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Abstracts of contributions presented at the International Conference
WORLD AQUACULTURE '93
Torremolinos, Spain, May 26-28, 1993

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EUROPEAN AQUACULTURE SOCIETY
SPECIAL PUBLICATION NO. 19
Oostende, Belgium
April 1993

SUITABLE PROTEIN AND LIPID LEVELS IN DIETS FOR GILTHEAD SEA BREAM (*SPARUS AURATA* L.) FINGERLINGS AND GROWERS.

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Two feeding trials were conducted to determine the suitable protein and lipid levels for 5.3g fingerlings and 89.8g growers of gilthead sea bream by combining different levels of protein with two lipid levels in the diets. Sardine meal and sardine oil were employed as protein and lipid sources, respectively.

The protein sparing effect of dietary lipids was more evident with fingerlings, where reduction of dietary protein from 52% to 46% and increase of lipids from 9% to 15% in the diets resulted in better performance of fish. In this case protein to energy ratio (P:E) was 21.9 mg.protein/MJ of gross energy.

The optimum proportions of dietary protein and lipid levels found for growers were 54% and 11%, respectively (P:E = 26 mg.protein/MJ of gross energy). The high requirements for protein could be due to an increased protein demand during sexual maturation for gonad development.

The protein efficiency ratio (PER) and apparent net nitrogen utilization (APNU) showed an increment as dietary lipid increased in both experiments, suggesting a higher protein utilization for growth.

The increase of dietary lipids produced an increment in carcass lipid deposition, both in viscera and non-visceral tissues, but levels were always below reported carcass lipid contents in wild gilthead sea bream in the Mediterranean.