DELAWARE STATE UNIVERSITY
COOPERATIVE EXTENSION PROGRAMS

Baitfish Aquaculture

High land costs and the lack of established aquacultural success are major obstacles in the development of an aquaculture industry in Delaware. Options that could allow on farm diversification and provide the local farming community with additional market opportunities are needed if aquaculture is to thrive in the mid-Atlantic. To this end, alternative crops and management techniques that minimize disruption of current farming practices and maximize available resources on each farm are sought. Baitfish aquaculture is one option.

Baitfish culture in the Northeast is currently limited both in the number of farms and species being produced. In 1998, only 62 farms in the region were growing baitfish; the majority of these were in Maine and New York. These farms produced primarily golden shiners (*Notemigonus crysoleucas*) and fathead minnows (*Pimephales promelas*) (Lazur et al. 2003).

Data from the USDA's 1998 Census of Aquaculture (USDA-NASS 2000) indicate that more than 60% of aquacultured baitfish in the United States are produced in Arkansas alone. The popularity of recreational fishing along the Atlantic coast, coupled with the surging population growth in this area, provide significant market potential. This demand has been filled through a combination of wild caught bait and aquacultured fish from other regions. Lazur et al. (2003) state that "Bait production represents a major opportunity for small and medium-sized growers in the region."

Baitfish generally require less space and offer a higher market price than foodfish crops (Lazur et al. 2003). Therefore, baitfish have the potential to provide an additional revenue source for existing small farms. Like any manufactured good, baitfish is sold many times before it reaches the final consumer and the price increases with each sale. Small-scale, local producers may increase profit margins by selling directly to retail outlets or to fishermen.

Two recent papers published by the Northeastern Regional Aquaculture Center (Lazur et al. 2003; NRAC 2003) identify the opportunities for baitfish culture in the Northeast. Locally produced baitfish have advantages and may command a higher price over both wild caught bait and baitfish transported from other states.

Also, locally produced baitfish will not have to endure long transport times. Furthermore, as restrictions on interstate shipping and wild capture intensify, additional market opportunities are likely to arise. Similarly,

seasonal variations in supply and demand play a role in the baitfish market, and wild harvests are frequently impeded by weather and natural abundances. Locally produced baitfish may be hardier, of better quality and size graded for a specific market and/or season.

Although, the majority of the regional bait producers are growing two primary species, golden shiners and fathead minnows (Lazur et al. 2003), opportunities exist in the mid-Atlantic to grow other bait, such as the mummichog (*Fundulus heteroclitus*) or white river crayfish (*Procambarus acutus acutus*). In a recent publication, Daniels (2004) described the production potential of white river crayfish in the mid-Atlantic. Based on preliminary baitfish production data obtained from trials conducted at Delaware State University (D. Wujtewicz, personal communication, August 2004) and current retail prices, baitfish represent a viable alternative agriculture crop in the mid-Atlantic region.

Literature Cited

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