SELECTION FOR GROWTH RATE AND POSSIBILITIES FOR GENETIC CHANGE IN ATLANTIC SALMON

T. Gjedrem

To cite this version:

T. Gjedrem. SELECTION FOR GROWTH RATE AND POSSIBILITIES FOR GENETIC CHANGE IN ATLANTIC SALMON. Annales de génétique et de sélection animale, 1978, 10 (4), pp.602-602. hal-00893091

HAL Id: hal-00893091
https://hal.science/hal-00893091
Submitted on 1 Jan 1978

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
Selection for growth rate and possibilities for genetic change in Atlantic salmon

T. GJEDREM

Dep. of Animal Genetics and Breeding, Agricultural University of Norway, 1432 Ås — NLH, Norway

The possibility for genetic change in production traits of salmon looks good when considering the magnitude of genetic variation together with the selection differential which can be applied. At the Fish Breeding Experimental Stations Sunndalsøra and Averøy a selection programme is being carried out. Selection for body weight is based on strain, full- and half sibs and individuals information. Strongest selection was applied on weight after two years in the sea. The first generation response of salmon fingerlings to selection for high weight at 190-day old was as high as 30 p. 100. This response is higher than expected and can not be explained as a direct selection response only. It is thought that part of this response is a domestication effect.

5. — Biochemical studies

CHOLESTEROL CONCENTRATION IN BOVINE BLOOD PLASMA
RELATION WITH GROWTH RATE ALKALINE PHOSPHATASE ACTIVITY
AND THYROXINE DEGRADATION

I. EDFORS-LILJA, B. GAHNE and K. LUNDSTRÖM

Dep. of Animal Breeding and Genetics, Swedish University of Agricultural Sciences, S—750 07 Uppsala, Sweden

Cholesterol concentration and alkaline phosphatase activity in blood plasma were analysed in 244 Swedish calves of both sexes and 249 young Danish bulls. Thyroxine degradation rate was in addition determined in the Danish bulls. In both animal materials, blood samples were taken one to three times per animal at different ages. The cholesterol level was higher in the heifers than in the bulls at all ages, while the alkaline phosphatase activity was higher in the heifers at 10 ans 16 months. Both cholesterol concentration and thyroxine degradation rate rose with increasing age, while the age influence on alkaline phosphatase activity was more complicated.

The repeatabilities of cholesterol concentration between ages were in the range 0.2 to 0.4. The repeatability estimates of alkaline phosphatase activity were between 0.3 and 0.5. For thyroxine degradation rate, the estimate for bulls was 0.4. When average data from the three ages were used, the following estimates of heritabilities and genetic correlations were calculated. The heritability of cholesterol concentration was 0.4 and 0.8 for the two animal materials. The heritability estimates of alkaline phosphatase activity were 0.3 and 0.7 respectively, and for thyroxine degradation rate, the estimate was 0.8. The genetic correlations between growth rate and the blood parameters were 0.7 and 0.8 for cholesterol concentration, 0.2 and 1.0 for alkaline phosphatase activity and 0.9 for thyroxine degradation rate.

Due to the positive genetic correlations in bulls between growth rate and the blood parameters studied, it may be possible to include them in an indirect selection for growth rate.

SIMULTANEOUS TYPING OF ALFA S1, BETA, KAPPACASEINS, BETALACTOglobulin, ALFA-LACTalbumin AND SERUM ALBUMIN IN COW MILK BY POLYACRYLAMIDE GEL ELECTROPHORESIS

L. O. SJAUNJA, B. GAHNE

Dep. of Animal Breeding and Genetics, The Swedish University of Agricultural Sciences, S—750 07 Uppsala, Sweden

A simple method of horizontal polyacrylamide gel electrophoresis in a discontinuous buffer system (Tris-citrate-borate, pH 9.0) was described for the simultaneous phenotyping of αs1-, β-, κ-caseins and β-lactoglobulin, α-lactalbumin and serum albumin in cow milk. A step gra-