



Missouri State[™]

U N I V E R S I T Y

November 26, 2018

Dr. Robert M. Gibbens, DVM
Regional Director
Animal and Plant Health Inspection Service
Animal Care – Western Region
2150 Centre Ave. Building B, Mail Stop 3W11
Ft. Collins, CO 80526

RE: ANNUAL REPORT
Certificate Number: 43-R-0052
Customer ID Number: 1513

Dear Dr. Gibbens:

Please find enclosed the Annual Report of Research Facility (APHIS Form 7023) for Missouri State University. Missouri State University appreciates your review of this report. If you have any questions regarding this submission, please feel free to contact Rachel McGinnis, Interim Director of Research Administration, at (417) 836-3194 or RachelMcGinnis@MissouriState.edu.

Sincerely,

Frank Einhellig, Ph.D.
Provost & Institutional Official

Enclosures

OFFICE OF RESEARCH ADMINISTRATION

901 South National Avenue • Springfield, Missouri 65897 • 417-836-5972 • Fax 417-836-8818

www.missouristate.edu

An Equal Opportunity/Affirmative Action/Minority/Female/Veterans/Disability Employer and Institution

Obtained by Rise for Animals. Uploaded 07/07/2020

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0036. The time required to complete this information collection is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

OMB APPROVED
0579-0036

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: 2018

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANNUAL REPORT OF RESEARCH FACILITY
(TYPE OR PRINT)

REGISTRATION NUMBER: 43-R-0052

Customer Number: 1513

2. HEADQUARTERS RESEARCH FACILITY (Name and Address, as registered with USDA, include ZIP Code)

Missouri State University
901 S National Ave
Springfield, MO 65897

Telephone: (417-836-4132)

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) See Attached Listing

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					
5. Cats					
6. Guinea Pigs					
7. Hamsters					
8. Rabbits					
9. Non-human Primates					
10. Sheep					
11. Pigs			2		2
12. Other Farm Animals					
13. Other Animals					
bats		13		30	43
shrew		1			1
wild mice		35			35

ASSURANCE STATEMENTS

- 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.
- Each principal investigator has considered alternatives to painful procedures.
- 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.
- 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 (L.O.))
I certify that the above is true, correct, and complete (7 U.S.C. Section 2143).

SIGNATURE OF C.E.O. OR L.O.

Frank Einhellig

NAME AND TITLE OF C.E.O. OR L.O. (Type or Print)

Frank Einhellig, Provost & Institutional Official

DATE SIGNED

11/27/18

APHIS FORM 7023
JUL 2013

OMB APPROVED
0579-0036

Interagency Report Control
No. 0180-DOA-AN

Fiscal Year: 2018

**UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE**

CONTINUATION SHEET FOR ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

REGISTRATION NUMBER: 43-R-0052

Customer Number: 1513

2. HEADQUARTERS RESEARCH FACILITY (Name and Address, as registered with USDA, Include ZIP Code)

Missouri State University
901 S National Ave
Springfield, MO 65897

Telephone: (417-836-4132

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY (Attach additional sheets if necessary.)

[illegible]

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

SIGNATURE OF C.E.O. OR I.O.

NAME AND TITLE OF C.E.O. OR I.O. (Type or Print)

Frank Einhellig, Provost & Institutional Official

DATE SIGNED

4/27/18

APHIS FORM 7023A
AUG 2013

APHIS Form 7023 Site Addendum for FY:

Registration Number: 43-R-0052
Customer ID Number: 1513

Facility Business Address Information:

Missouri State University
901 S National Ave
Springfield, MO 65897

Telephone: (417-836-4132)

Facilities Site(s) Address Information:

Site Code(s):

001
901 South National Avenue
Main Campus & Jordan Valley Innovation Center
(001 & 004 Combined)
Springfield, MO 65897

007
3945 Drury Road
Bull Shoals Field Station
Kirbyville, MO 65679

COLUMN E EXPLANATION

1. REGISTRATION NUMBER

43-R-0052

2. NUMBER OF ANIMALS USED IN THIS STUDY

30

3. SPECIES (COMMON NAME) OF ANIMALS USED IN THIS STUDY

Big Brown Bats

4. EXPLAIN THE PROCEDURE PRODUCING PAIN AND/OR DISTRESS

Researchers did not "produce" pain or distress. The purpose of this study was to learn more about the role played by the immune system in the pathology of white-nose syndrome (WNS) in bats. Our research of immune function during hibernation requires us to study bats with WNS, which is only known to affect hibernating bats.

Hibernating bats do not typically have access to food during the winter in nature, and lose mass as the winter progresses as a result of using stored body fat. Healthy bats may lose 25 percent of their prehibernation mass and survive the winter in good health. WNS-infected bats appear to use their fat sooner, so the mass loss will be more rapid, possibility leading to emaciation and eventually death. The changes indicated are a normal part of hibernation or the pathology of WNS. Since the objective of this study is to monitor the WNS prevalence and severity, and the immune response to the WNS pathogen, the researchers did not interrupt the study. No steps were taken to interfere with the progression of hibernation, with or without WNS.

Twenty bats were exposed to WNS fungus during this study. Half of these were also treated with an anti-inflammatory (meloxicam) to inhibit immune function. Ten bats served as controls. Letting WNS infections run their course is critical to determining changes in immune function and it's role. The information is needed as the conservation community seeks to better understand this devastating disease.

It is not clear the extent that hibernating animals feel pain or distress. Bats which developed white-nose syndrome could have been in some pain or distress, and researchers let the disease develop to study the immune system changes. Bats receiving the meloxicam treatment may have experienced less distress if the treatment is found to be effective at preventing WNS. Bats were categorized into Category E due to researchers not relieving any distress/discomfort of bats under-going the normal progression of the naturally-occurring disease.

5. EXPLANATION WITH THE REASON(S) FOR WHY ANESTHETICS, ANALGESICS, AND TRANQUILLIZERS COULD NOT BE USED.

The only way researchers could have changed the study to reduce the distress bats may have felt would have been to open the environmental chambers regularly, handle the bats, and check them for WNS. To do this would have ruined the study, as regular disturbance would prevent the bats from hibernating, in which case, the project would not have been a hibernation study. WNS only affect bats while they are hibernating.

6. WHAT, IF ANY, FEDERAL REGULATIONS REQUIRE THIS PROCEDURE?

None