

Use of farmed insects & bristle worms (new feed resource)



Last update: 2 June 2023

- **Type of challenge:** Environment.
- **Challenge:** Resource management (reduction of protein deficit).
- **Action:** Use of proteins from insects and bristle worms fed on non-edible biomass.
- **Animal category:** Fish, crustaceans.
- **Technique:** Incorporation in feed formulation of proteins derived from farmed insects and/or bristle worms.
- **Mode of Implementation:** Insects and polychaetes fed with residues of food production and consumption or with other non-edible vegetable biomass are processed into different high value feed ingredients such as protein concentrate and oils&fats; sludge from fish farming has shown to be suitable feedstock for both insects and bristle worms.
- **Requirements/limitations:** Use of insects and bristle worms in aquaculture requires compliance with the Animal By-Products Regulation and the Feed Hygiene Regulation; the use of catering waste and sludge from aquaculture as feed for insects and bristle worms is not permitted at present and would require in-depth safety assessment and amendment of the Animal By-Products Regulation and the Annex III, chapter 1 of Regulation (EC) no 767/2009 on the placing on the market and use of feed.
- **Economic consequences:** Insect and bristle worms products are not widely available on the feed market at the moment, with current output not competitive yet vis-a-vis other feed ingredients with high protein value such as soybean meal imports.
- **Other considerations:** Production on waste streams of insects and bristle worms for feed purposes may in the future become an option to increase feed circularity, providing feed safety is ensured and the legal frameworks is reviewed in this sense.
- **References:**
 - Lorenzo et al. (2020). *Insect Rearing: Potential, Challenges, and Circularity*. Sustainability 2020, Vol. 12, 4567. <https://www.mdpi.com/2071-1050/12/11/4567>
 - Alfiko et al. (2020). *Insects as a feed ingredient for fish culture: Status and trends*. Aquaculture and Fisheries, Volume 7, 2, March 2022, 166-178. <https://www.sciencedirect.com/science/article/pii/S2468550X21001465>
 - The Research Council of Norway. (2022) *Cultivation of Polychaeta as raw material for feed*. <https://prosjektbanken.forskningsradet.no/en/project/FORISS/280836>
- **Other techniques:** Use of nutrients from other low trophic level resources such as zooplankton, starfish, krill, etc.