

PRESS RELEASE – March 2011

Ctaqua proposes new uses for aquaculture by-products for cosmetics, agriculture and nutrition

In the Autonomous Region of Andalusia, in southern Spain, 55% of aquaculture by-products are included in the Animal By-products Not Intended for Human Consumption category, with an estimated annual volume of 1,374 tons.

Because treating the waste generated by the sector in Andalusia is complicated and expensive, it is important to research the possibility of providing these by-products with added value, optimising sustainability and increasing environmental commitment.

With this in mind, Ctaqua, the Andalusian Aquaculture Technology Centre, located in El Puerto de Santa María (Cádiz), has been working for the past year on a project called “Evaluation of Aquaculture Animal By-products Not Intended for Human Consumption,” financed by the Department of Innovation, Science and Business of Andalucía.

Included in Ctaqua’s Environmental scope, this initiative also focuses on transferring technology to aquaculture companies in Andalusia, so they may treat their by-products on site, transforming them into sources of profit for the fish farmer, while improving production.

Results

Specifically, Ctaqua has focused on the production of high-quality **compost**, effective use of **ground** mollusc shells and extraction of fish **oil**.

In order to obtain the compost, Ctaqua collaborated with the TEP-181 Research Group for Environmental Technologies of the University of Cádiz, both in the design and execution of a pilot plant, and in the development of a production protocol.

The compost was tested in collaboration with various organisations, including the Agroindustry Technological Centre (ADESVA), where its properties as fertilizer were evaluated for use in strawberry crops. The Institute for Training in Agriculture and Fishery of Andalusia (IFAPA), located in Chipiona (Cádiz), researched the compost's viability for use as a crop substrate for annual or seasonal plants.

Another experience involved the use of sea bream and sea bass viscera to obtain products with high added value, including DHA (roughly 90% pure) in its ethyl ester form, suitable for human consumption and providing health benefits. Ctaqua developed this work in collaboration with the "Biomolecular Chemistry and Food Processes" and "Aquatic Ecology and Aquaculture" research groups from the University of Almería.

In addition, fish oil rich in DHA and EPA was obtained in collaboration with the National Association of Canned Fish and Mollusc Manufacturers (ANFACO-CECOPECA). These components are important for the

development of the central nervous system, and the immunological and circulatory systems.

More interesting results that prove the effective use of aquaculture animal by-products involved grinded *Crassostrea gigas* shells, with which Ctaqua and SANASUR Laboratories developed an exfoliating masque and a moisturising cream.

SANASUR Laboratories identified ground mollusc shells as an excellent raw material for use in cosmetics, thanks to the high content of calcium carbonate and mother-of-pearl, and the shells' exfoliating and revitalising properties.

After obtaining excellent results with the creams, which will soon be available in pharmacies under the brand "Sanasur Cosmetics," the company is now working on other products using this raw material as a base, including depigmentation creams, exfoliating gel and glycerine soap. This raw material can also be used as a dietary supplement, for additional calcium.

Doubtless, this project is proof of how innovation and research can contribute to increasing the profitability of resources and improving environmental sustainability.

About Ctaqua

Ctaqua works for the aquaculture sector in various lines that include Environment, Food and Nutrition, New Species, Pathology, Applied Engineering and Commercialisation, with excellent results.

With finished projects in the lines mentioned above, this year Ctaqua reinforces the services it offers with the implementation of new facilities in El Puerto de Santa María, which will allow for the development of new projects in the test centres, workshops and laboratories equipped with the latest technology.

The modern two-story building houses the nutrition, diversification, mollusc, crustacean, phytoplankton and zooplankton rooms on the ground floor. The microbiology and pathology labs, transformation room and the engineering room are also located on this level. The technical offices, physicochemical, materials and food technology labs are located on the upper level.

The premises will be fully equipped by June 2011 and will allow Ctaqua to consolidate its work and become a reference in R+D+I management for the aquaculture sector, as well as a driving and essential force to generate added value for companies in the sector.

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