Reproductive characteristics of some fish belonging to the carp family

Baxtiyor Baxshilloyevich Toxirov
Muhayo Bafoevna Tagaeva
Farzona Bomurod qizi Boymurodova
Bukhara State University

Abstract: The article discusses the reproductive characteristics of cyprinids in different water bodies and compares them with the characteristics of individual ecological groups, external reproductive characteristics that affect the environment. In addition, it includes an analysis of the use of humpback fish and the development of recommendations for improving fish farming technologies in the future by increasing the mass, viability and productivity of fish. Another goal of our research is to study how the productivity of the studied fish in different water bodies changes, as well as changes in these indicators as a result of artificial feeding.

Keywords: «do'ngpeshona» fish, «zog'ora» fish, flocks, transference, progency

Introduction

The fishing industry is one of the strategic areas of ensuring food security. Because of the measures taken in recent times, the share of fisheries in the structure of the country's economy is steadily increasing. At the same time, there are still many shortcomings and problems in the fishing industry, which need to be solved effectively, increase business activity, attract investments, introduce advanced technologies for fish farming and increase export potential which allows create new vacancies. Creating conditions for the further development of the fishing industry, improving the system of personnel training and retraining, increasing the quality of scientific and innovative research and development, wide implementation of their results, further development of production, fishing of artificial water bodies and fisheries creation of breeding fish stocks by acclimatization of new and tested species of fish to provide; establishment of a modern hatchery for raising breeding fish larvae, increasing the volume of fish fry production, modernization and renovation of existing fish fry breeding ponds; strengthening the feed base by creating modern facilities for the production of full-value and high-protein feeds for their own needs and fisheries, wide implementation of innovative and modern intensive technologies, including the cage (sadok) method, closed increase the volume of fishing due to the increase in the productivity of artificial water bodies and fish breeding in water circulation system devices; first of all, to meet the needs of the population, as well as

to organize modern complexes for processing fish and production of fish products (canned food, caviar, fish meal, etc.) for export to neighboring countries; laboratory analysis of the hydrochemical composition of water, protecting fish from diseases, has become one of the main sources of economic development [1-4].

The main body

The aim of our research work is to study in detail the reproductive characteristics of some carp fish in different types of water bodies, in this way, to compare them according to the indicators of different ecological groups and external factors of reproductive characteristics regarding changes under the environmental influence. Also, based on the principles of integrated use of water, it consists in evaluating the use of «Do'ngpeshona» fish, developing recommendations for further improvement of fish breeding technologies by increasing the weight, viability and productivity of the fish. Another goal of our research is to study how the productivity levels of the studied fish change in different water bodies and the changes in these indicators as a result of artificial feeding.

Standards for the density, ratio of species and the size of fry of white and cypress fish, counted from the Far Eastern fish of the Zarafshan river basins, have been developed; Recommendations for keeping parent fish and preparing them for incubation (prevention of stress) for the process of artificial reproduction (incubation) of white and cypress «Do'ngpeshona» fish have been developed; Over the years, the amount of fish produced per capita of the population of our republic has decreased by 26.1%. Such an unbalanced situation in the development of the network requires further deepening of economic reforms. In particular, it is necessary to provide privately owned fisheries with quality fish fry, equipment and material and technical means, as well as to strengthen the feed base. As a result of these activities, it is possible to increase the production of fish and fish products, and to ensure the continuous supply of the population's demand for fish products [4-7].

After the independence of our republic, in 1994-2003, economic reforms were carried out in the fishing industry and fishing farms were gradually privatized. Nowadays, enterprises of various ownership types are operating in the fishing industry. Fishing from natural reservoirs is carried out by private enterprises and farmers on the basis of lease terms.

In particular, comprehensive measures are being taken to improve aquaculture in our republic. For example, structural changes have been made in the fishing industry in recent years. As a result, the economic, organizational and legal conditions of business management and organization of production in the industry changed radically, and a new system based on market relations was formed. Ultimately, the economic reforms carried out in the sector ensured that fisheries with different forms of ownership were able to operate on the basis of competition. These changes gave

positive results in some regions and enterprises. Based on the above, we believe that the research we are conducting, that is, by studying the reproductive characteristics of fish, has a certain level of practical importance in creating the scientific basis of fish farming in our region [8-11].

The length of life of fish varies. Bichoks (Gobiidae), anchaus (Scopelidae) live more than one year. Belugas live more than 100 years. However, depending on the intensity of fishing, the real age of fish is several tens of years. Some flounder live 50-60 years. In all cases, potential life expectancy is assumed. Due to regular fishing, the life of fish is much shorter.

