

temperatures, minimum dissolved oxygen levels, and water depths. No specific favorable locations (conditions) for substrate placement could be

identified. As such, substrates can be placed in locations that are convenient for workers to collect.

## **IMPACTS**

Identification of goldfish and ballyhoo egg membrane compounds will aid in the identification of substances that will break the adhesive bond between the egg and spawning substrate.

production of goldfish and ballyhoo by enabling producers to utilize a smaller hatchery space. Current costs to run an indoor goldfish hatchery could save 90% of the costs per day.

Desticking goldfish and ballyhoo eggs will improve

## **PUBLICATIONS, MANUSCRIPTS OR PAPERS PRESENTED**

### **Publications in Print**

Weldon, D. B., N. Stone, and J. Sun. 2012. Effect of spawning substrate to male ratio on fathead minnow egg production. *North American Journal of Aquaculture* 74:419–423.

Stone, N., and D. Weldon. 2012. Potential fathead minnow spawning substrate for indoor egg incubation. *Arkansas Aquafarming* 29(1):1-2.

### **Presentations**

Kelly, A. M., S. Kumaran, and N. Stone. 2011. A potential method of desticking goldfish eggs from spawning mats. *Aquaculture America*, San Diego, California.

Kelly, A. M., S. Kumaran, and N. Stone. A potential method of desticking goldfish eggs from spawning mats. Poster presentation. Annual Meeting of the Arkansas Bait and Ornamental Fish Growers Association. Lonoke, Arkansas.

Stone, N. 2012. The latest in new baitfish technology. UAPB Rural Life Conference, Pine Bluff, Arkansas.

Sun, J., C. Lee, and N. Stone. 2012. Effects of egg mimic number and sphere diameter on fathead minnow egg production. Poster presentation, *Aquaculture America 2012*, U.S. Aquaculture Society, Las Vegas, Nevada.

Sun, J., C. Lee, and N. Stone. 2012. Effects of egg mimic number and sphere diameter on fathead minnow egg production. Poster presentation, *UAPB Aquaculture/Fisheries Field Day*, Pine Bluff, Arkansas.

Weldon, D. B., and N. Stone. 2012. Effect of removal from substrate on fathead minnow egg hatching success. Poster presentation, *UAPB Aquaculture/Fisheries Field Day*, Pine Bluff, Arkansas.

Weldon, D. B., N. Stone, and J. Sun. 2012. Effect of spawning substrate to male ratio on fathead minnow *Pimephales promelas* egg production. Aquaculture America 2012, U.S. Aquaculture Society, Las Vegas, Nevada.

Weldon, D. B., N. Stone, J. Sun, and L. Xie. 2012. Effect of depth on fathead minnow *Pimephales promelas* egg production. Poster presentation, Aquaculture America 2012, U.S. Aquaculture Society, Las Vegas, Nevada.

Weldon, D. B., N. Stone, J. Sun, and L. Xie. 2012. Effect of temperature and dissolved oxygen on fathead minnow *Pimephales promelas* egg production in ponds. Poster presentation, Lonoke Aquaculture Workshop, Lonoke, Arkansas.

