

AN EXPERIMENTAL DEVICE FOR STUDYING TACTILE STIMULATION IN FISH

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Tactile stimulation has been studied in fish to understand its relationship with stress and also as a mechanism of pair bonding in cooperative fish. We aim to study the effect of tactile stimulation on the welfare of territorial fish, as cichlids. To do this, we firstly developed a device to produce tactile stimulation in Nile tilapia and therefore study its effect on reducing social and non-social stress. The device consisted of several lined up plastic bars with silicon edges on both sides. The arrangement produced a barrier where the fish must cross to reach the food. Adult male Nile tilapia (N = 30), measuring between 10cm - 13cm and weighing between 33g - 66g, were isolated in glass aquaria (120x60x40cm; content 140L) for 3 days to experimental adjustment. In the fourth day, the device was introduced in the center of each aquarium. Then, the fish was fed by using a feeder placed on the opposite side that the fish was. Food (commercial dry shrimp) was attached to a plastic net which was attached to a plastic long stick. This feeder was handled by the researcher to move food from one place to another, depending on the fish position in the aquarium. Previously, fish had to learn how to take food from the feeder. Hence, ten fish were grouped in an aquarium (60x60x40cm; content 140L) and were fed by using the plastic feeder, two days before isolation. After isolation, they were also fed by the feeder during the first three days of adjustment to the experimental aquarium. Thus, the fish was able to use the feeder after device introduction in the middle of aquaria. Fish, then crossed between the silicon edges to reach food and received tactile stimulation. The device was kept in the aquarium for 7 days before some stress test being applied. During this period, the fish was video recorded twice a day (in the morning and in the afternoon) 5 min before feeding, 10 min during feeding and 5 min after feeding to access the number of times the fish crossed in between edges. In fact, after experiencing cross through the edges to reach food, fish spontaneously started to cross by them. The number of crossings is still being quantified, but this spontaneous contact with the edges indicates that fish looked for tactile stimulation. Thus, the device seems to be an easy and cheap way to study the effect of tactile stimulation on fish behavior and physiology. The effect of this scenario on reducing fish stress levels and in turn, increase welfare, is still in advance.

Key-words: fish welfare, stress, cichlids, massage.

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