Fish Culture

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Best Management Practices for Channel Catfish Culture

In 2010, we evaluated the influence of pond cleaning regimes on fish production variables in 1.0-acre production and 0.1-acre research ponds. In the past, our standard pond cleaning protocol was to fully clean all organic matter from the ponds prior to stocking channel catfish. As organic matter breaks down, it uses oxygen. Because oxygen is often limiting during the culture of catfish, pond cleaning was viewed as a beneficial practice. However, the disadvantage to pond cleaning is that the organic matter on the pond bottom is abundant with aquatic invertebrates that are potential prey for catfish after they are stocked. In research scale (0.1-acre) ponds in 2009, we evaluated the effect of fully-cleaned (FC) or partially-cleaned (PC) ponds on fish production variables. In PC ponds, half of the pond bottom was cleaned with the other half being left uncleaned. In the 2009 study, catfish reared in PC ponds had similar survival and size at harvest compared to catfish reared in FC ponds. These results warranted evaluation of partial cleaning in 1.0-acre production ponds and also the possibility of uncleaned ponds in research-scale experiments.

Similar to our 2009 results, there was no difference in final length of catfish reared in either PC or FC ponds in a production-scale study in 2010. Additionally, survival was similar among PC and FC ponds (81.4% vs 84.0%).

We compared catfish production performance in 0.1-acre research ponds that were either FC and non-cleaned (NC). The catfish reared in NC ponds had a similar survival rate (85.6%) compared to catfish reared in FC ponds (88.4%). Results of this research show promise to potentially eliminate the need to completely clean ponds prior to catfish fingerling stocking; however, further research on a production scale is warranted.

Catfish fingerlings are fed daily during pond culture; however, they are rarely observed feeding until the end of the first month of culture. In the past, catfish were fed four times per day until feeding was observed, then they were gradually acclimated to once daily satiation feedings. However, the importance of feeding frequency on catfish production performance had not been evaluated at Rathbun. In 2010, we compared feeding catfish only once per day to the standard four feedings per day in production-scale pond study. Harvest survival or length of catfish were not affected by initial feeding frequency. Thus, labor devoted to frequent catfish feedings could be directed to other hatchery tasks. Since organic matter in the pond is a source of prey items for catfish, then initial feeding frequency could be affected by the extent of pond cleanliness. This interaction may warrant further investigation.