In fish, as in most vertebrates, after reaching adulthood, growth does not stop until old age. In addition to the above, the seasonality of growth is clearly visible in fish. It grows much faster during grazing in summer than in winter when there is less food. Failure to grow at the same time affects the structure of some of their bones and organs. The period of slow growth corresponds to narrow bands or rings of small cells. When viewed under incident light, they appear darker when viewed under bright transmitted light. During the period of rapid growth, wide rings or layers are formed, which are clearly visible under transmitted light [12-15]. A combination of two - narrow winter rings and wide summer rings - makes an annual ring. Counting these rings allows you to determine the age of the fish.

Determining the age of fish is of great theoretical and practical importance. In a well-organized fishery, determining the age of the fish is a criterion for determining whether the catch is too much or too little. A large share of young fish in the catch and a small share of adults indicate that there is tension and that the catch is extremely large. On the contrary, the large number of adult fish in the catch indicates that the fish stocks are not fully used.

Stages and development of spawned caviar during incubation

It consists in studying the growth of larvae up to the juvenile period. Getting to know the tools used to take body measurements. It consists of learning to determine body indices and determine the level of obesity. Fish are measured in the same way as other farm animals [16]. Carp is the easiest fish to study when it comes to body measurements. The following dimensions are used to measure the body size of fish.

- The total length of the body
- Body length
- Head length
- Body height
- Body circumference and other measurements are taken.

These dimensions mainly indicate the main size of the fish, and body indices are calculated based on these dimensions.

In fish, mainly 5 body indices are obtained

Like other areas of animal husbandry, breeding work in pond fishing is aimed at improving the economic properties of fish bred in the pond, accelerating their growth, paying for food with products, and on this basis, creating new valuable fish breeds. An important task of the breeding work is to provide farms with a sufficient amount of high-quality breeding material - breeding fish in sufficient quantity and high quality to obtain fry and commercial products. In the pond fishing of our country, mainly flounder is caught. Therefore, in this manual, the methods of carrying out breeding work on wheat are considered [17]. In pond fishing, depending on the classification of the scales of the «zog'ora» fish, it is divided into scales, glassy, scales scattered throughout the body, scales located in a straight line from the middle of the glassy body, and naked or skinned (without scales). These types of «zog'ora» fish differs from each other in terms of appearance, genetic characteristics and economic qualities. In the experience of basin fishing, due to the high quality of the economy, the glassy gorse fish, whose scales are scattered throughout the body, are bred. Because of its low productivity and low viability, the naked carp can be bred in the southern regions, and it is not advisable to breed striped carp. In the following years, some progress was made in the breeding of «zog'ora» fish. As a result of complex cross-breeding, Ukrainian breeds of «zog'ora» fish were created. As a result of crossbreeding the carp with the Amur carp, the northern carp (ropshin) was obtained. Breeding work is underway to create the middle Russian breed of «zog'ora» fish. According to the form of breeding work, it is divided into: high-type, selective breeding fisheries, breeding breeders and industrial farms. Specialized high-type breeding fish farms under the methodical guidance of scientific institutions develop methods [18-21] of breeding work taking into account the territorial characteristics of pond fisheries and are engaged in creating new improved breeds and groups of breeds. Breeding inspector - breeder farms form their breeding stock at the expense of a high-type farm stock, the main task of breeding inspectors is to improve the productivity of industrial fisheries in the conditions of extended reproduction of localized fish breeds. Representatives of two pedigree groups (breed, breed group) that are not related to each other are placed in the breeding registers. In this case, nests are selected for male and female fish to fertilize fish of the same origin. Livestock practice testifies to systematic breeding work in each mother herd. Therefore, it is necessary to find opportunities for systematic selection of repair fish and regulation of breeding stock composition in industrial fisheries. In order to increase the quality and productivity of fish in industrial basin fisheries, favorable conditions are created here, systematic selection and improper fish are separated, inbreeding is not allowed, so breeding male fish with other farms in time is replaced [22]. The improvement of brood stock fish in industrial farms provides an opportunity to carry out selection work on a large number of fish compared to the

work of breeding in frames of high-quality breeding farms. Thus, in all forms of basin fishery breeding work, the main goal is to improve the stock of non-breeding farms and thereby increase the amount of commercial fish production.

Breeding methods fish farms use productive fish from private flocks as the initial material for breeding. Reproduction and completion of the mother flock is carried out based on the demand of farms for producing and repairing fish. Production plan of productive fish required for farms is determined by the stock not exceeding 100%. The number of larvae serves for initial calculations. It is determined by 25% of the number of productive young fish.

