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## Freshwater Mussel Early Life Stage Protocols for the Assessment of Pesticide Effects

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Protocols to assess the impact of pesticides to sensitive life stages of freshwater mussels have been defined and evaluated for U.S. EPA's Office of Pesticide Programs. These protocols include testing of mature glochidia, as well as transformed juveniles. Several short-term tests have been evaluated and developed. The sensitivity of the young mussels to three pesticides (Carbaryl, Atrazine, and Karate) have been documented. These data have been correlated with acute and chronic information available as part of the pesticide registration process for these pesticides.

The availability of acute protocols to evaluate sensitive life stages of freshwater mussels will facilitate environmental impact assessments of this group of organisms, which includes numerous endangered species. Tests such as these are expected to be promulgated and used in ecological risk assessments of pesticides by the U.S. EPA's Office of Pesticide Programs.

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*Dick*  
*Not much detail on their results.*  
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*Jim Wilcox*

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# P71

EARLY LIFE STAGE PROTOCOLS FOR THE ASSESSMENT OF PESTICIDE EFFECTS TO FRESHWATER MUSSELS. <sup>copy</sup> F.C. Johnson, KBN Engineering and Applied Sciences, Inc., Gainesville, FL; A.E. Keller, Environmental Science Engineering Department, University of Florida, Gainesville, FL; and S.G. Zam, Microbiology Department, University of Florida, Gainesville, FL.

Protocols to assess the impact of pesticides to sensitive life stages of freshwater mussels have been defined and evaluated for U.S. EPA's Office of Pesticide Programs. These protocols include testing of mature glochidia, as well as recently transformed juveniles. Several short-term tests have been evaluated and developed. The sensitivity of the young mussels to several pesticides have been documented. These data have been correlated with acute and chronic information available as part of the pesticide registration process under FIFRA for these pesticides.,

The availability of acute protocols to evaluate sensitive life stages of freshwater mussels will facilitate environmental impact assessments to this group of organisms, which includes numerous endangered species. Tests such as these are expected to be promulgated and used in ecological risk assessments of pesticides by the Office of Pesticide Programs.

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