In vivo estimation of the fatty acids profiles of fish muscle

CSIC has developed a method to predict the fatty acid profile of fishes, that can be applied on the living organisms, avoiding the need of sacrifice. This allows for a periodic monitoring of profiles in individuals and populations, being therefore a method of great interest in aquaculture or research of wild populations.
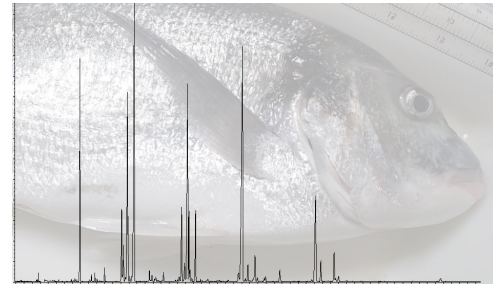
Industrial partners in the field of aquaculture are being sought to collaborate through a technology licence agreement for its use and exploitation.

An offer for Technology Licensing

An improved composition and nutritional traceability of fish at individual and population levels

Marine fatty acids, such as omega 3, are essential in human diets, and are mostly incorporated through fishes, so characterization of these fatty acids in fish fillet is of key importance in aquaculture as they determine the nutritional quality. The composition of fatty acids of fish is conditioned by the diet and can affect economic aspects such as price, as well as animal welfare. Current analysis methods are based on blood or tissue sampling, stressing the animal or even sacrificing it, therefore hindering representative monitoring both at population and individual levels.

Detail of fish, and fatty acid chromatogram

With our new method an estimation of the fatty acid profile of muscle is achieved, being, in addition to non-invasive, simple, cheap and quick, thus facilitating the sampling and tracking of animals and populations over time.

Main innovations and advantages

- Does not require to sacrifice or stress individuals as it is a non-invasive method.

- The sampling method is simpler and quicker than current ones, and does not require a special training. Results can be obtained in a few hours.

- It has been successfully tested in gilt-head bream, European bass, turbot and salmon, both wild and cultured.

- In aquaculture, it can be used to determine the effect of diet on the fatty acid profile in each developmental stage, to guarantee the nutritional quality of the produced animals and maximize the output.

- Other application fields include food safety, research, and population ecology, among others.

For more information, please contact:

Marc Escamilla

Deputy Vice-Presidency for Knowledge Transfer

Spanish National Research Council (CSIC)

Tel.: (+34) 96 161 29 95

E-mail: m.escamilla@dicv.csic.es
comercializacion@csic.es

MINISTERIO
DE CIENCIA
E INNOVACIÓN

CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS