STANDARD OPERATING PROCEDURE

ENVIRONMENTAL ENRICHMENT FOR POULTRY USED IN RESEARCH AND TEACHING

1.0 PURPOSE:

1.1 This standard operating procedure (SOP) describes the methods for environmental enrichment of poultry (*Galliformes*) used for research and teaching purposes.

1.2 These methods are intended to improve the well-being of these animals by increasing species-specific behaviors and reducing maladaptive behaviors.

1.3 This SOP is part of the UGA Environmental Enrichment Program that fully complies with the requirements of the National Research Council, *Guide for the Care and Use of Laboratory Animal*, ed8 available at http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf and the Animal Welfare Act and Regulations: Public Law 99-198 – The Improved Standards for Laboratory Animal Act available at http://www.nal.usda.gov/awic/legislat/awa.htm .

2.0 STANDARDS:

2.1 Natural Behavior:

There are three specific types of poultry found within the laboratory environment, chickens, turkeys and quail. All have similar enrichment needs and so are grouped together. Chickens (*Gallus domesticus*) were first domesticated about 8000 years ago from red junglefowl, a bird that still inhabits most of southeast Asia. (Hirst) The wild turkey (*Meleagris gallopavo*) originated in North America where it still lives today. The domestic turkey is a direct descendant of this species. Domestication of the wild turkey began about 2000 years ago by the indigenous peoples of Mesoamerica. (Thornton, 2012) Quail is a collective term for several genera of mid-sized birds considered in the order *Galliformes*. Most New World quail are in the family *Odontophoridae*. (Del Hoyo, 1994) All poultry species are highly social, forming complex hierarchies known as the "pecking order." Poultry are generally easy to handle, with the exception of quail, and are not as fragile as other bird species. They tend to be prolific breeders and most males of the order have one to several sharp, horny spurs on the back of each leg. Poultry have a strong nesting instinct and an innate desire to forage for seeds, grain and insects. Most poultry, particularly chickens, prefer to rest on perches. All poultry enjoy and benefit from dust bathing.

2.2 Environmental enrichment must be evaluated by taking into account the following:

2.2.1 The Natural Behavior and needs of poultry (see above)

2.2.2 Social Enrichment – Housing of compatible co specifics offers a high level of enrichment. Every effort will be made socially house social species. If social housing is not possible, animals should be housed in a manner that allows for as much tactile, auditory, visual or olfactory contact as possible. Social housing is a recognized and important part of the Environment Enrichment Program but should not be viewed as the sole means of meeting the enrichment needs of animals.

2.2.3 Physical Enrichment (devices, toys, etc) – Physical enrichment can be an important part of the Environmental Enrichment Program. However the selection of physical enrichment should take into account the safety of the device, its ability to stimulate and maintain the animal's interest and its impact on the research

being conducted. Physical enrichment should be carefully monitored to assess its impact of the goals of increasing natural behaviors.

2.2.4 Activity/Food Enrichment – Activity/food enrichment can be an important part of the Environmental Enrichment Program. However, the selection of activity/food enrichment should take into account the health of the animal, the limitations of its confines and its impact on the research being conducted. Any activity/food enrichment should be planned in consultation with the Attending Veterinarian (AV) and the Principal Investigator (PI).

2.3 The enrichment program is carried out by University Research Animal Resources (URAR). Specific needs and requirements should be communicated to the Assistant Director of the Animal Resources (AR) Unit.

2.4 Unless specifically justified by the PI in the Animal Use Proposal (AUP), all animals will receive enrichment. It is recognized that animal enrichment can be a research variable. In caring for the psychological well-being of animals, it is important to recognize limitations and use a balanced approach in providing the best possible care and allowing for the expression of species-typical behavior within a functioning research environment.

2.5 Abnormal Behaviors:

The Environmental Enrichment Program is a dynamic process. Ongoing evaluation is a necessary component to meeting the goal of more species-specific natural behaviors. University Research Animal Resources (URAR) will regularly monitor all enrichment, in part, by looking for stereotypical behaviors that might indicate animal stress or maladaptation to the laboratory environment.

Abnormal behaviors in poultry include:

- Feather pecking
- Cannibalism
- Aggressive behavior (particularly in turkeys)
- Excessive flightiness and fearfulness
- Agitated pacing behavior (particularly with attempting to nest)

When these behaviors are observed, URAR will evaluate the need for additional environmental enrichment. All changes to enrichment will be approved by the AV and the PI. Enrichment changes will be made for all animals on study, in order to minimize research variability, even if all of the animals are not showing the stereotypical behavior.

3.0 PROCEDURES:

3.1 Social Enrichment – Poultry will be group housed whenever possible. If group housing is not possible, animals will be housed in a manner that allows for as much tactile, auditory, visual or olfactory contact as possible. Positive human interaction will be provided by Animal Care Staff on a regular basis, especially for chicks to encourage appropriate human socialization.

3.2 Physical Enrichment - in order of preference

3.2.1 Perches for adult birds (appropriately sized, of appropriate height and cleanable)
3.2.2 Nestboxes (dark and cleaned regularly)

3.2.3 Dust baths made of peat or sand

3.3 Activity/Food Enrichment - in order of preference

3.3.1 Foraging devices or feed scattered with litter to encourage foraging
3.3.2 Live insects (e.g. worms, grubs)

4.0 RECORDS:

The Animal Care Staff will log provision of enrichment daily according to their facility specific documentation records.

5.0 DEFINITIONS AND REFERENCES:

5.1 Definitions:

5.1.1 Animal Use Proposal (AUP): a detailed written description of the procedures involving the use of animals in a research or instructional project.
5.1.2 Attending Veterinarian (AV): the veterinarian responsible for the health and well-being of all laboratory animals used at the institution
5.1.3 Enrichment: a method of providing animals with the opportunity to behave as they do in the wild, playing, foraging, grooming, and interacting in other ways with one another.
5.1.4 Principal Investigator (PI): the scientist who plans and coordinates all phases of the research or instructional work and the protocol.
5.1.5 Standard Operating Procedure (SOP): a set of standardized instructions for dealing with routine laboratory procedures

5.2 References:

Animal Welfare Act and Regulations: Public Law 99-198 – The Improved Standards for Laboratory Animal Act (http://www.nal.usda.gov/awic/legislat/awa.htm)

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