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: 2009

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

REGISTRATION NUMBER: 42-R-0009

Customer Number: 1578

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

Fort Dodge Laboratories
800 5th St N W
Fort Dodge, IA 50501

(b)(2)High, (b)(7)f

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	247	957	79	98	1134
5. Cats	27	487	31	85	603
6. Guinea Pigs	0	2214	0	0	2214
7. Hamsters	0	15931	529	6078	22538
8. Rabbits	0	217	1683	0	1900
9. Non-human Primates	0	0	0	0	0
10. Sheep	3	0	0	0	0
11. Pigs	0	0	0	0	0
12. Other Farm Animals					
Cattle	0	82	0	0	82
13. Other Animals					
Gerbils	0	160	170	0	330
Horses	0	61	21	0	82

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

SIGNATURE (b)(6), (b)(7)c

DATE SIGNED 13 Oct 09

APHIS FORM AUG 2009

OCT 22 2009

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Canine

2. **Number of animals achieving Cat. E in this study:** 45

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Dogs were anesthetized and inoculated with a virulent organism. The dogs were allowed to develop clinical signs of the infection. The clinical signs were observed and recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
This animal study was conducted to develop a challenge model. A challenge model is the method used to administer the pathogen to animals so they will exhibit the clinical signs of infectious disease. This information would be used to establish vaccine efficacy and support label claims. The pain and/or distress from this infectious disease could not be relieved because any therapeutics used to treat the disease would eliminate, mask or modify the duration and severity of the clinical signs that were caused by the organism. The attending veterinarian was consulted for possible therapeutic treatment for the pain and distress of the disease but treatment with analgesics, non-steroidal anti-inflammatories, corticosteroids and antibiotics would alter the expression of the disease.

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
APHIS VS Memorandum 800.202 3.6.1- General Licensing Considerations: Outcome Specification. "The outcome may be specified in terms of a case definition, severity categorization, or natural scale of measurement."

APHIS VS Memorandum 800.202 1.3- General Licensing Considerations: Efficacy. Efficacy is the direct effect of a medical intervention on an individual subject.

APHIS VS Memorandum 800.202 3.1- General Licensing Considerations: Methods. Vaccine trials should preferably aim to compare product and placebo treated subjects by their response to challenge with the virulent pathogen.

APHIS VS Memorandum 800.202 4.2- Label claims: The label claim for this new product must be determined under the guidelines of the classifications listed in the memorandum.

APHIS 9 CFR

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Canine

2. **Number of animals achieving Cat. E in this study:** 53

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Dogs were anesthetized and inoculated with a virulent organism The dogs were allowed to develop clinical signs of the infection. The clinical signs were observed and recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
Product and placebo vaccinated animals were challenged with a virulent organism to see if the vaccine would protect them from exhibiting clinical signs of infectious disease. This information would be used to establish efficacy and support label claims. The pain and/or distress from this infectious disease could not be relieved because any therapeutics used to treat the disease would eliminate, mask or modify the duration and severity of the clinical signs that were caused by the organism. The attending veterinarian was consulted for possible therapeutic treatment for the pain and distress of the disease but treatment with analgesics, non-steroidal anti-inflammatories, corticosteroids and antibiotics would alter the expression of the disease.

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
APHIS VS Memorandum 800.202 3.6.1- General Licensing Considerations: Outcome Specification. "The outcome may be specified in terms of a case definition, severity categorization, or natural scale of measurement."

APHIS VS Memorandum 800.202 1.3- General Licensing Considerations: Efficacy. Efficacy is the direct effect of a medical intervention on an individual subject.

APHIS VS Memorandum 800.202 3.1- General Licensing Considerations: Methods. Vaccine trials should preferably aim to compare product and placebo-treated subjects by their response to challenge with the virulent pathogen.

APHIS VS Memorandum 800.202 4.2- Label claims: The label claim for this new product must be determined under the guidelines of the classifications listed in the memorandum.

APHIS 9 CFR

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Feline

2. **Number of animals achieving Cat. E in this study:** 40

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Cats were anesthetized and inoculated with a virulent organism. The cats were allowed to develop the clinical signs of the infection. The clinical signs were observed and recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
Product and placebo vaccinated animals were challenged with a virulent organism to see if the vaccine would protect them from exhibiting clinical signs of infectious disease. This information would be used to establish efficacy. The pain and/or distress from this infectious disease could not be relieved because any therapeutics used to treat the disease would eliminate, mask or modify the duration and severity of the clinical signs that were caused by the organism. The attending veterinarian was consulted for possible therapeutic treatment for the pain and distress of the disease but treatment with analgesics, non-steroidal anti-inflammatories, corticosteroids and antibiotics would alter the expression of the disease.

