Institutional Animal Care and Use Committee
Clemson University

POLICY #23: INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC) POLICY FOR THE USE OF AVIAN EGGS, EMBRYOS, AND NEONATES

Background: Avian embryos are not considered live animals by U.S. regulatory agencies and many universities do not regulate their use in research. Nonetheless, there is a consensus in the scientific community that avian embryos greater than one half of the way to hatching can experience pain. If avian embryos hatch, intentionally or unintentionally, they are live vertebrate animals and are regulated by the IACUC. Consequently, the Clemson IACUC has developed the following guidelines. Chick embryos are considered the model species. If other avian species are used, the same guidelines should be followed.

IACUC Considerations:
1. Investigators using avian embryos must inform the IACUC by means of the “Notice of Intent to Use Avian Embryos” form. This form serves as a record of avian embryo use for the IACUC. If embryos will be sacrificed before or equal to 50% development, the research will not be subject to IACUC review unless specifically requested by the investigator. Studies using embryos greater than 50% development must be reviewed by the normal IACUC procedure for vertebrate animals.
2. Chick embryos younger than embryonic day 10.5 (E10.5) are assumed to be unable to experience pain. It is recommended that E10.5 or younger embryos be euthanized by hypothermia, typically by placing the eggs in a -20°C freezer for at least 4 hours.
3. Chick embryos greater than E10.5 can experience pain and should be euthanized by decapitation or other rapid and humane method.
4. Any Avian embryo past 50% development must be euthanized by humane methods such as CO2, anesthetic agents or decapitation. It should be noted that embryos are resistant to CO2. If this method is chosen, the embryos must be exposed to 90% CO2 for at least 20 min. Dry ice is unacceptable as a source of CO2 for euthanasia.
5. The IACUC recognizes that inadvertent hatching may occur. Investigators are asked to describe their methods for humane euthanasia of hatchlings. Hatchlings should be euthanized by decapitation using a method that is rapid and humane. Alternatively, CO2 inhalation can be used on hatchlings up to 72 hrs old if hatchlings are exposed to 90% CO2 for at least 20 min. When CO2 is used, assure euthanasia by decapitation.
6. A list of ‘Days to Hatch’ is provided as a reference for common avian species.

<table>
<thead>
<tr>
<th>Days to Hatch for Common Avian Species</th>
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<tbody>
<tr>
<td>Chicken</td>
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<tr>
<td>Bobwhite Quail</td>
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<tr>
<td>Coturnix Quail</td>
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<tr>
<td>Turkey</td>
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<tr>
<td>Duck</td>
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<td>Muscovy Ducks</td>
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<td>Goose</td>
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<td>Guinea</td>
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<td>Pigeon</td>
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<td>Ring Neck Pheasant</td>
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<td>Chukar Partridge</td>
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<td>Peafowl</td>
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</table>

These guidelines were developed based on recommendations of ILAR, the NIH intramural recommendations for rodent neonates and the AVMA Panel on Euthanasia.
Submit the completed form to the Clemson IACUC Office, 391 College Avenue, Suite 406M, or by email to iacuc@clemson.edu.

References:


# Clemson Institutional Animal Care and Use Committee

## Notice of Intent to Use Avian Embryos

### Contact Information
- **Principal Investigator:**
- **Department:**
- **Project Title:**
- **Email:**
- **Phone:**
- **Fax:**

### Avian Embryo Use Summary

1) **Avian Species:**

2) **Maximum age(s) of embryos for use:**

3) **Method of euthanasia of chick embryos older than E14:**

4) **Age at which unused embryos will be discarded:**

5) **Procedures for humane euthanasia should hatching occur inadvertently:**

6) **Building and room number where avian embryo use will occur:**

### Investigator Assurances

I have read the Clemson IACUC “Policy for Use of Avian Embryos” and agree to abide by it.

| Signature: | Date: |