Selection and mating of producer fish

An important method of breeding work in industrial fisheries is the selection of the total weight of the fish raised for breeding, and it is carried out in three stages: between one-year-old fish; it is carried out when transferring to the group of two-year-old and breeding fish. In the first and second stages, the live weight of the fish (exterior indicators) is taken into account, and in the third stage, the level of expression of signs of sexual maturity is taken into account [23]. The following selection coefficient is adopted (the ratio of fish left for breeding to fish left for rearing) up to 5% for one-year-old fish, up to 10% for two-year-old fish, up to 25% for young mother fish, up to 50% for young male fish is calculated by the following formula: V = n • 100% N; here: V - selection power; n - the number of selected fish; N is the number of fish grown in the farm. Two-year-old fish are selected for breeding from specially bred fish or from ponds with high productivity and live weight. It is necessary to pay strict attention to exterior indicators. During braking (unevenness of the waist, abnormal development of fins, complete or partial underdevelopment of the sacral valves), abnormal development of one or other signs should be monitored separately. Adult repair group fish are selected in the same way as two-year-old fish. When transferring fish from ponds to other ponds, unfit fish are discarded. The selection of fish in the adult maintenance group is based on the expression of secondary sex organs. At the same time as breeding selection, great attention is paid to the mating of breeding fish. They mate according to the "good for good" rule. At this time, attention is paid to the fish's health, exterior, fleshiness, skin cover and other valuable signs for the farm. Inbreeding, which adversely affects their viability and productivity, must be taken into account when selecting and mating productive fish. A 10-15% decrease in the growth rate was found when the first generation of sardines is mated with siblings. Especially in small fish farms, there is a shortage of productive fish. In order to eliminate the effect of inbreeding, it is recommended to replace the breeding fish with other farms or to use the two-line breeding method. In breeding, great attention is paid to age-matching. The results of research conducted on many types of fish have shown that the use of middle-aged

fish gives good results. It is not advisable to use young and old fish, especially for breeding. The method of creating all new breeds of fish productivity is hybridization. Cross-breeding, intra-species [24-26] and inter-species hybrids are used in basin fisheries. Hybridization has a number of advantages in many situations.

Conclusion

Summing up from the above, it can be said that the reproductive characteristics of fish include the following biological indicators:

a) puberty;

b) laying seeds - nyerest;

c) productivity levels;

s) size of caviar;

d) relationship between reproductive characteristics and fish growth.

When talking about the characteristics of fish maturation, experts pay attention to the following: oogenesis, gonadogenesis, and the age and growth rate of fish during puberty. In this regard, there is sufficient information in the literature on these parameters of carp fish. The reproductive characteristics of female fish are mainly taken into account.

One of the key reproductive characteristics of fish is the weight of the eggs they have matured in their ovaries, readying them for release during this breeding season. This size determines the developmental characteristics of the gonads of fish and is generally accepted in ichthyological studies.

In ichthyologic studies, among the reproductive indicators of fish, their productivity is the most important indicator. Productivity is one of the most important biological indicators of any species. There are several types of fertility in sexually mature fish. These are: absolute productivity, that is, the number of eggs laid by female fish in one breeding season; relative productivity - the number of spawns in relation to the body mass of fish; population productivity is the total number of eggs laid by female fish in the entire population in one breeding season.

References

1. M.Asqarov, B.Oyxo‘jaev, A.Alovuddinov. «Polimerlar ximiyasi» Tashkent. 1981.

2. Raxmanberdiev G.R., Muradov. M.M. «Polucheniya sellyulozi iz otxodov drevesini topolya sredneaziatskogo regiona» Tezisi dokladov mejdunarodnoy konferensii po ximicheskoy texnologi. –Moskva, 2007. Tom 5. –S. 166-167.

3. Mikrokristallicheskaya sellyuloza v nachestve sredi dlya lekarstv. Takogo Ximixiko. Aoyanagi Tesuya, Tamada Akimitsu. Zayavka 54-20126 (YAponiya). – Opubl. 15.02.79. RJ ximiya, 1980, -P. 283.

4. Sposob polucheniya mikrokristallicheskoy sellyulozi, ispolzuemoy dlya izogotovleniya nazkakaloriynix pishevix produktov i spershiy. Matella V, Dousova J, Vondakova S, Tichka T, A. 182527. Jpusob vyroby mikrokrystallike ellulozy, vhodne zejmene pro pripravu potravin s nizkou energetikou vydatnosti a jinych potravin a pachution. –Opubl. 15.04.80. Ximiya, 1981, -T.4. –P. 299.

5. Sposob poluchenie mikrokristallicheskoy sellyulozi. Koch S, Zalewski S, Sledleka P, Skorak Z, Gruduk R, Pam 112067. Sposob wytwarzanta sellulose mikrokristallize. –Opubl. RJ ximiya, 1982, T.22. –P. 28.

