table 1. This means that an orientation value of 0.01 mg/kg applies for SOX and 0.02 mg/kg for ethoxyquin dimer, a degradation product of SOX.

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