



# EVALUATION OF PESTICIDE RESIDUES IN BUD PRODUCTS

## Decision Chart as at 1.10.2010

Maximum residue level in raw product*	Evaluation for Bud marketing of that product	Measures to be taken by licensee	Measures to be taken by Bio Suisse
<b>A) FIV limit or maximum residue level exceeded</b>	<b>No marketing of the affected lots.</b>	<ul style="list-style-type: none"> <li>▪ Affected lots to be blocked</li> <li>▪ Other lots of same origin (supplier, producer) temporarily blocked and analyzed</li> <li>▪ Withdrawal of affected lots</li> <li>▪ Information to Bio Suisse</li> <li>▪ Information to organic certification body</li> <li>▪ When maximum residue levels exceeded, Information to responsible cantonal chemist</li> <li>• Request statement from supplier, trace back chain-of-custody &amp; look for source of contamination.</li> </ul>	<ul style="list-style-type: none"> <li>▪ First, temporarily bar supplier; ban lifted or final banning after clarification in each case</li> <li>▪ Check chain-of-custody, due diligence and contamination source</li> <li>▪ Measures to prevent future contaminationen</li> </ul>
<b>B) Exceeding 0.01 mg/kg up to FIV maximum residue level</b>	<b>No marketing of affected lots at present. Final decision by Bio Suisse.</b>	<ul style="list-style-type: none"> <li>▪ Temporarily block affected lots</li> <li>▪ Temporarily block other lots of same product and origin (supplier, producer)</li> <li>▪ Information to Bio Suisse</li> <li>▪ Information to organic certification body</li> <li>▪ Request statement from supplier, trace back chain-of-custody &amp; look for source of contamination</li> </ul>	<ul style="list-style-type: none"> <li>▪ First, temporarily bar the suppliers or the product; ban lifted or final banning after clarification in each case</li> <li>▪ Check chain-of custody, due diligence and contamination source</li> <li>• Measures to prevent future contaminationen</li> </ul>
<b>C) 0.01 mg/kg or less</b>	<b>Bud marketing possible</b>	<ul style="list-style-type: none"> <li>▪ Information to Bio Suisse and organic certification body</li> <li>▪ Request statement from supplier, trace back chain-of-custody &amp; look for source of contamination</li> </ul>	<ul style="list-style-type: none"> <li>▪ Check chain-of-custody, due diligence and contamination source</li> <li>▪ Measures to prevent future contaminationen</li> </ul>

Exceptions (cf. page 2): Bromides, Spinosad, Piperonyl butoxide (Pipox), Chlorpropham, Organo chlorine pesticides, products for protecting stored foodstuffs (Phosphine, Pyrethroids, Dichlorvos, Pirimiphos methyl etc.), residues in wine

FIV: Schweizerische Fremd- und Inhaltsstoffverordnung: Swiss ordinance on impurities and ingredients ([http://www.admin.ch/ch/d/sr/c817\\_021\\_23.html](http://www.admin.ch/ch/d/sr/c817_021_23.html))

\* Maximum residue level for single substances in raw product according to FIV definition (ordnance on impurities and ingredients, Appendix 1; Exceptions p.2 and Commentary p.3

**Exceptions** The substances listed below need special evaluation. The described procedure is based on the Decision Chart on page 1. If the FIV tolerance level (or maximum residue level) is reached the procedure will be as described in the chart.

