ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 7 | Issue: 4 | April 2021|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2021: 8.047 || ISI Value: 1.188

THE POSSIBILITY AND IMPORTANCE OF GROWING FISH IN RICE FIELDS

Yuldashov Murod Khudargonovich
Head of the Department "Methods of Teaching Biology",
Associate Professor, Candidate of Agricultural Sciences,
Navoi State Pedagogical Institute,
Uzbekistan

Yakhshiboeva Damira Tolibkizi
Lecturer of the Department "Methods of Teaching Biology",
Navoi State Pedagogical Institute,
Uzbekistan

Barotov Ulugbek Dilshod ugli
Lecturer of the Department "Methods of Teaching Biology",
Navoi State Pedagogical Institute,
Uzbekistan

Yusupov Doston Fakhriddin ugli
Master, Navoi State Pedagogical Institute,
Uzbekistan

ABSTRACT

This article provides information on the importance and possibilities of increasing the efficiency of fish farming in rice fields in the soil and climatic conditions of Uzbekistan in order to introduce advanced technologies in this area and develop fish and rice farming.

KEY WORDS: ***Fish, fish farming, cage, fingerling, small fry, carp, silver carp, white Cupid, rice, rice farming, rice fields, Spirogyra, cladophora, fillet, Capron.***

I. INTRODUCTION

Fisheries are one of the strategic areas of ensuring food security. Thanks to the measures taken, the share of fisheries in the economy of our country is steadily growing in the coming years. However, there are still many shortcomings and problems in fish farms. Their effective solution involves increasing the activity of the industry, attracting investment, introducing advanced fish farming technologies, increasing export potential, and creating new jobs.

In order to create conditions for further development of the fish industry, improve the system of training and retraining of personnel, improve the quality of scientific and innovative research and development, as well as ensure widespread implementation of their results in practice, the decree of the President of the Republic of Uzbekistan "on additional measures for accelerated development of the fishing industry" No. PP-3657 of April 6, 2018 was adopted. Based on this decree, quite positive work is being carried out in our country to develop fish farming.

To date, more than 3,000 fish farms have been established in the Republic, and in 2020, 166.4 billion sums were allocated for 437 projects for growing fish in these farms. The volume of exported fish products is 446.1 tons, which were estimated at 1.4 million US dollars. Farmers widely use intensive fish farming methods such as closed water circulation systems, intensive small ponds, cages (cages) and fish grown using "rice+fish" methods that are beneficial for human health.

At the same time, special attention is paid to growing agricultural products, increasing exports, introducing modern technologies to the industry and rational use of water resources. However, today the growing water shortage, population growth and other factors related to human influence make it necessary to introduce water-saving technologies for growing high-cost crops.

In accordance with the decree of the President of the Republic of Uzbekistan No. PP-4973

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 7 | Issue: 4 | April 2021|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2021: 8.047 || ISI Value: 1.188

dated February 2, 2021 "on measures for further development of rice cultivation", a number of positive measures have been implemented in the Republic to improve the uninterrupted and efficient system of rice cultivation, storage, processing, sustainable provision of the domestic consumer market with rice products and increase export potential, strengthen research work in this direction and widespread use of water-saving technologies in rice cultivation.

Recently, serious attention has been paid in our country to the practice of growing fish simultaneously with rice farming in order to make integrated use of rice fields. Fish farming in rice fields is widespread in Southeast Asia and was first put into practice. This practice of fish farming was later used in other countries. Especially in countries such as Italy, France, China, Korea, and Indonesia, where rice farms have been established and still operate.

II. METHODS

The first experiments on growing fish in rice fields in Uzbekistan began in 1932. In the 1940s – 1960s, academician A. M. Mukhammadiev extensively studied and applied in practice in the Ferghana valley. According to A. M. Mukhammadiev, with this method, soil fertility increases, the soil is cleared of weeds and at the same time protected from erosion. In the experiment, carp fingerlings were released into a rice field. Carp feed mainly on insect larvae, improving air access to water, destroying the film (curtain) formed on the surface of the water by soft algae, such as Spirogyra, cladophora, filamentous (a type of algae) that prevents the normal growth of rice. Further, the carp in search of food digs the ground to a depth of 10-15 cm and as a result leads to loosening of the land.

When growing fish in rice fields, we have the opportunity to get both rice and fish products for the farm. In such cases, the fish productivity of rice poly reaches from 50 to 100 kg per hectare, and sometimes it can be higher. India, Indonesia, Japan, China, Vietnam and some countries of South and Central America are particularly successful in growing rice and fish products. Because in these countries, rice and fish are the main food items. If you grow fry in rice fields, it will be possible to prepare in advance for the next year the material for the main one fish farming in natural lakes.

Currently, there are two ways to grow fish in a rice field all over the world: 1. Growing fish in combination with rice; 2. Releasing fish after watering rice poly and growing rice. To do this, the rice field must be prepared technologically in advance in accordance with the rule of growing fish. Water must flow through special nylon nets so that foreign fish do not enter the rice field, and feeding fish do not come out. Water from the rice poly should go out into the ditch. Along the edges of the rice poly, ditches are dug, the length of which is equal to the length of the field, the width is 1.0 and the depth is 0.5 m. These ditches they are connected to each other in such a way that the water is directed towards the exit. Fish are collected in these ditches after removing water from the rice poly.

