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No fluke: Cawthron Institute's new web tool could help fish farmers tackle parasitic infection

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By Responsible Seafood Advocate

Web tool to help fish farmers manage parasitic infection in kingfish and amberjacks

The Cawthron Institute, New Zealand's largest independent science organization, has developed "**BeNeZe**" (<https://beneze.cawthron.org.nz/>) – an innovative new web tool that helps fish farmers manage flatworm parasitic infection in kingfish and amberjacks (*Seriola* species). The tool is available through the BeNeZe website and is mobile-compatible.

"Using the tool is really easy and the process for treating fish is laid out in six simple steps," said Hutson. "BeNeZe also helps with identification of the correct parasite as they can look quite similar to one another to an untrained eye."

BeNeZe ("Ben-easy") is named after three important ectoparasites: skin flukes (*Benedenia seriolae* and *Neobenedenia girellae*) and gill fluke (*Zeuxapta seriolae*), which impact *Seriola* aquaculture. Research leader Dr. Kate Hutson said parasites are a "persistent problem" in kingfish aquaculture worldwide and can be challenging for start-up aquaculture businesses.



Using the BeNeZe tool, fish farmers can correctly identify parasites, which are a “persistent problem” in kingfish aquaculture worldwide. Photo courtesy of the Cawthron Institute.

“Kingfish are susceptible to several ectoparasites, and left untreated, numbers can build quickly on fish in aquaculture farms and compromise their health,” she said. “New Zealand is investing significant effort into scoping the establishment of a kingfish aquaculture industry, and Cawthron has aquatic animal health expertise and science capability that can support this potential expansion.”

A banner for a webinar titled "Customizing Nutrients for Aquafeeds". The banner has a green background on the left and a dark blue background on the right. On the left, there is a small icon of a fish and the text "Customizing Nutrients for Aquafeeds". On the right, there is a "REGISTER" button and a page number "5" with a right-pointing arrow. The logo "synbiobeta" is visible in the top right corner of the banner.

Customizing Nutrients
for Aquafeeds

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(<https://f3meeting.com/webinars/>).

BeNeZe works on the basis that temperature influences how quickly the number of flukes can build. Parasite populations don't build as quickly in cooler waters compared with warmer water, so treatment regimens need to factor in local sea surface temperature (SST).

Using the BeNeZe tool, fish farmers can select the parasites they have identified on the farm (using helpful identification guides on the BeNeZe website, if required) and enter the current SST. BeNeZe works by crunching lifecycle data for each parasite and sets a timed treatment regime that breaks the parasites' lifecycle.

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According to Hutson, the science behind BeNeZe is supported by international research, with data recently published in *Reviews in Aquaculture*. Ultimately, she hopes that the BeNeZe tool, combined with a disease surveillance plan, can help prevent and treat parasite outbreaks in *Seriola* aquaculture.

“There are lots of complex and tricky challenges to solve in aquaculture but knowing how different factors interact can help achieve best management practice,” she said. “BeNeZe is supported by years of research and development and is presented on a straightforward platform to make the decision management process easy.”

Read the **scientific paper** (<https://onlinelibrary.wiley.com/doi/full/10.1111/raq.12668>) with supporting research.

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