Substance	Evaluation	Reasons/Remarks
<b>Bromides</b> (cereals)	▪ Bromide level over 10 mg/kg: Product cannot be marketed under the Bud label - procedure A)	Levels up to 5mg/kg are assumed to be have natural causes. Higher levels indicate the use of methyl bromide.  This level applies to cereals; other products – individual evaluation
	▪ Bromide level between 5 to 10 mg/kg: Analysis must be repeated and further lots of the same origin must be analyzed - procedure B)	
	▪ Bromide level below 5 mg/kg: no measures	
<b>Spinosad</b> and other auxiliary inputs approved for organic farming	▪ Spinosad < FIV max.residue level in crops where Spinosad is not permitted - procedure B	Spinosad is permitted for certain organic crops (in accordance with the list of auxiliary inputs approved by FiBL and Bio Suisse; and in the EU). Same procedure for all auxiliary inputs allowed in organic farming. Exception – storage protection products.
	▪ Spinosad < FIV tolerance level in crops where Spinosad is permitted - no measures	
<b>Piperonyl butoxide („Pipox“)</b>	▪ Piperonyl butoxide < FIV max.residue level in Swiss products - procedure B)	Pipox residues in <u>imported</u> Bud products may be attributed to compliant usage. Pipox residues in <u>local</u> Bud products can only be due to compliant use in storage protection. However, no pyrethrin products with piper-onyl butoxide are allowed to be used on farms. Find out origin of product.
	▪ Piperonyl butoxide < FIV max. residue level in imported products - procedure C)	
<b>Chlorpropham</b> (inhibits germination)	▪ Chlorpropham > 0.02 mg/kg - procedure B)	Bio Suisse information notes on avoiding contamination from products inhibiting germination.
	▪ Chlorpropham ≤ 0.02 mg/kg - procedure C)	
<b>Organo chlorine pesticides</b>	▪ In general, procedure B) (Bio Suisse will evaluate particular cases)	Imported Bud pumpkin seeds und pumpkin seed products – the described Bio Suisse procedure applies. Bud label qualification for imports depends on the analysis results (< 0.005 mg/kg). For Swiss gourd products, Bio Suisse recommends the FiBL information notes, “Avoiding pesticide residues in gourds”.
<b>Phosphine (PH<sub>3</sub>) in cereals</b>	▪ PH <sub>3</sub> > 1 µg/kg (foreign goods) - procedure B) plus informing cantonal chemist	If over 0.1 µg/kg is found in CH crops, the cantonal chemist will demand an explanation for the residues and proof of self-monitoring measures. PH <sub>3</sub> levels over 1 µg/kg will be disapproved by the cantonal chemist in each case. Imported cereals with levels between 0.1 and 1 µg/kg PH <sub>3</sub> will not be disapproved immediately if due diligence has been exercised and contamination is shown to have occurred abroad.
	▪ PH <sub>3</sub> > 0.1 µg/kg (local goods) - procedure B) plus informing cantonal chemist	
	▪ PH <sub>3</sub> < 1 µg/kg (foreign goods) – no measures, no informing	
<b>Storage protection products (Dichlorvos, Pirimiphos methyl, pyrethroids etc.)</b>	▪ Residue level < FIV max. residue level (also < 0.01 mg/kg levels!) – in general, procedure B)	Bio Suisse rules and regulations on the use of products for protecting stored foodstuffs are very strict. Contamination must be avoided.
<b>Fungicides in wine</b>	▪ Sum of all substance levels > 0.03 mg/kg or concentration of at least one substance > 0.01 mg/kg - procedure B)	Multiple residues occur more frequently in wines than in other products. An assessment level may be deduced from comprehensive FiBL studies. Bio Suisse recommends the FiBL information notes, “Can pesticide residues in organic wines be avoided?”
	▪ Sum of all substance levels < 0.03 mg/kg and concentration of the individual substances < 0.01 mg/kg - procedure C)	

# COMMENTARY AND BACKGROUND INFORMATION ON THE DECISION CHART

## Explanations

**The Decision Chart is intended as an aid for making decisions. All pesticide residues, heavy metal, pharmaceutical or other residues found in organic products will be investigated by the certification body and/or Bio Suisse in each case.**

### 1. Details of procedure for residue occurrence

#### The two most crucial points

1. All detected residues must be reported immediately to the certification body and Bio Suisse.
2. Every single residue occurrence will be investigated by Bio Suisse in collaboration with the inspection and certification bodies who will also decide what steps should be taken.

1. The residue occurrence is to be reported (through a complaint by a third party or as a result of compulsory self-monitoring) to your local certification body and Bio Suisse. Both certification body and Bio Suisse will come to an agreement on who will subsequently be responsible for which investigation.
  2. To describe the case with all the available information please use the 'Checklist Residue Report' (Bio Suisse Home Page Residues (Rückstände)). This will provide important details for evaluating the case.
  3. Prepare a statement on your position in the case and, should the residues be detected in delivered goods, request a statement from your supplier.
  4. A preliminary evaluation will then follow based on the Bio Suisse Decision Chart. Bio Suisse will decide on temporary bans on goods and processing works; and will also determine whether further investigations, opinions or exchange of information are required.
  5. By arrangement with licensee, certification body and Bio Suisse further information will be gathered on the causes, quantity of residue (reanalysis, further analyses of the lots concerned, retention samples, etc.), extent of the case (chain-of-custody analyses, investigation of primary suppliers, producers, buyers). The basis for an evaluation will then be worked out.
  6. Expert evaluation of the case based on the available information by Bio Suisse and specialists from the Research Institute of Organic Agriculture (FiBL); possibly with the support of other experts such as analysts, cantonal chemists, specialists in that particular sector.
- Together with the certification body and cantonal chemist Bio Suisse will decide on prohibiting or releasing the goods for Bud marketing. Withdrawal of goods: decision on information for the public with the manager and communication officer together with the firms involved. Ban on farm, processor and products: the licensee must inform its buyers.
8. Decision by Bio Suisse and certification body on possible sanctions, conditions recommendations and communication to the farms and businesses concerned.

