**Evaluation of Density in a Live Holding System for Food Size Channel Catfish,** *Ictalurus punctatus.*

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Distributing locally grown food fish live may provide aquaculture producers in Kentucky a more profitable market opportunity than selling fish as a commodity. Holding fish live in recirculating systems will be required for this pathway to be successful. In this study investigators evaluated water quality and physiology of Channel Catfish, held live at two stocking densities: 20 kg/ m3 and 40 kg/ m3.

Catfish with a mean weight of 0.76 kg were stocked in recirculating aquaculture systems with a 17 L bead filter after simulated hauling for five hours. Water quality for each holding tank was measured at stocking (Time 0), and daily thereafter (24, 48, 72, 96, 120, 144, 168, and 192 hours). Total ammonia nitrogen, nitrite, nitrate, temperature, dissolved oxygen, pH and conductivity was measured daily while alkalinity, hardness, CO2 and turbidity was measured every other day.

Total ammonia nitrogen increased over time at the higher density. In both treatments, alkalinity and pH declined over time. With this reduction, unionized ammonia peaked at 48 hours and remained below .005 mg/L thereafter. An average water temperature of 25⁰C was conducive to biofilter performance.

With respect to low and high density treatments, mean shrinkage by weight was 8% and 7%; and mortality was 4.6% and 1%. Bites and scrapes were evident on fish during the experiment.