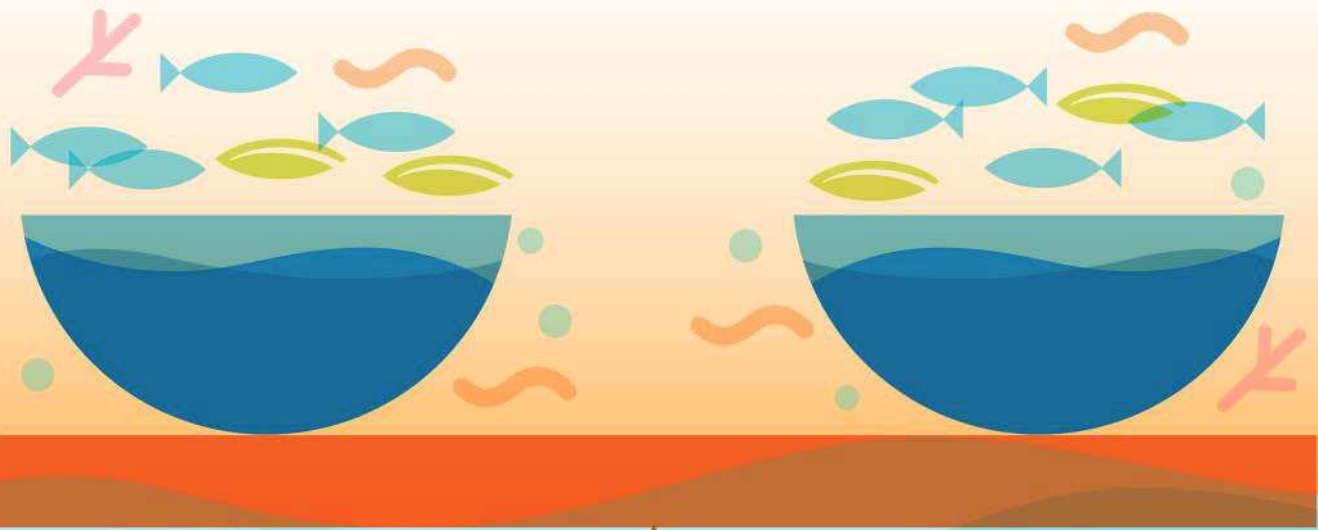


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EFFECTIVE STIMULATION OF OVULATION IN SELECTED RHEOPHILIC CYPRINIDS SPECIES

J. Mazurkiewicz, M. Wiśniewski, M. Rawski, P. Skrzypczak, K. Florczyk, J. Banaszak

Poznań University of Life Sciences

Experimental Station of Feed Production Technology and Aquaculture in Muchocin

Email: jan.mazurkiewicz@up.poznan.pl

Introduction

Rheophilic cyprinids populations decrease in European rivers during the last 50 years due to human activity and its effect on the environment. As an important element of trophic systems, they may be considered an „umbrella species” for the entire ecosystems of lowland rivers. Thus methods of their reproduction and rearing of juvenile stages must be developed and improved for the effective production of restocking material.

Materials and methods

Adult females of common barbel (*Barbus barbus*), vimba bream (*Vimba vimba*), ide (*Leuciscus idus*) and European chub (*Squalius cephalus*) were obtained from a long-term captive population maintained in the Experimental Station of Feed Production Technology and Aquaculture in Muchocin. In the experiments, the possibility of stimulation for egg production was assessed. 80 fish per species were divided into four treatments (20 females each) CON – control with no stimulation, E – with environmental stimulation by prolonged photoperiod and increased water temperature, H - with hormonal stimulation (ovopel) and EH - with both environmental and hormonal stimulation.

Results

In CON treatment ova were obtained from 20% of common barbel only, while environmental induction did not increase the number of females producing eggs. In the case of vimba bream, Ide and European chub environmental stimulation did not induce ovulation. When hormonal stimulation was applied 40% of Ide, 60% of common barbel and European chub and 100% of vimba bream produced eggs. EH treatment increased ovulation success up to 80% in common barbel and European chub as well as 100% in vimba bream and Ide.

Conclusions

Despite the highest increase in ovulation due to hormonal stimulation use the application of environmental stimulation of females in rheophilic cyprinids seems to be an important element of effective and sustainable breeding in this group.

This study was carried out as part of the project entitled: “Innovative system of rheophilic cyprinid fishes reproduction and rearing in biologically effective and low emission conservative aquaculture”, no. 00001-6521.1-OR1500001/22, Task 2.1 “Innovations” according to EU Regulation No. 508/2014, Priority 2 – “Supporting environmentally sustainable, resource-efficient, innovative, competitive and knowledge-based aquaculture” realized in the Operational Program “Fisheries and Sea”.