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Best practice in Szegedfish LTD (Hungary)

The Szegedfish Ltd. is located to the Northeast from the city Szeged. Its total area is 2100 hectares. Different kind of fishes are bred here such as: carp, white bighead carp, grass carp, pike and catfish. The main result of the staff’s research is the mirror carp of Szeged what is officially registered and accepted as a landrace animal. The mirror carp is a low-fat fish with excellent taste, easily adapts to the local environment and genetically resistant. The company produces fishes for breeding, sporting and eating purposes at the same time. Their annual fish production is about 1800 tons. Approximately 30-40% of the produced fish is marketed in the EU countries and the remaining quantity is sold inland for angler associations, restorants and associated holdings. The main inland market of the company is the South Plain region.

According to the definition of the national standard „A pond farm is a farm unit consisting of artificial ponds where the fish breeding is planned and intensive. In a pond farm, the technological conditions of water management should be provided.” The „sodium carbonated” fishponds were created especially in regions with plain fields between the years of 1932-1982. These ponds are surrounded by embankments, so their water management can be controlled. The ponds belong to the „warm water” type ones (their temperature is above 20 °C in summer). The company produces the table fish as a final product in a three-year time period.

In order to reach a higher fish production, the evaporated water loss is being compensated by some water from the river Tisza. Different sizes of fish screens are used when filling up the ponds. 8-9 million m³ water is classified as ecological water out of the annually used 10-15 million m³. The optimal oxygen content of the water that provides living space for the fishes is 5 mg/l in summer and 3-4 mg/l in winter. (Mass fish decay occurs if the oxygen content of the water is decreased to 0.7 mg/l in summer or 0.5 mg/l in winter.) 2.0-2.4 tons/hectare livestock manure (60% cow manure and 40% pig manure) is used per year to improve the natural nutrient supply of the ponds. The pond fertilization is finished till the end of July in every year.

After having harvested all the fish from the ponds in autumn, the beds are kept dry and bleach-powder is spread if needed, so they become suitable for permanent use. The dry beds of the ponds are loosen up with a disk-harrow. The shore is examined and restored if required at this time. The control of the pond-side plants is mechanized, but grass carps are also introduced for this reason.

Carp rearing is performed by artificial fertilization after having selected the parents with good characteristics. Female fish are treated with hormone then their eggs are collected. After it, the male semen is added to the eggs. During the process the mixture should be stirred
continuously. In order not to become adherent, some fertilizing solution is added to the roes. Roes are taken to special pre-raising ponds for one month.

In order to get 2.5 – 2.8 million spawns in the ponds until autumn, 40 – 50 million roes should be collected from female fish in the hatchery. Herbivorous fishes (white bighead carp, grass carp) and catfish are also bred artificially.

Only those healthy fishes can be transferred to the ponds rich in oxygen, which are equal in age. Plastic containers are used when selecting and weighing the fishes in order not to injure them. Carps and herbivorous fishes are usually introduced together. The ratio between them should be 10:1. After the introduction, the health and development of the stock of the ponds is being controlled continuously by using casting nets.

Only good quality forage or nutriment should be used for feeding purposes. The feeding starts when the water temperature is at +10 °C. The feed brought into the water is usually consumed within 5-6 hours time by fishes. Fishes are being fed until the end of June–July, then the quantity of their feed is determined based on the control fishing performed twice a month at least.

The individual treatment of the fish stock is impossible, so the solution for this is prevention. If required, the medicine should be mixed into the fish feed or added into the water of the pond. The most problematic fish diseases are the white spot disease (Ichthyophthiriosis), the Asian tapeworm (Bothriocephalosis) and the swim bladder inflammation. Interventions always cause stress to fishes that can be harmful for their health, so the continuous control or – in some cases – laboratory tests (for example: virus indication) are inevitable. The
veterinary specialist of the company performs constant controling of the farm and introduces some medical treatment if necessary.

Only the small ponds are fished in summer, if the water quantity is appropriate. Special attention is required for this process. After having estimated the fish crop, the harvest starts with the drainage of the ponds using the necessary tools. Driftnets are used for manual harvest, while moving fish screens and mammoth pumps for the mechanical harvest. The basic principle is that fishes should be transferred without any injury as soon as possible. The examination of the pond, the drainage of the remaining water, removal of rough fishes and making perfect order are the last steps of the harvest.

The wintering of the crowded harvested fishes can only be provided by continuous water supply (0.5 l water rich in oxygen is required for 1 ton of fish stock per secundum). The snow is cleared away quickly from the surface of the ponds. After the upper layer of the water of the fishpond has been congealed, a leak with a size of 8 m × 3 m is cut in the ice per every 3 hectares. Mechanical leak drilling should be performed when the thickness of the ice reaches the 25 cm. The four corner of the leak are always marked that is visible enough from a distance.

The winter season is good for repairing or exchanging of the deteriorated tools.

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Pictures

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