A Comparative Account on the Induced Breeding of 'Macrones Cavasius' by Pituitary extract and ovaprim

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Abstract :

Experiments were conducted on males and females of Macrones cavasius by injecting pituitary extract and ovaprim to observe the effect of ovaprim during induced breeding.The results were satisfactory and enhancing and spawning took place within 9-16 hr with 90% overall fertilization.The present study suggests that ovaprim is best substitute for pituitary extract during induced breeding.

Keywords: *Pituitary extract, Ovaprim, Induced breeding, Macrons cavasius*

Introduction :

In Maharashtra only the major carps are cultured. The carp culture improves the social and economical status of farmers by adopting new scientific technology for breeding. However the major problem in carp culture is the non availability of quality fish seed. In early years fishes were collected from river coasts by cloth happas, but this technique was unsafe as with the collection of carp seed, some seeds of predatory fishes were also collected accidently.

Choudhary and Alikunhi (1957) for the first time successfully carried out the spawning of Indian major carps with induced breeding by pituitary extracts. This technique was then used all over India but quality of pituitaries used for preparing the extracts become undependable and because of this problems are occurred and failure of spawning results in many farms.

In 1985 HCG (Human Chorionic Gonadotropin) was then used as a substitute for pituitary gland but it could not get the success as it was thought (Chondar, 1985). The search for a suitable substitute was going on and then after ovaprim was introduced in the market as a substitute for pituitary gland. All the farmers/fish breeders readily showed acceptance for this drug (Nandesha, et.al.1990). Ovaprim utilizes the fish own hormonal control mechanism to safely induce maturation and co-ordinate spawning dates. Ovaprim contents analogue of salmon GnRH, and dopamine inhibitor required for culturable species. The present investigation was conducted to as certain comparative effect of pituitary extract and ovaprim in Macrones cavasius.

Material and Methods:

All the experiments were performed in Chinese hatchery. Mature females and males were selected on the basis of their external secondary sexual characters (Jhingran and pullin, 1984). Ten females and 5 male control fishes were injected with carp pituitary with two doses for females accordingly 4 and 8 mg/kg at an interval of 4 hours and a single dose for the males 4 mg/kg per kg at the time of second injection to the females. 0.4 ml/kg per kg dose of ovaprim was given to 10 females and 0.2 ml per kg dose to 5 males only a single dose of ovaprim was given to both the sexes.

Result & Discussion:

Experiments were conducted in July or August with temperature around 27^0 C little showers of rain and weather is useful for breeding. Control fishes injected with pituitary extract spawned after 16 hr. while females injected with ovaprim spawned within 9 hrs. The positive responses of macrons cavasius to ovaprim indicate the higher potency of this drug in inducing the spawning. Cirrhina mrigala have seen reported to spawned with 10 mg of pimozide (Kaul and Rishi, 1986) and results obtained from ovaprim is supported by results of the trails in 1988 and 1989 (Nandeesha, et.al.1990). Certain drugs have been tested for induced spawning in fishes with variation in the percentage of success (Harvey and Hoar 1979).

Sr. No	Month	Temperature	Pituitary extract Spawning time	Ovaprim Spawning time
1	July/Aug	27^0C	16 hr	9 hr

The number of egg count in control was 14.laks with over all fertilization 60% and with ovaprim injected fishes egg were 21.54 lack with over all fertilization of 91%. The failure of spawning by various extracts revealed that dopamine inhibitor plays an important role in syntheses of gonadotropin (peter, at.al.1986).

In this study only single dose of ovaprim induced spawning with in 9 hrs while the controls females given two doses of pituitary extract still there spawning delayed and requires 16 hrs. Fertility was found less than those of the ovaprim injected (peter 1986). In India most of the breeders have seems performing Ovaprim is effective in induced

spawning because it contains a salmon GnRH, native peptide found in most teleosts, also contain a dopamine inhibitor (brain neurotransmitter) our result indicate that ovaprim might be considered best substitute over pituitary extract during Induced breeding.

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