Carryover of CH3Hg from feed to sea bass and salmon

Contamination of food generally has a negative impact on the quality and may imply a risk to human health. Mercury (Hg) is one of the most hazardous compounds in our environment and is released from the earth’s crust by both natural and anthropogenic processes. The mercury species ‘methylmercury’ is highly toxic, because affects the function of enzymes, easily crosses the blood-brain and the placenta barriers and is toxic to the nervous system (especially the developing brain). It bioaccumulates and biomagnifies through the aquatic food chain. Methylmercury is the most common mercury species in fish and humans are also mainly exposed to methylmercury from consumption of fish and other seafood. The aims of the present controlled fish feeding trials were to study the carryover from feed to fish fillets (at low spike levels (1x background level of methylmercury)) and to determine toxicokinetic parameters. The study included Atlantic salmon (Salmo salar), which is one of the main farmed seafood product consumed in Europe and with production in Northern Europe as well as European seabass (Dicentrarchus labrax) produced in Southern Europe, where it is a highly consumed seafood product. The weight gain of the fish, their feed intake, feed and fish fillet contaminant level were determined to model the uptake and elimination of methylmercury. The toxicokinetics for feed with low levels of methylmercury (41-75 ng/g) showed high assimilation and low elimination.

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