A study of chromosome morphology was conducted in gynogenetic rohu (Labeo rohita) produced through mitotic gynogenesis by the suppression of the first cleavage in the activated egg and in rohu produced by fertilising with cryopreserved milt. In the former case, the chromosomes are expected to be homozygous at all loci (Mair et al., 1986; Streisinger et al., 1991). Certain isozyme studies need to be conducted in this regard. Mair et al. (1986) assessed the homozygous level in mitotic gynogenetic tilapia (Oreochromis niloticus). They observed that all progeny that resulted from the late heat shock treatments (mitotic gynogens) were homozygous, while treatment with early heat shocks (meiotic gynogens) resulted in 50% heterozygous individuals.

Lowering the temperature of the medium where gametes are kept or giving a thermal shock to gametes may cause stress to the gametes, in turn it may affect its genetic make up. To know whether thermal or pressure shock induces any chromosomal aberration, studies were carried out on mitotic gynogenetic rohu and rohu produced by fertilising with cryopreserved milt. In the latter case, i.e., rohu from cryopreserved milt origin, the study was carried out to find out the physical nature of chromosomes. Certain chemicals are known to induce aberrations in chromosomes (Behera and Bhuyan, 1986; Manna and Mukherjee, 1986). Since the milt is preserved in liquid nitrogen for several months or sometimes even years, it was thought appropriate to examine the chromosomes of such individuals for any possible aberrations and ensure the normal morphology of the chromosomes.

The specimens were first reared in the wet laboratory to try size and later in the ponds to fingerling size. The study of chromosomes was conducted in both the cases by following the technique described by Reddy and Tantia (1992).

The study shows that the chromosomes of mitotic gynogenetic rohu did not exhibit any apparent morphological differences when compared to normal ones. However, the staining intensity was observed to be slightly lighter when compared to the normal ones when stained in the same concentration of Giemsa stain. It was not understood whether this tendency has anything to do with the homozygous nature of the fish chromosomes in gynogenetic rohu. The chromosomes in rohu produced by cryopreserved milt did not show any apparent morphological differences when compared to normal rohu. No chromosomal aberrations, however, were noticed in any case (Fig. 1).

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Fig. 1. Karyogram showing chromosomes of rohu raised in different methods

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