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CULTIVATION OF CARP FISH IN CONDITIONS OF INTENSIVE AQUACULTURE

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Annotation

The article reveals the short content of cyprinid fish and the cultivation of cyprinid fish in conditions of intensive aquaculture in Uzbekistan. In addition, as a result of the study, scientists in Uzbekistan, the average productivity of fish brought from abroad, a two-year-old Hungarian breed, grown in cages and indicative of the viability of two-year-old fish, For breeding and growing fish by intensive aquaculture methods that do not have permanent sources of water supply, but feed at the expense of spring meltwater, rain, less often from small springs and springs, as well as small lakes, including floodplain lakes.

Keywords: fish productivity, widespread, intensive technology, carp breeds, intensive aquaculture, vegetation, semi-intensive, carp larva, compound feed.

Introduction. Carp is found almost all over the world, in warm fresh waters and in Eastern Europe and Asia (Hungary, Russia, Ukraine, China, Japan, Vietnam, etc.) in fish farms is widely used as an object of aquaculture [1].

Carp is considered a domesticated form of carp. The carp was originally domesticated two thousand years ago in China. In the process of domestication, its morphological parameters began to change. The trunk has expanded, the length of the trunk has shrunk, scales of various shapes have appeared, located in different parts of the trunk or located in a straight line, you can even meet without scales at all. The mirror carp has very large scales, similar to a mirror, hence its name. Large scales are arranged in an irregular row or randomly, they are also located along the lateral lines where the main tactile organs are located. The advantage of mirror carp is that it is easy to clean before cooking [2].

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The disadvantage is that it does not tolerate wintering well and it has low resistance to environmental factors. The scaleless or leathery carp body is covered with sparse scales, which are located only around the tail and gill flaps. Like the mirror carp, it does not tolerate wintering well, compared to the scaly carp, it is more prone to diseases. It should be noted that fish covered with scales of various shapes are not a separate breed of carp, inside one breed you can also find fish covered with scales of various shapes. According to scientists (2019), there are currently about 100 breeds and types of carp in the world that meet the requirements of the standard for growing various fish. On the basis of this diversity, the following species and species groups of carp have occurred: Hungarian, Atay, Ukrainian, ropshin (a hybrid of carp with Amur carp), Sarboyan, Krasnodar, Central Russian, Belarusian, Kazakh, German, Vietnamese and other species. Hungarian, Ukrainian, Czech and Vietnamese carp are widespread species [3].

Currently, Hungarian carp breeds have been used in the origin of most of the carp breeds grown in Europe. Hungarian carp breeds are considered a valuable gene pool in the creation of new breeds of carp and its crosses. As an example of Hungarian carp breeds, one can cite Bical mirror, Denis, Szarvaz, Tataysky. Tataysky is one of the types of ancient Hungarian carp, its history begins at the end of the XIX century. In 1984-1986, the Tatai carp was brought to the former Soviet Union, 175 thousand larvae of purebred fish were placed in the Balikchi fishery of the EPPORP located on the territory of Uzbekistan (Bogeruka A.K., 2008) [4].

In our country, in the fish farming industry, in increasing the production of commercial fish and fish products, there are great opportunities for growing Hungarian carp in natural water reservoirs, reservoirs, both in natural and artificial conditions, in intensive and semi-intensive lakes, in pools and cages. Hungarian breeds are distinguished by high productivity, product quality in terms of productivity and exterior, meeting the requirements of international and European standards, taste of meat, rapid growth, effective use of feed and the ability to grow in a confined space using methods of intensive fish cultivation. It should also be noted that they have a high commercial fish quality [5].

Materials and methods of research. Due to the fact that our state pays great attention to fish farming, new work has been carried out in this area, in particular, the industry has been completely updated, measures have been worked out, as a result of

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the implementation in practice of programs for the development of the industry, fish farming is developing a new. Purebred fish (females) and fry are brought from abroad (Vietnam, Ukraine, Hungary), are raised and bred in fish farms of the Republic, receive purebred fish offspring, then distribute them to other farms. This, in turn, leads to increased productivity and to the breeding of high-quality commercial fish in the reservoirs of farms. As a result, the country's population's need for fish and fish products is being met and provided with healthy and dietary, high-value fish products [7].

