

## **Better Diets and Culture Environments Will Increase Hatchery Production of Walleye**

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Currently, there is an increasing demand for Iowa fish hatcheries to produce larger, higher quality, fingerling fish for maintenance, restoration, and enhancement of fishery resources. It has been shown that, when stocked into the wild, larger, pellet-reared walleye have better survival rates than smaller, pond-reared fingerlings. Work to improve the science of growing walleye on formulated diets to advanced fingerling stages has been, and is continuing to be conducted at the Rathbun Fish Culture Research Facility. In 2004, our studies concentrated on the evaluation of diet and culture environment to improve growth rates of walleye, thereby enhancing their size at stocking and post-stocking survival.

Last research season, the growth of walleye fed an experimental diet, Walleye Grower 0401 (WG 0401), was compared to our standard fingerling walleye diet, Walleye Grower 9206 (WG 9206). At the termination of the 70-day trial, walleye fed WG 9206 were longer and heavier than those fed WG 0401. Mean final length for walleye fed WG 9206 was 199.1 mm (7.8 in), while the average final length for fish fed WG 0401 was 192.7 mm (7.6 in). Additionally, walleye fed WG 9206 had an average final weight of 64.3 g, whereas the walleye fed WG 0401 only had an average final weight of 61.1 g. Both groups of walleye had excellent survival rates, ranging from 98.4% to 99.4%.

In a separate 70-day study, the effect of culture environment on walleye growth and final size was evaluated. In this trial, the growth of walleye was compared in standard raceways and circular tanks (both exposed to overhead light), and covered raceways with submerged lighting (CSL). Walleye cultured in CSL raceways and circular tanks proved to be significantly larger than those produced in standard raceways. Walleye reared in CSL raceways or circular tanks were, on average, 3.3% longer and 18.6% heavier than those reared in standard raceways. In addition to the performance advantages afforded by circular tanks, they also provided cleaner rearing conditions and were not as time consuming to clean on a daily basis.

Further investigation into the effects of diet on the growth of walleye will continue as we aim to increase the productivity and efficiency of our Iowa state fish hatcheries.