

new life for Rice by-products and agricultural wastes: Insects bioconversion for Fish Feed production (newRIFF)

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Programma





14:30 - 14:40	Il progetto newRIFF: New life for rice by- products and agricultural wastes: insects bioconversion for fish feed production Jacopo Bacenetti - Dipartimento di Scienze e Politiche Ambientali - Università degli Studi di Milano
14:40 - 15:00	Riutilizzo dei sottoprodotti del riso: il ruolo di Hermetia illucens e Tenebrio molitor Ilaria Biasato – Dipartimento di Scienze Agrarie, Forestali e Alimentari- Università degli Studi di Torino
15:00 - 15:20	Acquacoltura ed insetti, il contributo dei sottoprodotti del riso per una troticoltura sostenibile Francesco Gai - Istituto di Scienze delle Produzioni Alimentari - Consiglio Nazionale delle Ricerche.
15:20-15.40	Sostenibilità ambientale delle farine di insetti in acquacoltura: chimera o concreta possibilità? Michele Zoli - Dipartimento di Scienze e Politiche Ambientali - Università degli Studi di Milano
15:40 -16:00	Conclusioni e Discussione
FEST DEL SVIL SOSTEN	PROMOSSO DA



Project data sheet





DI TORINO



Grant Agreement Number: 0221/2022.

Titolo: new life for Rice by-products and agricultural wastes: Insects bioconversion for Fish Feed production

Call: Project: Circular Economy – Promoting research for a sustainable future – 2022

Durata: 01/06/2023-31/05/2026 (36 months)

Total budget: € 300 000 + cofinanziamento personale

Ente finanziatore: Fondazione CARIPLO

Consortium: UNIMI, UNITO, ISPA-CNR, more than 30 researchers

The challenges





European agricultural production systems rely heavily on **imported proteins to meet** the nutritional demands of livestock, aquaculture and human consumption.

Among the different alternative protein sources, in the last years particular attention was paid to **insect meal**, considered as promising because of their composition, and nutrient and bioactive compound content.

The use of insect meal as an alternative aquafeed protein source is ultimately an opportunity to exploit the efficient bioconversion by insects of agricultural by-products into an animal feed resource.

Different agricultural and **agro-food byproducts are available** and could be used for insect feeding to produce alternative protein feed for fish farming.

The use of insect feed should be sustainable from an economic, environmental and social point of view.

The new RIFF concept



newRIFF

The **newRIFF** project aims to test the suitability for recovery and enhancement of **paddy rice processing by-products**, and to use them, together with **other by-products matrices**, as a substrate for the **rearing of insects** to be used in turn for aquafeed formulations.

Tests of feed thus produced will be carried out with the **rainbow trout** (*Oncorhynchus mykiss*) as a pilot species, due to its importance in the Italian aquaculture sector (70% of the finfish production), particularly in Northern Italy.

The goals

- to test the productivity of insects, in particular **black soldier fly** (BSF, *Hermetia illucens*) and **yellow mealworm** (TM, *Tenebrio molitor*), raised on a mix of different matrices consisting of by-products of **paddy rice** processing and other biomass deriving from the agri-food industry;

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- to evaluate, by in vivo trials, different diets having increasing levels of insect meals (mix of meals produced from the two species) in substitution of conventional protein sources (e.g. SBM and FM) in rainbow trout farming. *Fish performance, diets digestibility and fish health* parameters will be used to evaluate the effectiveness of the insect meal mix inclusion;

- to evaluate consumer acceptance and economic, environmental and social performance-**sustainability**;

- to identify best practices regarding the use of insect meal as a protein in aquafeed and summarize all the information gathered during the project in order to develop guidelines and policy recommendations.

The specific objectives





Test the activities of two insect species as bioconverters of mix of agricultural organic matrices into protein source for farmed fish;



Assess the productive performances of trout fed with diets in which insect meal partially substitutes the traditional protein sources;



Study the consumer acceptance for food produced using insect meal as well as his willingness to pay for more sustainable fish food;



Evaluate the economic, environmental and social performances of the **newRIFF** designed production processes with a life cycle approach;



Analyze if the use of insect meal - produced by insect reared on a mix of substrates currently not fully authorised affects the quality and the safety of the food produced;



Support policymakers in the revision and/or setting up of policies for enhancing the valorisation of organic byproducts and wastes as substrates for feed production;



Disseminate the achieved results.

The WPs



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Grazie per l'attenzione

https://newriff.unimi.it/il-progetto/



