



## Environment

This article is more than 2 years old

## Fish feed additive banned in EU found in Tasmanian salmon at concerning levels, researchers say

Experts call for tighter regulations as tests find ethoxyquin exceeds maximum limits in Tassal and Petuna salmon

Get our [morning](#) and [afternoon](#) news emails, [free app](#) or [daily news podcast](#)

Donna Lu

Wed 26 Oct 2022 05.00 EDT

Share



The European Commission suspended the use of ethoxyquin as a feed additive in 2017, as 'experts could not conclude on the safety of the additive'. Photograph: Bloomberg/Getty Images

A fish feed additive banned in the European Union out of concerns for health impacts in animals and humans has been found in Tasmanian salmon at concerning levels, say experts who are calling for tighter regulations.

Dr Christian Narkowicz, an organic chemist, last year commissioned the National Measurement Institute to test salmon for residues of ethoxyquin.

The compound, a synthetic antioxidant, was developed by Monsanto in the 1950s. It has been used to prevent fish meal from spontaneously combusting while being transported at sea.

The national regulator, the Australian Pesticides and Veterinary Medicines Authority, has set a maximum residue limit for ethoxyquin of 1mg per kilogram of salmon.

The testing commissioned by Narkowicz found that ethoxyquin levels in three brands of Tasmanian salmon were within the maximum residue limits. However, it found that in Tassal and Petuna salmon there were significant levels of ethoxyquin dimer - two ethoxyquin molecules joined together - which forms as the additive undergoes chemical changes.

In the Tassal sample, the ethoxyquin level was 0.34mg/kg and the dimer level was 1.2mg/kg, resulting in a combined rate of 1.54mg/kg. In the Petuna sample, there was 0.11mg/kg of ethoxyquin and 0.91mg/kg of dimer, giving a sum of 1.02mg/kg.

Researchers say the maximum residue limits should also take into account levels of the ethoxyquin dimer.

Sign up for our [free morning newsletter](#) and [afternoon email](#) to get your daily news roundup

"The dimer accumulates at higher levels than ethoxyquin," Narkowicz said.

“Ethoxyquin has a half-life of around a week, but the dimer has a half-life of around 10 weeks. What happens over time [is that] most of the ethoxyquin gets converted to the dimer.”

The dimer is considered to have the same toxic potential as ethoxyquin itself, said Stuart McLean, emeritus professor at the University of Tasmania.

“Ethoxyquin is a parent which produces many other products - a couple of dozen,” McLean said.

“These products are formed in the fish feed itself, and also in the fish, and also in humans who eat the fish. Essentially, these other products have been ignored in the safety limit. They only look at ethoxyquin.”

The European Commission suspended the use of ethoxyquin as an animal feed additive in 2017, as “experts could not conclude on the safety of the additive”.

European regulators also expressed concerns about the presence of a compound called p-phenetidine, from which ethoxyquin is made, which can persist as an impurity in the product.

“P-phenetidine can make up up to 3% of the ethoxyquin,” Narkowicz said. “There are serious concerns around its potential carcinogenicity. There’s not been enough science to look at what happens to it in the fish or the environment.”

Narkowicz noted that the testing showed higher levels in Australian fish than were found in European studies before the EU ban.

### Sign up to **Morning Mail**

 Free daily newsletter

Our Australian morning briefing breaks down the key stories of the day, telling you what’s happening and why it matters

Enter your email address

Sign up

**Privacy Notice:** Newsletters may contain info about charities, online ads, and content funded by outside parties. For more information see our [Privacy Policy](#). We use Google reCaptcha to protect our website and the Google [Privacy Policy](#) and [Terms of Service](#) apply.

Since the EU ban, other antioxidants have been used to stabilise fish feed during transportation, such as rosemary oil extract and tocopherols (vitamin E and vitamin E-like substances), Narkowicz said.

“There are alternatives,” McLean said. “It’s hard to see why any company would persist in using [ethoxyquin], and really the regulators need to relook at what they’re doing with ethoxyquin.”

A spokesperson for the APVMA said ethoxyquin could be legally added to stock food as an antioxidant, adding that “such uses do not require individual approval by the APVMA”.

The regulator had not previously undertaken any regulatory reviews of ethoxyquin, the spokesperson said, adding: “The APVMA is aware of the European action and is considering its relevance in the Australian context.”

A spokesperson for Petuna said it predominantly sourced its feed from the Tasmanian company Biomar, which did not add ethoxyquin to its feed.

“Biomar has not detected any ethoxyquin in its finished goods in either 2021 or 2022,” they said.

The test results “have not been provided to Petuna with any context and so the methodology, sample source and age of the results are unclear”.

“Petuna commissions regular independent testing of salmon fillets using the National Measurement Institute ... to quantify any residue of ethoxyquin, dimer and other trace chemicals.”

The firm said its results to date indicated it had at no time exceeded maximum residue limits.

A spokesperson for Tassal declined to comment.

Explore more on these topics

[Environment](#) [Tasmania](#) [Health](#) [Food](#) [Fish](#) [Farming](#) [news](#)

 Share

Reuse this content

Most viewed

Environment ▶ Climate crisis Wildlife Energy Pollution

News Opinion Sport Culture Lifestyle

Original reporting and incisive analysis, direct from the Guardian every morning

Sign up for our email →

- About us
- Help
- Complaints & corrections
- SecureDrop
- Work for us
- California resident - Do Not Sell or Share
- Privacy policy
- Cookie policy
- Terms & conditions
- Contact us

- All topics
- All writers
- Digital newspaper archive
- Tax strategy
- Facebook
- YouTube
- Instagram
- LinkedIn
- Newsletters

- Advertise with us
- Guardian Labs
- Search jobs