

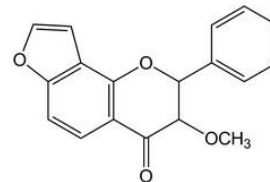
**Association of Organic Food Processors (AöL) – Information for Members**  
**Version dated 30/07/2021**

## Karanjin – residues

AöL-Information about karanjin residues  
in organic food

### 1. Problem/Starting point

Karanjin is a secondary plant compound (flavonoid) that occurs naturally in the seeds of the karanja tree of the genus *Pongamia glabra* (*legume family*). This tree grows wild in southern India. The extract from its seeds (karanjin oil) is used in traditional folk medicine for pharmaceutical purposes but can also be used as an insecticide and an acaricide.



Karanjin can be regarded as a close 'relative' of azadirachtin (neem tree oil) and matrine (sophora flavescens) - two substances with known insecticidal properties. In India, the active ingredient karanjin is therefore used as a component of herbicides and as a fertiliser (especially in the organic sector). You will find the examples of products [1] in the following Literature & References section.

More recently, formulations of karanjin as a herbicide appear to have reached the black market in Europe where residual traces have been getting detected in European vegetables since March 2021.

### 2. Toxicology

In India, karanja oil is known for its therapeutic properties as an antiseptic and has been used for centuries in traditional Indian medicine. Toxicology data such as ARfD or ADI values are not available so it is not possible to assess the residues detected in food products.

### 3. Pathways

#### Accidental forms of introduction

Karanjin has already been detected in fertilisers (karanja cake) as an undeclared component. In these cases, the active ingredient has entered the crop being cultivated accidentally.

#### Targeted application

In the EU, its use as an insecticide and acaricide is prohibited in conventional as well as in organic farming.

### 4. Analytical aspects

Karanjin can be routinely analysed in food residue laboratories equipped for this purpose. Verification involves the standard multi-methods (e.g. QuEChERS) using LC-MS/MS. The detection limit is 0.01 mg/kg.

### 5. Legal aspects

Karanjin has an insecticidal and acaricidal action and is permitted in a third country (Vietnam) as a pesticide. It therefore falls within the scope of EC regulation no. 396/2005. It is not authorised for use in the EU. Therefore the determination level of 0.01 mg/kg should be applied as a maximum content. Consequently, its use is prohibited, also under German legislation governing organic farming, and EU implementation regulation 2019/2164 by COM in Appendix II – Pesticides in acc. with Art. 5 (1) [3].

### 6. Recommendation / Summary

Very recently, karanjin, as a natural component of the seed of the karanja tree, has been found as an active substance with insecticidal and acaricidal action in herbicides and fertilisers, and as a residue in vegetable crops from southern Europe. Since the use of karanjin is prohibited in der EU, the contents in food are assessed at a determination level of 0.01mg/kg. In this situation, we therefore advise agricultural producer businesses not to use products containing karanjin under any circumstances. If any is detected, this can revoke the recognition of an organic product. If the level detected, with due reference to the extended measuring uncertainty, should amount to > 0.01 mg/kg, the product is not eligible for trade under the provisions of EC regulation no. 396/2005 [2]. In the event of any being detected in your product, the declaration on the means of production must be examined to establish it, in the absence of disclosure, the means of production can be examined for karanjin content.

## 7. Literature & References

- [1] <http://kvnaturals.com/karanjin.html>,  
<https://www.ozonebiotech.com/de/karanjaoil.html>,  
<https://www.indiamart.com/proddetail/derisom-karanjin-biopesticide-4203946755.html>
- [2] [EC regulation no. 396/2005](#) of the European Parliament and Council dated 23 February 2005 in relation to the maximum contents of pesticide residues in or on foods and feed of plant and animal origin...
- [3] [Implementation regulation \(EU\) 2019/2164 of COM](#) dated 17 Dec. 2019 by way of derogation from EC regulation no. 889/2008 with provisions for implementation of EC regulation no. 834/2007

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### AöL information

The Association of Organic Food Processors [*Assoziation ökologischer Lebensmittelhersteller (AöL)*] is a consortium of more than 120 companies involved in the food business. Its European members generate annual bio-sales revenues in excess of four billion euro. Their work focuses on the representation of their interests at a political level and the promotion of dialogue and cooperation between its members.

This information was produced with the collaboration of the Scientific Committee of the AöL.

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