U.S. Dept. of Agriculture
Animal and Plant Health Inspection Service
Wildlife Services
National Wildlife Research Center
Hawaii Field Station
210 Amauulu Rd.
Hilo, Hawaii 96720

Re: APHIS Form 7023 Animal Report of Research Facility
Documentation of animals reported in Column E

OA-3075

All Polynesian rats (*Rattus exulans*) listed in Column E were used in laboratory feeding bioassays of commercial Brodifacum rodenticide baits. Bioassays with live animals are a common, standard and necessary method for determining the efficacy of rodenticides. We know of no other means of accomplishing this purpose. The use of sedatives, analgesics or antidotes would interfere with the objectives of the test and would invalidate the data. Polynesian rats listed in Column E either died during the test, showed some symptoms of rodenticide poisoning but recovered or were asymptomatic (appeared unaffected). All of surviving animals were euthanized at the end of the testing/observation period.

Polynesian rats listed in Column C were held in the laboratory and not used in any test (spares), died during the pre-test quarantine period or were used as controls (no exposure to toxic bait). Animals held as spares and control groups were later euthanized.

(b) (6), (b) (7)(C) [redacted] 11/12/19

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Re: APHIS Form 7023 Animal Report of Research Facility
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QA-2960

All house mice (*Mus musculus*) listed in Column E were used in laboratory feeding bioassays of commercial Brodifacum rodenticide baits. Bioassays with live animals are a common, standard and necessary method for determining the efficacy of rodenticides. We know of no other means of accomplishing this purpose. The use of sedatives, analgesics or antidotes would interfere with the objectives of the test and would invalidate the data. Mice listed in Column E either died during the test, showed some symptoms of rodenticide poisoning but recovered or were asymptomatic (appeared unaffected). All of surviving animals were euthanized at the end of the testing/observation period.

Mice listed in Column C were held in the laboratory and not used in any test (spares), died during the pre-test quarantine period or were used as controls (no exposure to toxic bait). Animals held as spares and control groups were later euthanized.

(b) (6), (b) (7)(C) [redacted] 11/12/19

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: 84-R-0001

2. Number of animals used in this study: 8

3. Species (common name) of animals used in this study: Guinea Pigs

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, inappetance, respiratory signs, GI distress, vomiting, and diarrhea.

> 8 guinea pigs were exposed to cigarette smoke in a smoking machine for 2 hours/day for 5 days for the first week, 3 hours/day for 5 days the second week, and 5 hours/day for 5 days the third week. Tobacco smoke is considered an addictive drug and so is categorized as E as defined by USDA/APHIS.

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).

> The study was conducted to determine if the exposure of guinea pigs to cigarette smoke mimics human COPD and emphysema-like disease. The effects of emphysema are not readily relieved by analgesics and the use of NSAIDS can alter the inflammatory cascade that is critical for disease development. Prior to the delivery of therapeutic intervention of disease development, a model must be established. The original experiment had therapeutic interventions planned, but the study was terminated prior to their delivery.

6. What, if any, federal regulation require this procedure? N/A

- 2 MAY 2019