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AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM

RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Determination of quercetin concentrations in fish tissues after feeding quercetin-containing diets

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Abstract: Concentrations of quercetin in fish tissues were measured for the first time using HPLC-electrochemical detection method. Its identity was also ascertained with UV-photodiode array detection. Quercetin, in aglycone form, was at measurable concentrations in tilapia plasma, liver, and whole body homogenate when fed with diets containing 1% quercetin (aglycone) for 1 or 15 weeks. Hydrolysis with glucuronidase/sulfatase treatment for the purpose of cleaving conjugates did not increase quercetin levels, suggesting that glucuronide or sulfate conjugates are not the major metabolic forms in Nile tilapia (*Oreochromis niloticus*). No quercetin was detected in plasma of rainbow trout (*Salmo gairdneri*) or white sturgeon (*Acipenser transmontanus*) fed commercial diets. The results suggest that quercetin is absorbed in tilapia and that this flavonoid is deposited mainly in aglycone form in the body after absorption.

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