OMB APPROVED
0579-0036
Exp.: 10/31/2018

This report is required by law (7 U.S.C. 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

Interagency Report Control No. 0180-DOA-AN

Fiscal Year 2017

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

1. REGISTRATION NUMBER
65-G-0001

2. HEADQUARTERS RESEARCH FACILITY *(Name, address, and telephone number as registered with USDA, include ZIP Code)*

Warmwater Aquaculture Research Unit
P.O. Box 38

STONEVILLE, MS 38776

3. REPORTING FACILITY *(List all locations where animals were housed or used in actual research, testing, teaching, or experimentation, or held for these purposes. Attach additional sheets, if necessary.)*

FACILITY LOCATIONS *(Sites)*

[redacted]

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY *(Attach additional sheets, if necessary, or use APHIS FORM 7023A.)*

A. Animals Covered By The Animal Welfare Regulations	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. *(An explanation of the procedures producing pain or distress on these animals and the reasons such drugs were not used must be attached to this report.)*	F. TOTAL NUMBER OF ANIMALS **(Cols. C + D + E)**
4. Dogs	0	0	0	0	0
5. Cats	0	0	0	0	0
6. Guinea Pigs	0	0	0	0	0
7. Hamsters	0	0	0	0	0
8. Rabbits	0	0	0	0	0
9. Non-human Primates	0	0	0	0	0
10. Sheep	0	0	0	0	0
11. Pigs	0	0	0	0	0
12. Other Farm Animals					
13. Other Animals					

ASSURANCE STATEMENTS

1.) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2.) Each principal investigator has considered alternatives to painful procedures.

3.) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). **A summary of all such exceptions is attached to this annual report.** In addition to identifying the IACUC approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4.) The attending veterinarian for this research facility has appropriate authority to ensure the provisions of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

(Chief Executive Officer (C.E.O.) or Legally Responsible Institutional Official (I.O.))

I certify that the above is true, correct, and complete (7 U.S.C. Section 2143).

[redacted]

DATE SIGNED
13-FEB-2018

APHIS FORM 7023
JUL 2013

Column E Explanation

This form is intended as an aid to complete the Column E explanation. It is not an official form and its use is voluntary. Annual Reports and explanations should NOT include PII information such as names (principle investigators and research staff), addresses, protocols, meeting notes (either in part of in full), the animals room numbers, grant information, veterinary care programs, and the like. A Column E explanation must be written so as to be understood by lay person as well as scientists.

1. Registration Number: 65-G-0001; Customer ID Number 334027

2. Number 4716 of animals used in this study.

3. Species (common name) of animals used in this study: blue and channel catfish.

4. Explain the procedure producing pain and/or distress. Explanations should include a brief description of the procedure, but also explain what the animal's experience, examples of which may include, but are not limited to: Neurological signs, seizures, tremors, paralysis, lethargy, inappetence, respiratory signs, G.I. distress, vomiting, and diarrhea.

   Fish were challenged with a pathogenic bacteria (Edwardsiella ictaluri – ESC) in some studies, and a percentage may have experienced varying levels of distress due to changes in respiration and/or in the cutaneous osmoregulatory process. Holding units are checked daily, and any fish showing signs of swimming incoordination, lack of proper buoyancy, general lethargy, or other abnormal behaviors consistent with a moribund condition were humanely euthanized. This subpopulation of susceptible fish is reported in column E. Some fish were also exposed to minor hypoxia to study subsequent physiological changes. None of these fish showed any signs of stress, but some did have minor transient changes in hematocrit, hemoglobin and/or blood pH.

5. Attach or include with the reason(s) for why anesthetics, analgesics and tranquillizers could not be used. (For federally mandated testing, see Item 6 below).

   Challenges with bacterial pathogens (Edwardsiella ictaluri – ESC) are used to screen fish for improved disease resistance and help to identify the genome locus responsible for inherent disease resistance/susceptibility. This enables us to select genetically superior animals for our breeding program. Susceptible individuals cannot be accurately identified until the disease process has been allowed to advance, causing some fish to become moribund. Drug intervention to eliminate pain and/or distress is contraindicated because it can disrupt the natural disease process, and this interferes with our ability to quantify the complex immune response/heritable resistance of fish that are naturally resistant. At this time, there is no alternative to the use of live fish to evaluate these differences. Some fish were also exposed to minor hypoxia to study resulting physiological changes; anesthesia, analgesia and/or tranquilizers were not used as they would have interfered with the target parameters needed for our comparisons.

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

04 DEC 2017

6. What, if any, federal regulation require this procedure? Cite the agency, the code of Federal