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
APHIS VS Memorandum 800.202 3.6.1- General Licensing Considerations: Outcome Specification. "The outcome may be specified in terms of a case definition, severity categorization, or natural scale of measurement."

APHIS VS Memorandum 800.202 1.3- General Licensing Considerations: Efficacy. Efficacy is the direct effect of a medical intervention on an individual subject.

APHIS VS Memorandum 800.202 3.1- General Licensing Considerations: Methods. Vaccine trials should preferably aim to compare product and placebo treated subjects by their response to challenge with the virulent pathogen.

APHIS VS Memorandum 800.202 4.5 Species-Establish efficacy in each species for which the product is recommended.

APHIS 9 CFR

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Feline

2. **Number of animals achieving Cat. E in this study:** 38

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Cats were anesthetized and inoculated with a virulent organism. The cats were allowed to develop the clinical signs of the infection. The clinical signs were observed and recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
Product and placebo vaccinated animals were challenged with a virulent organism to see if the vaccine would protect them from exhibiting clinical signs of infectious disease. This information would be used to determine the booster efficacy. The pain and/or distress from this infectious disease could not be relieved because any therapeutics used to treat the disease would eliminate, mask or modify the duration and severity of the clinical signs that were caused by the organism. The attending veterinarian was consulted for possible therapeutic treatment for the pain and distress of the disease but treatment with analgesics, non-steroidal anti-inflammatories, corticosteroids, and antibiotics would alter the expression of the disease.

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
Veterinary Medicines Directorate EU Pharmacopoeia

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Feline

2. **Number of animals achieving Cat. E in this study:** 7

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Cats were anesthetized and inoculated with various strains of a virulent organism. The cats were allowed to develop the clinical signs of the infection. The clinical signs were observed and recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
This animal study was conducted to determine the clinical signs of infection caused by different strains of an organism affecting cats. This information would be used to develop a challenge model to establish vaccine efficacy and support label claims. The pain and/or distress from this infectious disease could not be relieved because any therapeutics used to treat the disease would eliminate, mask or modify the duration and severity of the clinical signs that were caused by the organism. The attending veterinarian was consulted for possible therapeutic treatment for the pain and distress of the disease but treatment with analgesics, non-steroidal anti-inflammatories, corticosteroids and antibiotics would alter the expression of the disease.

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
APHIS VS Memorandum 800.202 3.6.1- General Licensing Considerations: Outcome Specification. "The outcome may be specified in terms of a case definition, severity categorization, or natural scale of measurement."

APHIS VS Memorandum 800.202 1.3- General Licensing Considerations: Efficacy. Efficacy is the direct effect of a medical intervention on an individual subject.

APHIS VS Memorandum 800.202 3.1- General Licensing Considerations: Methods. Vaccine trials should preferably aim to compare product and placebo-treated subjects by their response to challenge with the virulent pathogen.

APHIS VS Memorandum 800.202 4.2- Label claims: The label claim for this new product must be determined under the guidelines of the classifications listed in the memorandum.

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Hamsters

2. **Number of animals achieving Cat. E in this study:** 145

3. **Explanation of the procedure producing pain and/or distress:**
Hamsters were inoculated with a virulent organism and allowed to develop the clinical signs of infection in order to harvest and titrate challenge material.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
Hamsters are required for the propagation of virulent challenge material because *in vitro* culturing reduces the virulence of the organism. This animal study was conducted for the propagation and titration of challenge material to be used in the qualification of a new reference vaccine and to establish efficacy. To produce virulent challenge material in the hamster, the animal must develop clinical signs of infection. The attending veterinarian was consulted for possible therapeutic treatment for the pain and distress of the disease. The pain and distress from this infectious disease could not be relieved because any antibiotics used to treat the disease could kill the organisms being propagated. Anesthetics, analgesics, corticosteroids and non-steroidal anti-inflammatories would mask or alter the progressive development of illness that is used to determine if the organism is virulent and has propagated to sufficient numbers in the animal before harvest.

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**

APHIS A master or working reference is necessary for *in vitro* potency testing for product release. VS Memorandum 800.90 III.A. "A Master Reference is a reference whose potency is correlated, directly or indirectly, to host animal immunogenicity".

APHIS VS Memorandum 800.202 3.6.1 The outcome may be specified in terms of a case definition, severity categorization, or natural scale of measurement.

APHIS VS Memorandum 800.202 1.3 Efficacy is the direct effect of a medical intervention on an individual subject.