### 2. Principles

By "undesirable residues" in Bud products we mean chemical-synthetic crop protection products, authorized auxiliary inputs in an unauthorized crop, pesticides used for protecting stored foodstuffs, chemicals present in the environment, heavy metals, radioactivity and pharmaceuticals.

Bio Suisse aims for as few residues as possible in Bud products. However, Bio Suisse does not guarantee completely residue-free foods, because this is neither sensible nor practicable. Residues may occur even where the standards and due diligence have been fully adhered to (e.g. through contaminated environment, previously contaminated soil, drift).

Due diligence requires residues to be avoided as far possible on all levels of the agricultural value added chain. In each residue case effective and viable measures will be assessed. Further information on the position of Bio Suisse towards residues can be found on the Bio Suisse home page residues (Rückstände).

### **Bio Suisse standards for residues**

The Bio Suisse standards for handling residues encompass the following rules:

*Article 2.3.4: The use of chemical-synthetic and genetically engineered crop protection products is prohibited. No residues of any such substances must be detected on produce, unless caused by general pollution of the environment. Plots which are exposed to strong immission levels of chemical-synthetic and genetically engineered crop protection products can be excluded from Bud marketing, or the LCP can impose measures for preventing such contamination. Authorized crop protection products are listed in Appendix 2 and are also laid down in the annually updated FiBL list of products authorized for use on farms.*

### **3. Detailed explanations of the Decision Chart**

**Residue level:** The residue level usually refers to the quantity on examined unwashed **raw products** (e.g. lettuce, beetroot, pumpkin seeds) per fresh weight. Multiple residues will be evaluated from case to case. Mixed samples including single samples of differing origins (e.g. from various producers) or from different lots will be evaluated individually.

**Processed foods:** All original products to be processed must fulfill the Bio Suisse requirements. Products which are diluted or concentrated during processing must comply with Bio Suisse standards in their original state. Should contamination occur after the first processing stage (e.g. storage protection), the original state of the product cannot be regarded as the source. For wines, the assessment value is given on page 2.

**Dried foods:** If contamination with pesticide residues on dried foods has occurred on the farm it will be traced back to the fresh weight of the produce. Exceptions are tea and spices which will be evaluated according to the assessment value of 0.01 mg/kg dry mass. Should residue contamination arise during drying, storage or from containers, the fresh weight will not be taken into account.

**Assessment value:** A residue level of 0.01 mg/kg was introduced by Bio Suisse as an assessment value based on years of experience with residues in organic products. Generally speaking, a residue level of less than 0.01 mg/kg does not indicate unauthorized use or violation of due diligence but rather an unintentional contamination.

**Analytical range of dispersion/inaccuracy:** Analytical range of dispersion will be considered in the evaluation of each case. Should the level measured in the laboratory minus a variable mean of approx. 50% be less than 0.01 mg/kg, procedure C) will normally apply (taking the FIV level into account).

#### **A) FIV levels (ordinance on impurities and ingredients) or MRL (Maximum Residue Levels) in the EU (red zone) exceeded**

- Foodstuffs with a residue level exceeding the set limits are not suitable for human consumption and in future will be banned from the market because they pose a health risk.
- The lots concerned cannot be marketed under the Bud label. These goods must be withdrawn. This also applies to goods that are already on sale in shops but which must then be withdrawn from the Bud market.
- Residue levels exceeding the set limits must be reported by the licensee to the responsible cantonal chemist (cf. BAG Information sheet Nr. 119: guidelines for the steps to be taken should it be proved or assumed that harmful foodstuffs or utensils have been supplied implementation of Art. 54 of the Swiss Ordinance on foodstuffs and objects of utility (LGV) SR 817.02).

#### **A) Maximum residue level according to the ordinance on impurities and ingredients (FIV) is exceeded (red zone)**

- Such foodstuffs will be regarded as contaminated or of inferior value.
- The affected lots cannot be marketed with the Bud label. These goods must be withdrawn. This also applies to foodstuffs already on sale in shops but which must then be withdrawn from Bud label marketing.

- Should no maximum level be stipulated by the FIV ordinance for the active agent found on a certain product, the following procedure must be followed:
  - Look for a comparable product in the FIV ordinance
  - Consult the MRL for the EU: [http://ec.europa.eu/sanco\\_pesticides/public/index.cfm](http://ec.europa.eu/sanco_pesticides/public/index.cfm)
  - Consult the MRL in the Codex Alimentarius:  
[http://www.codexalimentarius.net/mrls/pestdes/jsp/pest\\_q-e.jsp](http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp)
- The report to the cantonal chemist will follow via the certification body.

