

FISH REARING WITH ARTHROPOD-BASED LIVE FOOD

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The goal of our project, started nine years ago within the Csányi Foundation, is to feed fish with live arthropods in an artificial environment by modelling natural feeding conditions.

In the first experiment, food species were collected from natural watercourses: tadpole shrimp (*Triops cancriformis*), small water flea (*Daphnia pulex*) and mussels (*Ostracoda spp.*). Of these, *Daphnia pulex* was the most suitable for starting experiments, due to its high production rate. In the case of feed shortage and overpopulation, sexual reproduction takes place, triggering the formation of resting eggs. By supplying adequate oxygen level and mixed feeding with microalgae and yeast, parthenogenesis could be maintained. Overpopulation could be achieved via continuous filtration. The *Daphnias* filtered out were used for feeding guppies (*Poecilia reticulata*). The fish reared this way were more colourful than their in-store counterparts. This feeding method did not cause deficiency or mortality. Compared to traditional aquarium farming, the ecological balance of water was easier to maintain.

In the second experiment, goldfish (*Carassius auratus*) specimens of 1.5-gram initial weight were fed with natural food as well as with artificial food as control. Here, two new food species were introduced: mealworms (*Tenebrio molitor*) and superworms (*Zophobas morio*). The animals reared with natural food have become more vibrant and colour-rich with higher growth rate than their counterparts fed on artificial food.

In the framework of the ÚNKP-20-1 program, the increase in weight and length of carp (*Cyprinus carpio*) is examined by contrasting natural and artificial methods of feeding.

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