15(3): 010-011 (2021)

Journal of FisheriesSciences.com

E-ISSN 1307-234X

© 2021 www.fisheriessciences.com

Editorial

Editorial Note on Common Carp

Rebeaca Frosty

Department of Fish, and Conservation Biology, University of California, Davis, USA

Received: 03.05.2021 / Accepted: 17.05.2021 / Published online: 24.05.2021

Abstract

he carp was a luxury food in the middle and late Roman period, and it was consumed during fasting in the middle Ages. The fish were kept in storage ponds ('piscinae') by the Romans, and later in fish ponds constructed by Christian monasteries. In this European practice the carp were kept in monoculture. The largest individuals were selected as broodfish. From, the 12th to the mid-14th century A.D. unintentional artificial selection had taken place, the first steps towards domestication. Controlled semi-natural pond breeding and fry rearing of carp started in the 19th century in Europe. Cyprinids have been reared in China for more than 2 000 years, where they were kept in undrainable ponds. The ponds were stocked regularly with fry from rivers. Natural food-based polycultural rearing technology was applied. Semi-domesticated carp races have developed in this system. Domesticated carps have been produced in most of the carp rearing areas recently. There are about 30-35 strains of domesticated common carps in Europe. Many strains are maintained in China. There are some Indonesian carp strains, which have not been scientifically examined and identified so far.

Wild common carp (generally referred to as 'carp' in this fact sheet) live in the middle and lower streams of rivers, in inundated areas, and in shallow confined waters, such as lakes, oxbow lakes, and water reservoirs. Carp are mainly bottom dwellers but search for food in the middle and upper layers of the water body. Typical 'carp ponds' in Europe are shallow, eutrophic ponds with a muddy bottom and dense aquatic vegetation at the dikes.The ecological spectrum of carp is broad. Best growth is obtained when water temperature ranges between 23 °C and 30 °C. The fish can survive cold winter periods. Salinity up to about five per cent is tolerated. The optimal pH range is 6.5-9.0. The species can survive low oxygen concentration (0.3-0.5 mg/litre) as well as supersaturation.

Carp are omnivorous, with a high tendency towards the consumption of animal food, such as water insects, larvae of insects, worms, molluscs, and zooplankton. Zooplankton consumption is dominant in fish ponds where the stocking density is high. Additionally, the carp consumes the stalks, leaves and seeds of aquatic and terrestrial plants, decayed aquatic plants, etc. The pond farming of carp is based on the ability of the species to accept and utilise cereals supplied by the farmers. The daily growth of carp can be 2 to 4 per cent of body weigh. Carps can reach 0.6 to 1.0 kg body weight within one season in the polycultural fish ponds of subtropical/tropical areas. Growth is much slower in the temperate zone: here the fish reach the 1 to 2 kg body weight after 2 to 4 rearing seasons.

In Europe, female carp need about 11 000 to 12 000 degree-days to reach maturity in the temperate and subtropical climatic zones. Male carp are matured within a period that is 25-35 per cent shorter. The maturity period of Asian carp strains is slightly shorter. The spawning of European carp starts when the water temperature is 17-18 °C. Asian strains start to spawn when the ion concentration of the water decreases abruptly at the beginning of the rainy season. Wild carps are partial spawners. Domesticated carps release all their matured eggs within a few hours. After hormonal treatment carp release their ripe eggs within a much shorter period, which makes stripping possible. The quantity of released eggs is 100 to 230 g/kg body weight. The egg shell becomes sticky after contacting water.

Conclusion

The embryonic development of carp takes about 3 days at 20-

***Correspondence to:** **Frosty R,** Department of Fish, and Conservation Biology, University of California, Davis, USA, E-mail: Rebeacafr@gmail.edu

23 °C (60-70 degree-days). Under natural conditions, hatched fry stick to the substrata. About three days after hatching the posterior part of the swim bladder develops, the larvae swim horizontally, and start to consume external food with a maximum size of 150-180 µm (mainly rotifers).

This is the most effective and reliable method of seed production. Broodfish are kept in water saturated with oxygen, within the temperature range of 20-24 ºC. They are given two doses of pituitary gland injection, or a mixture of GnRH/dopamine antagonist, to induce ovulation and spermiation. The eggs are fertilized (applying the 'dry method') and the adhesiveness of the eggs is eliminated using salt/urea treatment, followed by a tannin acid bath (the 'Woynarovich method'). Incubation is carried out in Zoug jars. The hatched fry are kept in large conical tanks for 1 to 3 days, and are usually stocked at the stage of 'swim-up' or 'feeding fry' into properly prepared ponds. Approximately 300 000 to 800 000 newly hatched fry can be expected from a single female.