## **B) Residues in the orange zone between 0.01 mg/kg and maximum residue level according to the ordinance impurities and ingredients (FIV)**

If the residues are below the maximum residue level but over 0.01, in each case the causes will be investigated and whether both due diligence and the standards have been fulfilled. The following principles apply to Bio Suisse for deciding whether an organic product may still be marketed with the Bud label:

- The residues must be within the limits stipulated by the ordinance on impurities and ingredients (FIV) (if no FIV level is given, MRL = Maximum Residue Limit of the EU) or clearly below. Not only the analysis value is important but also the history of the product.
- The product must be produced in conformity with organic standards.
- The chain-of-custody from field to analyzed product must prove to be flawless.
- Compliance with the Swiss Ordinance on Organic Farming, the Bio Suisse standards and due diligence must be proven (quality assurance system documents, risk analyses (aids: checklists on the Bio Suisse home page), self-monitoring, statements by all participants in the chain.
- It must be shown that contamination prevention is diligently and acceptably implemented.
- Any further information for clarifying the possible residue causes must be made available (for instance, information on the use of fungicides by a non-organic neighbour, soil contamination with heavy metals, etc.).

If necessary, the Research Institute of Organic Agriculture (FiBL) or other experts can be asked to make an assessment of the detected active agents, possible causes and technical-analytical issues.

On the basis of this information the specialists in the quality assurance division of Bio Suisse will decide whether the residue is the result of unauthorized action or lack of diligence, or whether it is due to unavoidable contamination. All such clarification will take place by agreement and in collaboration with both Swiss and foreign inspection and certification bodies. Should these investigations fail to disclose any violation of due diligence by the farmer or processor, an organic product with traces within tolerated limits may still be marketed under the Bud label. In such cases, measures for improving the situation will be evolved together with the affected producers, processors and inspection body and possibly made compulsory. Bio Suisse reserves the right to withhold a Bud award in the following cases with residues between 0.01 mg/kg and the maximum residue limit:

- The organic product has a higher residue level than non-organic produce, where organic should be better.
- A delicate product which the consumer expects to be residue-free (e.g. dessert grapes are not always washed).
- The producer has been cautioned repeatedly but has not put the improvement measures into practice.
- Multiple residues (image).

**Improvement measures:** At the conclusion of each case measures will be formulated for improvements to ensure that similar problems will not occur again in the future. Such measures are prerequisite for the farm's continued Bud label product approval. Should the investigations indicate that auxiliary inputs prohibited in organic farming have been used, the farms responsible will be excluded from Bud marketing. If there has been inadequate separation or lack of diligence, the products can be prohibited or excluded from Bud marketing.

## **4. Reporting:**

- Report to the certification body: Under the terms of the contract all residue cases must be reported. The certification bodies are bound to inform the BLW (Swiss Federal Office for Agriculture) and the cantonal chemist.

- The certification body will inform the responsible cantonal chemist: immediately, when the maximum residue levels are exceeded immediately after certification, for all other residue cases
- Report to Bio Suisse: The licencing conditions require all residue cases to be reported to Bio Suisse.

## **5. Legal principles**

There are no legally binding limits for residues in organic products. The maximum levels stipulated in the ordinance on impurities and ingredients (FIV; SR 817.021.23) apply on principle to all foodstuffs, irrespective of the method of production. Nevertheless, cantonal chemists disapprove organic foods with high pesticide residues even if they are below the maximum FIV ordinance levels. These objections are based on the following:

- The Swiss Ordinance on Organic Farming SR 910.18: use of chemical-synthetic products is prohibited, only auxiliary inputs on the list of products approved for farms are allowed.
- Art. 4 of the law on Foodstuffs forbids misleading practices: in view of the standards consumers expect organic produce to be free of pesticides.
- Good production practice is expected together with contamination prevention in accordance with Art. 49 of the Swiss Ordinance on foodstuffs and objects of utility.

### **Interpretation Swiss Federal Office for Agriculture (BLW)**

In practice the cantons take a pragmatic course regarding solutions to pesticide residues in organic produce. In each case the cantonal chemist makes a thorough assessment: if the quantity of residue lies well below the maximum residue level tolerated by the ordinance on impurities and ingredients (FIV) and is due to unintentional contamination, then the product may be marketed as organic. The decisive factor is not the concentration of detected pesticides but rather the pre-history of that particular foodstuff. Where pesticides have been improperly used for an organic crop, that foodstuff will no longer be regarded as organic nor will it ever be so, not even when no further traces of the pesticide are detectable. Otherwise the consumer will be deemed to have been misled.