6. P.Tojiev., M.Murodov. «Isledovanie svoystv voloknistix polufabrikatov prednaznachennix dlya polucheniya Na-KMS» // Kimyo va kimyo texnologiyasi jurnali. – Toshkent, 2010. -№2. – S. 55-58.

7. Б.Б.Тохиров. Биотехнология биологической и химической очистки воды завода Бухарского нефтеперерабатывающего завода //Центр научных публикаций (buxdu. Uz). – 2020. – Т. 1. – №.

8. Б.Б.Тохиров., Д.Р.Тешаева. Характеристика растений, обогощающие фитосанитарное состояние джайлау Кызылкума //Вопросы науки и образования. – 2018. – №. 10 (22). – С. 21-22.

9. Б.Б.Тохиров., З.Б. Рахматова. Аквакультура растительно-рыбного откорма и выращивания //Международный журнал по маркетингу и технологиям. – 2020. – Т. 10. – №. 9. – С. 5-9.

10. B. B. Toxirov. Практическая значимость чистой хлореллы для рыбного хозяйства //Ученый XXI века, международный научный журнал. – 2017. – Т. 1. – №. 1. – С. 28.

11. M. O. Mamurova, B. B. Tokhirov, M.B.Tog'aeva, Z. Rakhmatova. The role of enzymes in biotechnology //International Journal of Marketing and Technology. – №. 09. – С. 14-17.

12. B. B. Toxirov, B.F.Aripov, N.N.Tolibova. Determination Of Zooplanctons In Dengizkol Lake And Their Use In Fishing //JournalNX. – Т. 6. – №. 10. – С. 310-311.

13. Б. Б.Тохиров, Н. А. Шамсиев, Г. В. Бахшуллайева. Условия размножения некоторых промысловых видов рыб озера Аякагитма //Ученый XXI века, международный научный журнал. – 2016. – №. 5-1.

14. Б. Б. Тохиров. Биотехнология биологической и химической очистки воды завода Бухарского нефтеперерабатывающего завода //Центр научных публикаций (buxdu. Uz). – 2020. – Т. 1. – №. 1.

15. Б. Б. Тохиров. Практическое значение микроскопических водорослей в сельском хозяйстве //Ученый XXI века. – 2017. – С. 32.

16. Б. Б. Тохиров. и соавт. Инкубация растительно-рыбных рыб и эффективность их кормления //Международный журнал по маркетингу и технологиям. – 2020. – Т. 10. – №. 9. – С. 10-13.

17. Б. Б. Тохиров и соавт. Динамика активности ферментов в засоленных почвах // ДИНАМИКА. – 2020. – Т. 6. – №. 10.

18. B. B. Toxirov. Dorivor o'simliklarning o'ziga xos xususiyatlari haqida yangi ma'lumotlar //Science and Education. – 2022. – Т. 3. – №. 1. – С. 112-118.

19. B. B.Toxirov, S. R. Raxmatov. O'simliklar morfologiyasi //Science and Education. – 2022. – Т. 3. – №. 1. – С. 98-104.

20. Б.Б.Тохиров. Навоий вилоятидаги Тўдакўл сув омбори зоопланктонлари ҳақида маълумотлар //Science and Education. – 2022. – Т. 3. – №. 1. – С. 105-111.

21. Б.Б.Тохиров, Ш.Шукурова. (2022). Классификация ферментов. Европейский журнал бизнес-стартапов и открытого общества 2 (5), 37–39. Получено с http://www.inovatus.es/index.php/ejbsos/article/view/823.

22. Б.Б.Тохиров, М.Б.Тагаева. Роль микробиологических биопрепаратов в сельском хозяйстве //Наука и инновации. – 2022. – Т. 1. – №. 8. – С. 271-279.

23. Б.Б.Тохиров и соавт. Производство натуральных кормов для рыб и подготовка рыбоводного бассейна //Европейский журнал бизнес-стартапов и открытого общества. – 2022. – Т. 2. – №. 5. – С. 43-45.

24. Б.Б.Тохиров, Д. Розикова. Общие сведения о структуре и химическом составе биологической мембраны //Европейский журнал бизнес-стартапов и открытого общества. – 2022. – Т. 2. – № 5. – С. 27-30.

25. Б. Б.Тохиров, Ф.Боймуродова. Биоэкология рыб семейства карпсимоновых //Европейский журнал бизнес-стартапов и открытого общества. – 2022. – Т. 2. – №. 5. – С. 9-10.

26. Б.Б.Тохиров, М.Муродова. (2022). Лечебные свойства арабского финика. Европейский журнал бизнес-стартапов и открытого общества , 2 (5), 25–26