

INDUCED BREEDING OF *CIRRHINA MRIGALA* (HAM.) USING CATFISH PITUITARY EXTRACTS

K. K. RISHI AND M. KAUL

Department of Zoology, Kurukshetra University,
Kurukshetra 132 119, India.

IN India, considerable progress has been made in the induced breeding of indigenous and exotic carps by administering fish pituitary extracts (both homoplastic and heteroplastic)¹⁻⁶. The pituitary donors have been mostly the carps. Reports on the use of catfish pituitary for the spawning of Indian major carps are very few⁷⁻⁸.

During 1982, successful experiments were conducted on the breeding of *C. mrigala* by administering intramuscularly pituitary extracts of the freshwater catfish, *Wallago attu*. Donor fishes collected from the ponds of suburban areas and well preserved in ice, were used for the collection of pituitaries. The duration between the capture of the fish and removal of their pituitaries was 5-6 hr and the average weight of the donor was 3 kg and that of the gland obtained was

20 mg. The pituitaries were taken out without any bias for the sex of the donor and were preserved and processed according to the standard procedure.

Successful spawning was possible when females of *C. mrigala* received two injections, the first provocative dose (at 6 p.m.) of 15 mg/kg body weight and the booster dose of 25 mg/kg body weight, 6 hours later. The males received only one dose of 15 mg/kg body weight at the time corresponding to the booster dose administered to the female. During the experiment the ambient water temperature ranged from 26-28°C and the weather was cloudy. Two males and one female were kept in the breeding hapa for each experiment.

The results are significant as they reveal that—

(1) The catfish, *Wallago attu*, which occurs widely in local habitats and fish markets can be used as a substitute for the carps (as the pituitary donors).

(2) The pituitaries collected from the catfish during May, June and July gave equally good results suggesting that even the partially ripe catfish can be the pituitary donor as the differences in the potency of the pituitaries during these months seem to be insignificant.

(3) Pituitaries collected from the fish market and preserved in ice for 5-6 hr can be effectively used for administration (as donors).

The authors wish to express their gratitude to Dr. S. P. Sharma, for facilities. They are also grateful to Shri K. L. Shah and Shri Tyagi of the Fish Seed Farm, Karnal for providing the brooders of *C. mrigala* and other field facilities. Financial help to one of us (MK) received from C.S.I.R. is also acknowledged.

7 September 1982; Revised 16 November 1982

TABLE 1

Observations on the use of catfish pituitary extracts in the induced breeding of *C. mrigala*.

Expt. No.	Pituitary collected in	Dosage of pituitary (mg/kg)			Results
		Female	Male		
		Provaca-tive dose	Booster dose	Single dose	
1.	July.	15	25	15	Fish spawned 5 hr after the booster dose. Spawning and fertilization normal.
2.	June.	30	—	15	Fish spawned 4 hr after the first injection. 1% fertilization
3.	May.	15	25	15	Fish spawned 6 hr after the booster dose. Spawning and fertilization normal.

1. Chaudhuri, H. and Alikunhi, K. H., *Curr. Sci.*, 1957, 26, 12.
2. Chaudhuri, H., Singh, S. B. and Sukumaran, K. K., *Proc. Indian Acad. Sci.*, 1966, 63, 80.
3. Alikunhi, K. H., Vijayalakshman, M. A. and Ibrahim, K. H., *Indian J. Fish.*, 1960, 7, 1.
4. Chaudhuri, H., *Proc. Natl. Inst. Sci. India*, 1963, B29, 4.
5. Alikunhi, K. H., Sukumaran, K. K., Parameswaran, S. and Banerjee, S. C., *Bull. Cent. Inland Fish Res. Inst. India*, 1964, 3.
6. Chaudhuri, H., Singh, S. B., Sukumaran, K. K. and Chakrabarti, P. C., *Sci. Cult.*, 1967, 33, 493.
7. Shetty, H. P. C., *FAO aquaculture Bulletin*, 1973, 6, 5.
8. Bhowmick, R. M., Kotwal, G. V., Jana, R. K. and Gupta, S. D., In: *Symp. on Inland Aquaculture (Abs.)*, February 12-14, 1979, 10 CHERI Barrackpore.