

Effect of feed restriction on the growth performance of turbot (*Scophthalmus maximus* L.) juveniles under commercial rearing conditions

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Abstract

Two trials were performed to study the effect of periodic feed deprivation (trial 1) or feed restriction, followed by satiation feeding (trial 2) on the growth performance of turbot juveniles under commercial rearing conditions. In trial 1, duplicate groups of 350 fish with an initial weight of 62 g were fed a commercial diet to apparent visual satiation for 7, 6, 5 or 4 days a week for 83 days. At the end of the trial, fish weight was directly related to the number of feeding days but feed efficiency and protein efficiency ratio were not affected by treatments. At the end of the trial, there were no differences in whole-body composition among groups. In trial 2, duplicate groups of 500 fish with an initial weight of 33 g were fed a commercial diet to satiation (100%) or feed restricted to 90%, 80% and 70% of satiation for 90 days. Thereafter, all groups were fed to satiation for 34 days. During the feed restriction period, growth was directly related to feed intake, while during the satiation feeding period, it was inversely related to the previous feeding level. At the end of the trial, the final weight was not different among groups. At the end of the feed restriction period, whole-body lipid content showed a trend to decrease with an increase in the feed restriction level. The results of this study indicate that under practical conditions, turbot juveniles should be fed daily as even cycles of short periods of feed deprivation negatively affect growth, while not improving feed efficiency. On the contrary, even after a relatively long feed restriction period, fish shows compensatory growth, and this may be used as a feed management strategy for controlling fish production in commercial farms.

Keywords: Body composition; Compensatory growth; Feeding rate; Turbot

