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The effect of 17 α -methyltestosterone on the sex of the common carp, *Cyprinus carpio* (L.)

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Summary. Dip treatment of fertilized eggs of *Cyprinus carpio* (L.) in 17 α -methyltestosterone, followed by dietary administration of the same to the hatchlings over 50 days resulted in 54% males, 13% females and 33% sterile fish, while in the control group both sexes were in nearly equal numbers. The androgen-treated fish also showed better growth.

The common carp, *Cyprinus carpio*, is an important species used in composite fish culture in India. However, its 'wild spawning' in culture ponds has been found to affect the pond's yield adversely². Studies conducted at the College of Fisheries, Mangalore, have revealed that by administering 17 α -methyltestosterone (200 ppm) over 131 days, starting from the 2nd day after hatching, it is possible to produce a brood consisting of only male and sterile fish³. Since the duration of treatment in that experiment was too long for field application, an attempt was made to reduce the treatment period to 50 days.

The fish was induced, induced-bred the developing eggs in the gastrula stage were given a dip-treatment in an aqueous solution of 17 α -methyltestosterone (17 α -MT) at a concentration of 200 ppm for 1 h. The resultant hatchlings were maintained on a feed containing the same hormone at 200 ppm over 50 days, starting from the 2nd day after hatching. They were also given small quantities of plankton during the first week only.

The fry were reared in plastic pools during the treatment period of 50 days and were later transferred to cement cisterns (50 m²) for further rearing over another 72 days on a hormone-free diet.

On termination of the experiment, the length and weight of all the fish were recorded and their gonads dissected out and sexed, following the methodology described elsewhere³.

The androgen-treated group had 54% males, 33% sterile fish and 13% females, while the control group had 51% males and 49% females. The growth rate and survival of the treated fish were found to be consistently better than those of the controls. The fish classified as 'sterile' had only

filiform gonads, which on histological examination did not show any germ cells. However, a few enlarged cells, resembling the germ cells, were encountered in a few filiform gonads.

The results of this investigation clearly demonstrate the possibility of reducing the period of hormonal treatment. In the earlier work on common carp, treatment with 17 α -MT (200 ppm) over a period of 131 days was found to be effective in producing a population completely devoid of females³. Even though this could not be achieved in the present work, it has clearly indicated the possibility of reducing the period of hormonal treatment considerably. It appears highly probable that a completely female-free population could be obtained with only 50 days of hormonal treatment or even less by increasing the dosage. Another possible reason for the occurrence of females in the present study could be that the hatchlings initially fed more on the plankton given than on the hormone-containing diet. Therefore, reducing plankton food to only the first couple of days might yield better results.

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Alloxan-induced hyperglycemia increases progesterin and androgen accumulation by isolated rabbit follicles in vitro¹

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Summary. Follicles isolated from Alloxan-treated rabbits and incubated in vitro, accumulated more progesterone and testosterone than those from saline-treated rabbits. LH augmented the accumulation of these 2 steroids. By contrast, the estradiol response to LH stimulation by follicles from Alloxan-induced hyperglycemic rabbits was diminished when compared to follicles from saline-treated rabbits. Ovaries from hyperglycemic rabbits also appeared to have more cystic follicles.