

BNN Orientation Value for pesticides¹ - A guideline to evaluate pesticide residues in organic products

Background

The BNN – Association of Organic Processors, Wholesalers and Retailers (in German: *Bundesverband Naturkost Naturwaren Herstellung und Handel e.V., BNN²*) adopted an orientation value for pesticides on April 3rd 2001. The *BNN* member companies were thus provided with a practical means of dealing with possible pesticide residues in organic products. Members of the *BNN*, operating as processors and wholesalers for organic food, have pledged to trade only those goods that comply with this guideline. This will be ensured by written confirmation from suppliers (i.e. specifications), laboratory analyses and other quality-assurance measures.

However, organic products cultivated according to the standards of organic farming are not always free of non-permitted substances. These substances are introduced into the food chain in many ways, for example, through environmental pollution of previous land use, spillover from conventional farms, through contamination with residues from processing machines, storage places, transport containers or packaging. For this reason means were sought to distinguish between pesticide findings resulting from unpredictable, unavoidable circumstances and those, which are the result of application of non-permitted substances or technically avoidable contamination.

After extensive questioning of the organic food sector's business community and taking into consideration the experience of residue analysis experts, the BNN orientation value was established as a practical and helpful support mechanism for decision-making. If the orientation value is exceeded, the member companies, operating as processors and wholesalers, are obliged to investigate (or have investigated) the sources of the pesticide findings and whether the relevant regulations on organic production were kept. This does not impact on the fundamental concept that organic foods are defined by their production processes and not by residue analysis. The orientation value is to be seen as an orientation and not as maximum allowable residue limit. It is not a matter of having a simple number but rather a guideline on how to deal with pesticide residues in organic products and how to evaluate them.

By complying with the orientation value, the justifiably high expectations of customers and end users will be met and the high awareness of quality of BNN member companies will be communicated to the wider public.

¹ The concept „pesticide“ and „plant protection agent“ are synonymous in the following text and stand for all chemical synthetic plant protection agents, insecticides, and agents used for pest control in storage

² In 2013 „BNN Einzelhandel“ and „BNN Herstellung und Handel“ allied as „BNN - Association of Organic Processors, Wholesalers and Retailers“

The classification of this guideline in relation to the Organic Regulation (EU) No. 2018/848 is described in Addendum 2.

BNN Orientation Value for Pesticides

1. Orientation Value

The Orientation value for each substance (active substance) is 0.010 mg/kg for each active substance (active substance as defined in the EU regulation 396/2005) and applies to the original unprocessed product (Primary product as defined in EC 178/2002).

If there is evidence that pesticide residue levels have been influenced by processing, e.g. by drying, extraction, hulling, the residue level must be calculated back to the original material, provided that sufficient data is available to allow this calculation. If there is evidence of post-harvest contamination or of pesticides used in storage, or mixing with non-organic product, the calculation may not be converted back to the original product. The measured value of the analysed laboratory sample must correspond directly to the orientation value in these cases.

No more than a total of two pesticides may be present. This applies only to substances with a residue level above or equal to 0.010 mg/kg (laboratory result without adjustment for analytical variance³, if applicable corrected with a processing factor. See “Examples of the use of the BNN orientation value for pesticides”).

2. Scope

The orientation value can be applied to all plant based foods, animal feed, over the counter medicines and health remedies from organic agriculture. This guideline is binding except when more restrictive legal regulations relating to food are in force.

The orientation value is in principle valid for all plant protection agents with the exception of substances listed in Appendix II of (EC) No. 889/2008 (the implementation rules of (EC) No. 834/2007) and the synergist Piperonyl Butoxide.

3. Evaluation

The analysed products can be placed on the market if (see 1. above)

- a) the requirements of the orientation value are met,
- b) not more than two substances are detected ($\geq 0,010$ mg/kg), and
- c) there is no further evidence that the legal regulations related to organic agriculture have been violated.

³ Analytical variance is used as a synonym for expanded measurement uncertainty since it is more readily understood

The evaluation according to BNN orientation value has to be related to the unprocessed original product. Analytical results for processed goods may have to be calculated back (see above) and if so the recalculated residue for each individual substance must be less than or equal to 0.010 mg/kg (see re-calculation factors for the BNN orientation value).

For multi-ingredient products, each individual ingredient must comply with the requirements of this guideline.

Goods that can meet the requirements of the orientation value only when taking into consideration the adjustment for analytical variance of 50% require increased attention with regard to compliance with the relevant regulations for organic agriculture.

If the orientation value is exceeded (laboratory result excluding the adjustment for analytical variance, and if applicable corrected with a processing factor is above 0.010 mg/kg), the member companies of the *BNN*, operating as processors and wholesalers, are obliged to initiate investigations as to where the residues originate from and whether the relevant legal provisions for organic farming have been violated.

Public statements and Interpretation guidelines

In the interpretation guidelines of the BNN orientation value, information on the following topics has been put together:

- Bromide detection in organic products
- Detection of Dithiocarbamates in organic products
- Phthalimide detection
- Metabolites (breakdown products)

When the orientation value is exceeded this is usually a singular isolated case and must be handled as such. As well as this, in special cases also for example contamination by general environmental pollution is causing the exceeding of the BNN orientation value related to a particular substance (pesticide) / product combination. Therefore the BNN publishes opinions on contamination where evidence is given for unavoidable, in particular through environmental pollution. These publications are part of generally applicable “public statements” (see Standing Orders for public statements on the use of the BNN orientation value for pesticides).

The interpretation guidelines and public statements are to be used in conjunction with the assessment of pesticide findings in organic products only as far as they are applicable in concrete cases.

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Addendum 1: Implementation Provisions

Concentration / Dilution

If residue content increases or decreases when the foodstuff is processed, the analysis is recalculated taking into consideration the increase or decrease due to processing.

Analytical variance

The analytical variance (expanded measurement uncertainty) always refers to the measured reading of the sample and can be taken into consideration when this is calculated.

Decimal Location

The measured reading (potentially adjusted on the basis of the analytical variance) is rounded to three places after the decimal (to 0.001 mg/kg exactly).

Addendum 2: Classification of the Guideline in relation to the Organic Regulation (EU) No. 2018/848 (valid from 01.01.2022)

The assessments, procedures and measures set out in this guideline on the BNN orientation value for pesticides are intended to provide guidance to operators on the presence of unauthorised substances and do not conflict with the requirements of Article 28(2) of the new Organic Regulation (EU) No 2018/848:

- Exceeding or failing to comply with the requirements of the BNN orientation value may give rise to a suspicion that the product concerned does not comply with Regulation (EU) No 2018/848. Article 1 of the Implementing Regulation (EU) 2021/279 shall be observed.
- If the operator can dispel the suspicion, the product concerned may be placed back on the market as an organic product in accordance with both Article 28(2)(c) of Regulation (EU) No 2018/848 and the guideline on the BNN orientation value.
- If the checks carried out reveal that the suspicion is well-founded or cannot be eliminated, the appropriate steps shall be taken in accordance with Art. 28(2) of Regulation (EU) No 2018/848: Blocking of the goods, immediate information of the control body and, if applicable, of the food control authority as well as cooperation with the control body and the authority in the subsequent checks.
- If the subsequent official inspection concludes that the integrity of the product is given (Art. 2 Implementing Regulation (EU) 2021/279), then it is tradable - also in accordance with the requirements of the BNN orientation value for pesticides.

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