
SNAIL MANAGEMENT/GRUB CONTROL¹

Project *Progress Report* for the Period
September 1, 2007 to August 31, 2010

NCRAC FUNDING: \$20,500 (September 1, 2007 to August 31, 2010)

PARTICIPANTS:

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Joseph E. Morris	Iowa State University	Iowa
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Industry Advisory Council Liaison:

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Joseph E. Morris	Iowa State University	Iowa
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PROJECT OBJECTIVE

Assemble an updatable snail management guide which includes a literature review of known control options, a method of determining snail infestation levels in any water system, and a set of standard operating procedures to reduce snail populations and trematode infestations based on the research cited in Objective 1 (see footnote below).

ANTICIPATED BENEFITS

Grub infections in fish culture ponds are extremely relevant to the aquaculture industry in the North Central Region (NCR) as the industry has experienced a loss of income in both commercially important food fish species and baitfish. These economic losses result both directly from fish mortality due to trematode infection, and indirectly because of unappealing visual presentation of food fish fillets containing grubs. Outcomes of this project should help

culturists in dealing effectively and economically with these infestations.

PROGRESS AND PRINCIPAL ACCOMPLISHMENTS

A search has been initiated by Iowa State University staff to review literature to date concerning the three main control methods for snails: biological, chemical, and mechanical. This information will then be combined with information garnered from this research project to develop an interactive Web page for fish producers to access and obtain information potentially relevant to their snail problems. Among the various options, information regarding effectiveness, application costs, legal implications, and potential for impact on pond general ecology, e.g., zooplankton dynamics in fish fingerling ponds, will be listed. This Web page will be hosted on the North Central Regional Aquaculture Center (NCRAC) Web site.

¹ This Progress Report is for the second objective of this project. A project component termination report for the first objective is contained elsewhere in this report. This is a project that had two years of funding and is chaired by Gregory W. Whitledge. It began September 1, 2007.

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WORK PLANNED

Iowa State University

In 2011 the completed database on snail control will be shared with all project investigators to insure that the information is complete. Additional information garnered from the recently completed research will be included. Following project review of this database, a Web page will then be developed and placed on the NCRAC Web site.

IMPACTS

Project results will provide valuable information regarding the effectiveness and efficiency of several potentially useful approaches for controlling snail populations and associated grub infestations in aquaculture ponds in the NCR. Previously untested treatments for snail control in ponds (the crayfish *Orconectes virilis*,

freshwater prawn, hybrid sunfishes, biocontrol with natural dominant trematodes, and integrated chemical and biological controls) are being evaluated. Results will also provide insight into the degree of snail population control required to limit grub prevalence in cultured fishes in ponds where food fish are raised.

SUPPORT

To date, NCRAC has provided \$20,500 which is the total amount allocated for this objective.

PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED

See the Appendix for a cumulative output for all NCRAC-funded Snail Management/Grub Control activities.

APPENDIX

NORTH CENTRAL REGIONAL AQUACULTURE CENTER

SNAIL MANAGEMENT/GRUB CONTROL

Meeting, Illinois Chapter of the American Fisheries Society, Whittington, Illinois, February 23-25, 2010.

Publication in Print

Noatch, M.R. 2010. An evaluation of chemical, biological, and combined chemical-biological approaches for controlling snails in aquaculture ponds. Master's thesis, Southern Illinois University-Carbondale.

Manuscript

Noatch, M.R. and G.W. Whitledge. In press. An evaluation of hydrated lime and predator sunfish as a combined chemical-biological approach for controlling snails in aquaculture ponds. North American Journal of Aquaculture.

Papers Presented

Whitledge, G.W. 2008. Research on biological control of aquaculture pond snails at Southern Illinois University. Missouri Aquaculture Association Annual Meeting, Jefferson City, Missouri, January 12, 2008.

Timmons, B.A., C.C. Green, and A.M. Kelly. 2008. Snail consumption and preference by redear sunfish (*Lepomis microlophus*) and redear sunfish × warmouth (*Lepomis gulosus*) hybrid. Aquaculture America 2008, Lake Buena Vista, Florida, February 9-12, 2008.

West, A.J., T. Huspeni, and C. Hartleb. 2008. Biological control of snails and associated parasites of fish in culture ponds. 69th Midwest Fish and Wildlife Conference, Columbus, Ohio, December 14-17, 2008.

West, A.J., T. Huspeni, and C. Hartleb. 2009. Biological control of snails and associated parasites of fish in culture ponds. Wisconsin Aquaculture Association Annual Conference, Hayward, Wisconsin, March 13-14, 2009.

Noatch, M.R. and G.W. Whitledge. 2009. Comparison of biological, chemical, and integrated biological-chemical approaches for controlling aquaculture pond snails. Poster, 70th Midwest Fish and Wildlife Conference, Springfield, Illinois, December 6-9, 2009.

Noatch, M.R. and G.W. Whitledge. 2010. Comparison of biological, chemical, and integrated biological-chemical approaches for controlling aquaculture pond snails. 48th Annual