

## AN INTENSIVE METHOD OF REARING VIETNAMESE CARP UNDER UZBEKISTAN CONDITIONS

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**Abstract.** *The article presents data on acclimatisation, intensive rearing conditions and productivity of Vietnamese carp under conditions of Samarkand province. The research carried out with the help of oxygenation equipment in the conditions of the Pakhtachi district has ensured efficient fish farming. It is therefore recommended that it should also be used in other fish farms in the region, which in turn will enable the rational use of innovative technologies in the sector.*

**Keywords:** *fish, intensive technologies, resource-saving technologies, growth rate, native carp, grass carp, silver carp, Vietnamese carp, koi, tilapia, water quality, intensive pools.*

### **Introduction.**

Today, the fish farming industry, like other sectors, is growing rapidly. The industry is a major strategic contributor, along with other sectors, to the provision of fish products and food security.

Presidential Decree PD-4005 of 6 November 2018 on Additional Measures for the Further Development of the Fish Farming Industry sets out the tasks of extensive introduction of intensive technologies in the fish farming industry, increasing fish production by several times, developing new priority aquaculture facilities, effective use of water bodies in fish farms on a scientific basis, improving their ameliorative state, and wide introduction of resource-saving technologies and innovations. [1]

During the President's visit to Samarkand region, a goal was set to bring the region's fish production to 20,000 tons. For the timely and effective fulfilment of the tasks set, the regional khokimiyat and the region's responsible specialists have initiated large-scale organisational and economic measures. Industry plans are re-examined and feasible work is planned. In organising fish farming on the basis of modern technologies in the conditions of Samarkand province, Pakhtachi district is in the lead.

There are 26 fish farms in the district on a total area of 160.8 ha. Of these, 83.7 hectares

are artificial reservoirs. Another 175.2 hectares of artificial reservoirs are scheduled for commissioning in 2020.

### **Material and methods.**

In the reproductive fish farm "Balik al Said" in Pakhtachi district of Samarkand region, research on fish farming intensification is underway. The farm breeds the following species of fish: local carp, grass carp, silver carp, as well as imported Vietnamese carp, koi and tilapia.

### **Research findings.**

The total area of the reproductive fish farm "Balik al Said" is 76.4 hectares, of which 29.6 hectares are reservoirs in which 5.0 hectares are intensively fish-breeding. This year, 26.4 tonnes of fry and 100.0 tonnes of marketable fish were raised. The farm has a 2 ha test site and four open ponds (0.5 ha each). 30,000 Vietnamese carp were released per hectare of the intensive water body. Vietnamese carp are several times faster than native carp in terms of growth rate. The annual yield of local carp fry is 35-40 grams, at the same age the same figure for Vietnamese carp is 110-120 grams, the difference in favour of the latter is 75-80 grams or more than 3 times.

With a large volume of released fish in intensive water bodies, constant monitoring of water quality is required. Water quality is monitored by means of field, routine and general monitorings. Due to the fact that the fish have been reared in very dense conditions, the water quality indicators change dramatically.

Fish thrive well in water temperatures of 18-20°C and oxygen levels of 7-9 mg/l, an oxygen level of 2.5 mg/l is considered critical for fish. Mineral fertilisers: phosphates 0.1-0.4 mg/l, nitrates 2 mg/l, nitrites 0.05 mg/l, sulphates 10 mg/l, albuminous nitrogen up to 0.5-1.5 mg/l is considered the optimum condition for fish breeding. [2]

In order to improve the growth and appetite of fish, the fish reproduction farm "Balik al Said", on 2 hectares of experimental intensive pools, tested new equipment imported from China on rotating oxygenator water, this equipment is being tested in open ponds.

By injecting oxygen into the water at high pressure, liquid oxygen is created, which enriches intensive pools with oxygen. Fish are very demanding on dissolved oxygen in the water. According to the scientific fish farmer G.T. Vinberg, 1 kg of carp fry each of which weighs about 25 grams consume 413 mg of oxygen in 1 hour, the same weight of 500-700 gram carps consume 120 mg of oxygen in one hour. The amount of oxygen in the water is measured hourly with an oximeter [4].

The optimum pH level in swimming pools should be 7.2-8.3 mg/l. This figure for carps is pH 6.5 mg/l. The pH level is determined using indicator litmus paper. The litmus paper is dipped for 1-2 minutes in water, then compared with a coloured scale.

With this method, the pH level is determined with an accuracy factor of 99-99.5%, which is considered sufficient to draw conclusions about the state of water quality.

On the basis of new technologies, using an oxygenation system, reservoirs are enriched with local liquid oxygen; when the oxygen level in water reaches 7-8 mg/l, fish productivity in intensive pools increases compared to fish in other pools.

Feeding of fish in the intensive pools was carried out 4 times a day with locally produced

mixed feed.

### **Conclusion.**

The research carried out with the help of oxygenation equipment in the conditions of the Pakhtachi district has ensured efficient fish farming. It is therefore recommended that it should also be used in other fish farms in the region, which in turn will enable the rational use of innovative technologies in the industry.

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