



Optimization of Stocking Density for Duckweed (*Spirodela polyrrhiza* L.Schleiden) Fed Semi-intensive Carp Poly-Culture System

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Abstract: An outdoor experiment was conducted to assess productivity of non-duckweed fed (NDWF) and duckweed (*Spirodela polyrrhiza* L.Schleiden) fed (DWF) semi-intensive carp poly-culture systems, stocked with Indian major carps (*Catla catla* Ham., *Labeo rohita* Ham and *Cirrhinus mrigala* Ham) and exotic carps (*Cyprinus carpio* Linn. and *Ctenopharyngodon idella* Val.). Fish in NDWF group was fed daily with green fodder (Maize/Berseem) @ 5% body weight (BW) of grass carp (*C. idella*) and dry diet (rice bran + mustard meal 1:1) @ 1.5% BW of fish other than grass carp, while fish in DWF groups was fed daily with fresh duckweed @ 20% BW of grass carp (*C. idella*), catla (*C. catla*) and common carp *C. carpio* for 135 days. Duckweed feeding did not affect water quality in DWF groups and supported optimum zooplankton production up to stocking density of 12,500 fry ha⁻¹. Survival of fish in DWF groups remained unaffected up to stocking density of 12,500 fry ha⁻¹, but declined at stocking density 15,000 fry ha⁻¹. Duckweed feeding supported higher growth in *C. catla* and *C. idella*, while growth of *C. mrigala* and *C. carpio* remained unaffected. However, growth of *L. rohita* declined significantly in all the DWF groups.

Keywords: Aquaculture, Fish, Grass carp, Growth, Productivity, Survival, Water quality