When growing fish in a rice field, special attention is paid to the oxygen and temperature conditions of the water. The shallowness of rice poly, water exchange and weed growth negatively affect the amount of oxygen in the water. Oxidation and putrefaction of organic substances in water leads to the absorption of a large amount of free oxygen, which leads to a decrease in its content in water. In the daytime, as a result of photosynthesis, water is saturated with oxygen (normal saturation is 6.5-8.5 mg / l or 92.8-121.4%), and the water temperature also changes dramatically: during the day it warms up as much as possible, and at night it cools down.

In Uzbekistan, carp are mainly grown in the rice field. It should not be forgotten that in this case, the main determining factor should be considered the technology of rice cultivation. Because the main product is rice, and fish is a by-product. The purpose of its cultivation is to obtain high yields of rice. Because paddy fields are necessarily dried from time to time or before the rice harvest. Therefore, the cultivation of fish in the rice field will continue until certain dates, and basically the calculation is made for receiving 1 centner (100 kg) of fish products from each hectare of rice poly. This method is very convenient when growing a large number of fry for fish farming or for fish farming in natural lakes. In this case, fingerlings are removed from the rice paddy in October and transferred to a wintering pond or released into natural lakes.

In practice, it is known that some farms using this method have brought the yield of fish to 10-15 centners per hectare. In particular, from each hectare of rice poly it was possible to get up to 3-5 centners of carp, up to 3-5 centners of grass carp, up to 3-5 centners of white carp. It is worth paying special attention to the fact that grass carp are not bred as commercial fish in rice fields. Because it has the ability to feed on rice plants as food.

V. A. Meyen conducted experiments on growing carp in rice farms of the Cherkasy region. After fattening up one-year-olds, we managed to grow an additional 46-90 kg of fish products from each hectare of rice fields. In some farms, the fish yield reached up to 176-207 kg per hectare. However, the average weight of two-year-old carp was significantly lower-190-320 g (Meyen, 1940).

In Uzbekistan,in experiments led by academician A. M. Mukhammadiev in a rice field in the Ferghana region, up to 43-81.5 kg of fish products per hectare were obtained from fingerlings. The average weight of fattened fish was 203-500 g.Fish productivity of rice poly is relatively very low (35-70kg/ ha).

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 7 | Issue: 4 | April 2021|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2021: 8.047 || ISI Value: 1.188

Experiments were conducted on the cultivation of carp mainly by breeding fingerlings in a rice field in Tajikistan (Olegova and Yarov, 1955), and the same results were noted as in the Ferghana rice fields. Here, too, the fish productivity did not exceed 35-70 kg / ha.

The main reason for the low productivity of carp grown in the rice fields of Uzbekistan and Tajikistan, as well as the relative unsatisfactory growth of carp in rice fields, is as follows: 50-90% of the fry released in rice fields die - they will become food for frogs, water snakes, dragonfly larvae, water flies. For example, a frog eats an average of 15-20 pieces per day, a dragonfly larva-8-10 pieces, water bugs will eat 5-10 pieces of fry, a Water snake also eats 5-7 pieces with a weight of 8-15 g of fish fry during the day.

It will be advisable to produce small carps, weighing up to 25-30 g. 1-2 thousand pieces per hectare, instead of fry in rice fields. The growing season of a rice plant lasts up to 110-130 days. By October-November, fingerlings reach a weight of 70-94 g, which means an increase of 0.45-0.64 g per day. This gives a good result if fingerlings are used as a material for fish farming in natural lakes or in ponds intended for growing fish.

III. CONCLUSION

Today, most farms in our Republic are working on the basis of this technology, but today the domestic ichthyology is in urgent need of young specialists working on the basis of this technology, who are able to bring it to a qualitatively new level that meets today's requirements. Rice is a favorite food of the Uzbek people. In this regard, its area is significantly increased in the following years. This means that by farming using the rice-fish method, there will be opportunities to grow additional fish products.

In our opinion, this direction, that is, the simultaneous cultivation of plant and animal (fish) products, can be considered as an ideal way to effectively use the land.

REFERENCES

1. *Decree of the President of the Republic of Uzbekistan No. PP-3657- "On additional measures for accelerated development of the fishing industry". 2018 April 6, Tashkent.*
2. *Decree of the President of the Republic of Uzbekistan No. PP-4973 "On measures for further development of rice farming". February 2, 2021, Tashkent.*
3. *Meyen V. A. Bogdanov A. S. "Growing fish in rice fields" - Tashkent, 1935.*
4. *MukhammadievA.M. "Some issues of the importance of hydrological factors in rice farming and the experience of taking into account the role of carp cultivation in increasing rice yield" Tashkent, 1953.*
5. *Khusenov S. K., Niyazov D. S. "Fish Farming" Tashkent - "Publishing houses of the national society of philosophers of Uzbekistan" 2013.*
6. *Kurbanov R. B., Karimov N. A., Yuldashov M. A. - "Recommendation for growing fish in rice fields" Tashkent, 2018.*