

Ruangpun Supmee 2006: Response to Selection, Carcass Percentage and Body Composition Changes and Phenotypic Correlation in Divergently Selected Lines of Walking Catfish (*Clarias macrocephalus*) after Five Generations of Selection. Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Professor Uthairat Na-nakorn, Ph.D. 61 pages.
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A divergent selection has been used for evaluation of selection response. In this study a bidirectional mass selection has been performed to improve body weight of Thai walking catfish (*Clarias macrocephalus*) and the low line was used as a reference for assessment of selection response. In addition the correlated response in carcass percentage, body compositions and the correlation between body weight and carcass percentage were studied after five generations of selection (a proportion of selected fish = 10% in every generation). The response to selection was assessed by comparing the low and high line in an experiment with 3 replicates in fiber-glass tanks (stocking density = 120 fish/m²). The results showed that the response to selection for body weight at 24 weeks of age was 10.72 g (16 %) and the body weight of the high line (90.55±27.12 %) was higher than (P<0.05) that of the low line (66.98±11.82 %). In addition, percentage of carcass and protein in the high line (57.75±4.96 % and 73.26±6.94 %, respectively) were higher (P<0.05) than those of the low line (54.01±5.18 % and 62.42±8.35 %, respectively). There was no difference in the percentage of moisture, ash and lipid among the two lines. The correlation between the body weight and the percentage of carcass (r=0.037, P=0.8 and r=0.038, P=0.796 in high and low line, respectively) was not significant.

Student's signature

Thesis Advisor's signature