

**CONTINUATION SHEET FOR ANNUAL REPORT OF RESEARCH FACILITY
EXPLANATION FOR APHIS FORM 7023 COLUMN E ENTRIES****FY 2019****CUSTOMER NUMBER: 334026****REGISTRATION NUMBER: 71-G-0001**

Species: Channel Catfish

Number: 2650

Fish will be used to determine the effect of 1) the administration of therapeutics, or 2) immunization on their mortality during use of a bacterial disease model. The proposed studies can only be accomplished using live fish as an in vivo response to infection is to be evaluated. During the bacterial disease model some fish may experience distress from exposure to bacteria which may result in the obstruction of airways (gills) or in the osmoregulation process (skin). Drug intervention (beyond the testing paradigm) to eliminate distress is contraindicated due to the scientific need to test the efficacy of therapeutics or immunization strategies in the disease model. Fish that are identified as moribund or show visual signs of swimming incoordination, lack of proper buoyancy, general lethargy, or otherwise displaying abnormal behavior will be euthanized.

Note: No exceptions to the regulations and standards were requested by the PI or approved by the IACUC.

Species: White Bass

Number: 1050

Fish will be used to determine the acute toxicity (LC50) of copper to fish in waters of differing ionic composition. The proposed studies can only be accomplished using live fish because an in-vivo response to copper toxicity is to be evaluated. During the toxicity model some fish may experience distress from exposure to copper which may result in the obstruction of airways (gills) or in the osmoregulation process (skin). Active intervention (beyond the testing paradigm) to eliminate distress is contraindicated due to the scientific need to determine the LC50 in the toxicity model. Fish that are identified as moribund or show visual signs of swimming incoordination, lack of proper buoyancy, general lethargy, or otherwise displaying abnormal behavior will be euthanized.

Note: No exceptions to the regulations and standards were requested by the PI or approved by the IACUC.