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**A comparison of recirculation aquaculture systems versus biofloc technology culture system for on-growing of fry of *Tinca tinca* (Cyprinidae) and fry of grey *Mugil cephalus* (Mugilidae).**

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**Abstract**

The on-growing of tench *Tinca tinca* fry (1.81 ± 0.6 g) and grey mullet *Mugil cephalus* fry (0.65 ± 0.2 g) was carried out using two different culture systems, recirculation aquaculture system (RAS) and biofloc technology culture system (BFT), to compare their performance and evaluate the technical feasibility of rearing both species using an alternative method. After an on-growing period of 50 days, it was possible to verify that the survival rate, fish size in terms of body weight and length, condition factor (K), specific growth rate, gained biomass and apparent feed conversion rate of *M. cephalus* fry were significantly higher ($P < 0.05$) in RAS in comparison to those obtained using BFT. For *Tinca tinca*, results were similar for all the measured variables except for the condition factor, that was significantly higher in BFT ($P < 0.05$). Water quality parameters remained within the optimum ranges reported for freshwater fish species using RAS. In BFT, despite the constant addition of glucose, total ammonium concentrations were relatively high (2.89 ± 1.25 mg $NH_4^+$/L for tench and 3.74 ± 1.34 mg $NH_4^+$/L