

## Avocado oil use to improve tilapia nutritional quality

A team of scientists from the National Polytechnic Institute (IPN) is working on the formulation of a diet based on avocado oil to improve the nutritional quality of Nile tilapia (*Oreochromis niloticus*) fillets and add value to this commercially important species in aquaculture.

The group of researchers works at the Interdisciplinary Research Centre for Regional Integral Development (CIIDIR), Unidad Sinaloa, of the INP, and is led by Dr. Hervey Rodríguez González.

The researcher explains that currently the prices of international markets are very competitive, so Mexico should look for strategies that lower costs in farming systems and offer a plus in the quality of freshwater and saltwater species.

Dr. Hervey Rodríguez emphasizes that the avocado has a high caloric content, of fatty acids, fibre, antioxidants, vitamin C and potassium, among others. In addition, it is known to possess metabolites such as beta-sitosterol, which has nutraceutical attributes, since it can decrease cholesterol absorption in blood in human beings.

Previous work done at the CIIDIR Sinaloa Unit showed that there are avocado varieties with a higher vitamin E content than the Hass one. In this sense, through the project "Use of avocado by-product for aquaculture", the specialist is evaluating the effect of the inclusion of Sinaloa regional avocados on improving the quality of tilapia fillet (fatty acid content, alpha tocopherol and beta sitosterol), in an optimal diet.

"Currently, 50,000 tonnes of tilapia are imported from China to Mexico with prices that are very difficult to compete. However, giving the product added value with nutraceutical characteristics allows it to be competitive," says the expert.

CIIDIR Sinaloa Aquaculture Nutrition group uses avocado oil to evaluate three experimental treatments and a control diet (commercial diet):

Inclusion of 3, 6 and 9 per cent of avocado oil, respectively, plus commercial diet in all three cases.

As indicated by Dr. Hervey Rodríguez, so far, in the growth trial it has been found a greater weight in organisms fed with 9 per cent inclusion of avocado oil. At this time, the researchers are analyzing the content of the fillet (fatty acids, alpha tocopherol and beta sitosterol).



In previous experiments, they found an effect of the inclusion of chia and linseed ingredients with a high omega-3 content in a higher concentration of them in the fillet. "We obtained tilapia fillets fed with chia and/or flaxseed with an omega-3 omega-6 ratio very similar to that found in fillets of marine origin such as salmon, for which we hope to achieve a similar result in this research," says the researcher.

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