APHIS VS Memorandum 800.202 3.1 General study design. Clinical efficacy studies should be prospective, placebo controlled, randomized, and double blinded. Vaccine trials should preferably aim to compare product and placebo treated subjects by their response to challenge with virulent pathogen.

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Hamsters

2. **Number of animals achieving Cat. E in this study:** 5076

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Ten hamsters per serial are vaccinated. After 14-21 days (product dependent), the hamsters are challenged (b)(4) with an appropriate dilution of the virulent organism. Ten non-vaccinated hamsters are given the same challenge dose and used as controls. Four groups of five non-vaccinated hamsters are given a dilution of the challenge material and used as the challenge titration determination. Hamsters are observed for 14 days and deaths are recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
The test is required by regulation be conducted on each serial of vaccine produced. Death of hamsters in this test is used to indicate lack of protection. Because the vaccine is given at a fractional dose, the test amounts to a protective endpoint determination for the vaccine being tested. This disease in hamsters almost always results in acute onset and rapid death. The rapid progression of the disease in the hamster gives little opportunity for intervention. Furthermore, pathology and signs, length and severity of clinical disease would be impacted by use of non-steroidal anti-inflammatories, antibiotics, corticosteroids, and analgesics. Use of any such drugs therefore, would invalidate the scientific value of the protection endpoint determined by the test. Lack of confidence in the endpoint would render the test itself useless.
APHIS-USDA-CVB is engaged in developing *in-vitro* test alternatives for products that require this test. Fort Dodge Animal Health has ongoing animal studies that are currently attempting to validate *in-vitro* methods.
FDAH has incorporated the guidelines of USDA-CVB notice No. 04-09 into the outlines of production as outlined in 9 CFR 117.4 (e)

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
APHIS 9 CFR

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Hamsters

2. **Number of animals achieving Cat. E in this study:** 109

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Ten hamsters are vaccinated with test vaccine. Thirty hamsters are held for use as controls during the challenge. After 21 days, all vaccinated hamsters are challenged with the proper dilution of challenge material. Ten non-vaccinated hamsters are challenged with the same dilution and used as challenge controls. Four groups of five non-vaccinated hamsters are given diluted challenge (to be used as a challenge titration determination). All hamsters are observed for 7 days and deaths are recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
Death as an endpoint is the current standard and a necessary part of a valid test as determined by USDA approved Outline of Production VS Code 1525.21. Because the vaccine is given at a fractional dose, the test amounts to a protective endpoint determination for the vaccine being tested. Furthermore, pathology and signs, length and severity of clinical disease would likely be impacted by use of antibiotics, non-steroidal anti-inflammatories, corticosteroids and analgesics. Use of any such drugs therefore, would invalidate the scientific value of the protection endpoint determined by the test. Until such time as a validated USDA-CVB approved alternative is available, the test is obligatory. No alternatives exist at this time. FDAH has incorporated the guidelines of USDA-CVB notice No. 04-09 into the outlines of production as outlined in 9 CFR 117.4 (e)

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
APHIS 9 CFR

Explanation for Column E
Fort Dodge Animal Health
Registration # 42-R-0009

1. **Species:** Hamsters

2. **Number of animals achieving Cat. E in this study:** 748

3. **Explanation of the procedure producing pain and/or distress (Must be written as to be understood by lay person as well as scientists)**
Five hamsters per serial are vaccinated. After 15-20 days, the hamsters are challenged with an appropriate dilution of a virulent organism. Five non-vaccinated hamsters are given the same challenge dose and used as controls. Four groups of five non-vaccinated hamsters are given a dilution of the challenge material and used as the challenge titration determination. The hamsters are observed for at least 14 days after the death of four control hamsters and deaths are recorded.

4. **Scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 5)**
The test is required by regulation to be conducted on each serial of vaccine produced. Death of hamsters in this test is used to indicate lack of protection. Because the vaccine is given at a fractional dose, the test amounts to a protective endpoint determination for the vaccine being tested. This disease in hamsters almost always results in acute onset and rapid death. The rapid progression of the disease in the hamster gives little opportunity for intervention. Furthermore, pathology and signs, length and severity of clinical disease would be impacted by use of non-steroidal anti-inflammatories, antibiotics, corticosteroids, and analgesics. Use of any such drugs therefore, would invalidate the scientific value of the protection endpoint determined by the test. Lack of confidence in the endpoint would render the test itself useless.

5. **Cite the agency, code of Federal Regulations (CFR) title number and the specific section number and/or VS Memoranda that require this procedure and study.**
Veterinary Medicines Directorate EU Pharmacopoeia