For breeding and growing fish by pond fish farming methods, numerous ponds can be used that do not have permanent sources of water supply, but are fed by spring meltwater, rain, less often from small springs and springs, as well as small, including floodplain, lakes. This requires only their appropriate training. From non-drainage ponds, it is necessary to remove firewood, shrubs, bark, hard surface vegetation (if it develops strongly), small weeds and predatory fish. After appropriate preparation, ponds are stocked with carp or carp yearlings. The landing calculation is the same as in ordinary feeding ponds. Similarly, observations of farmed fish are conducted [8].

Intensive aquaculture for carp cultivation. Carp (carp) larvae are obtained according to standard technology using a physiological (pituitary injections) method or with natural spawning in spawning ponds, incubation of eggs is carried out in Weiss apparatuses.

Larvae and fry of carp and herbivorous fish are kept and grown in trays, pools and other containers, as well as (in the early stages) in incubation and growth apparatuses of VNIIPRH. The planting density depends on the body weight and is up to 250 thousand pieces / m^3 [9].

In our country, most fish farmers use HAIDA FISHERY floating carp feed to feed carp larvae. The basis of this feed consists of high—protein products of micro biosynthesis, skimmed fish meal, sodium caseinate, vegetable oil, wheat flour and multivitamin premix. 55, the mass fraction of fat is 6-7, carbohydrates 12-16, moisture 8-10. Half of the protein compounds are restructured.

Feeding of juveniles is carried out during daylight hours. A single portion of feed is distributed evenly over the surface of the water in places where larvae accumulate in artificial lighting conditions.

For growing young carp weighing from 1 to 40 g in pools and cages on

Table 1.

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Daily feeding rate of larvae and fry of cyprinid fish (by body weight), %

Mass of larvae and fry, mg	Water temperature, ^{0}C		
	20-25	25-28	29-32
To 3	50	50	50
3-10	50	60	75
10-50	70	90	80
50-100	50	70	80
100-300	40	50	60
300-1000	25	30	40
1000-2000	15	20	30

in warm waters, compound feed of the recipe 12-80 is used, from 40 to 150 g - compound feed of the recipe 16-80 F; from 150 g to the commercial weigh - compound feed of the recipe 16-82; extruded compound feed RGM-2KE - from 200 g to the commercial weight (with replacement by other modern analogues). Production compound feeds include a wide range of dry feed components of various origins.

Carp is an omnivorous fish, but its favorite food is benthic organisms. Since carp is a peaceful fish, low-value and weedy fish practically plays no role in its diet. To combat carp competitors in the diet, predatory fish are planted in feeding ponds - pike, walleye, asp, sturgeon, etc.

In most fish farms and clusters, carp are grown with a 2-year cycle, including 5 stages of the technological process:

- cultivation and formation of a herd of carp producers;
- getting offspring;
- growing of fingerlings;
- wintering of fingerlings;
- cultivation of commodity two-year-olds.

Results. According to the data obtained as a result of the study, scientists in Uzbekistan, the average productivity of fish brought from abroad, a two-year-old (1+)

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Hungarian breed, grown in cages, is 137 kg / m^3. The viability rate of two-year-old fish is 96-97 %, which indicates that they have adapted well to our hot, dry environmental conditions. And in conditions of semi-intensive natural reservoirs, 5-10 tons of fish are obtained from one hectare. In optimal conditions of feeding and care, in natural reservoirs, from fingerlings (0+), fry with an average live weight of 80-100g, with one seasonal fattening, commercial fish with a live weight of an average of 1.2-1.5 kg is obtained.

Especially these processes are found in the fisheries of the Tashkent region. In recent years, the technology of continuous cultivation has become widespread, excluding the transplantation of fish into wintering ponds

When opening several fish with simultaneous selection of scales from them, it is necessary to determine the state of sexual products and the presence of fat in the abdomen each time to determine the age. When measuring and weighing, determining body weight and exterior indices, the indicators must meet the relevant requirements.

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