

D-49: Stimulating breeding of common carp (*Cyprinus carpio*) in a natural environment

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Common carp is a popular and relatively cheap food fish cultured in ponds and reservoirs of Sri Lanka. The reproductive pattern of common carp under natural conditions was analysed over a one year period using changes in monthly gonado-somatic indices, oocyte diameter, histological observations and monthly composition of maturity stages.

Spawning was correlated to rainfall ($r = 0.69$, $p < 0.01$) which varied widely ranging from 7.1 mm to 261.0 mm. Year round breeding occurred, with four spawning peaks corresponding to the onset of heavy rain and other observable synchronous factors such as a rise in water level, and freshly submerged vegetation for egg deposition.

Under natural conditions, survival of eggs could be promoted using egg collectors called Kakabans. Kakabans made of bundles of either fibrous or plant material with approximately comparable average surface areas revealed that egg deposition per bundle was significantly higher ($p < 0.05$) on clean, fibrous substrates (i.e coconut *Cocos mucifera*, kitul *Caryota urens*) than on plant material (guinea grass *Panicum maxicum*, or pilla creeper leaves (*Tephrosia purpuria*) the tactile rubbing of lignified fibres on the ventrum of the fish probably being a good stimulant for egg laying.

The possibility of providing environmental stimuli through a combined approach increase natural spawning frequency on "kakabans" such as by using edible plants and aquatic macrophytes known to promote fish breeding like the water hyacinth (*Eichornia crassipes*), or else stimulating rain in the vicinity by creating an overhead water spray, inducing water currents and lowering and raising the water level is highlighted.

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