

THE UNIVERSITY OF WAIKATO

APPLICATION TO THE ANIMAL ETHICS COMMITTEE
FOR APPROVAL OF EXPERIMENTS ON ANIMALS

ANIMAL SPECIES: Hens

(Use common name)

NUMBER OF ANIMALS: 6

STARTING DATE: April 27 2012

COMPLETION DATE: July 27 2013

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1. (a) **Name of applicant:** Laura Claire Schroeder _____
- (b) **Position:** Masters student _____
- (c) **Department:** Psychology _____
- /Address for Mailing)** 72A Palmerston Street, Hamilton, 3214 _____
- (d) **Contact Phone number & email address:** 0273403923, laura.schroeder@hotmail.com _____
- (e) **Qualifications and Experience:** BSocSci
- (f) **Have you previously carried out related experiments?** No

Previous Protocol No(s)

Applicants should attach a short report on the results of the previous experiment(s)

(g) **Other Personnel involved** (including titles and roles):

Mary Foster- primary supervisor; Lewis Bizo- secondary supervisor. Jenny Chandler- animal technician; Masters and Doctoral students- assistance in running experiments.

2. **Title of Project:**

The effect of background diet on hens' preferences for different foods

3. **Aim of Project** (written in terms that people with a non-scientific background will understand):

One aim is to examine the effect that altering the food used as the base diet has on the preferences of hens for different foods worked for in the experimental chamber. A further aim is to investigate whether food preferences are stable across different body weights.

4. **Significance of this Project** (written in terms that people with a non-scientific background will understand):

Experimental methods are used to examine hens' preferences for different feeds (or other commodities) to provide information on their preferences. In such studies the hens still have access to food and other commodities outside of the experimental setting. To our knowledge there are no studies of the effect of this on preferences with hens. If there is an interaction between diet and the feed used in the chamber then this will need to be considered in future studies of animal food preferences.

5. **Is/Has this work already being/been carried out** (provide details)

(a) **In New Zealand?** No, a related experiment has been carried out at the same laboratory but not examining this specific phenomena [REDACTED].

(b) **Overseas?** No

6. Have alternative methods to achieving the aims that do not involve the use of animals been explored? No

Please provide details.

As this research is examining the food preferences of hens there is no non animal alternative.

7. How will the results of this work be disseminated?

The results from these experiments will form my MAppPsych thesis. The results will possibly be submitted for publication in peer reviewed journals, as well as potentially be presented at either national or international conferences.

8. Description of Experiments

All experiments should take into account the statutory responsibility to adhere to the three important principles governing the use of animals in research, testing and teaching:

- a) Refinement (refinement of procedures applied to decrease to the minimum practicable extent the negative impacts they have on the animals):
- b) Reduction (reduction in the numbers of those sentient animals to the minimum necessary to achieve the scientific objective):
- c) Replacement (replacement of animals with non-sentient animals or non-animal alternatives):

(a) Full details of procedures

The first experiment will take place in the hens' own home cages. The free feeding body weight of the hen's will be determined by regular weighing over 2-3 weeks when the hens are allowed free access to their normal food (pellets). After this weight has been determined the hens' weights will be gradually reduced to 80% of their free feeding weights. In order to facilitate the management of the hens' weight, they will be housed individually during this part of experiment. The hens will have free access to water and will be given supplementary feedings of vitamin enriched food, and health grit on a regular basis. The hens will also be exposed to all three different types of foods. The hens will then be trained to eat from a raised food hopper in an experimental chamber and trained to peck a lit key to get access to each of three different types of foods (the intention is to use whole grain wheat, puffed wheat and commercial laying pellets).

Once responding is established the hens will be exposed to a Concurrent Variable Interval (VI) Schedule in which two keys are available to peck, and the first peck after an average amount of time will produce 2 second access to a food reinforcer. Experimental sessions will not last longer than 60 minutes. I anticipate that VI schedules will be VI60-s, which means that the hens' key pecking will be reinforced with food on the average of 60 seconds.

Each of the two hoppers in the chamber will contain food, one type always being wheat (the typical reinforcer used in experimental sessions with hens) and the other will be either pellets (a familiar food) or puffed wheat (a novel food). In the first session, both hoppers will contain wheat so bias in responding can be measured and used to analyse subsequent data. Further sessions will involve each hen being fed one of the foods in their home cages for ten days, then they will work on the concurrent reinforcement schedule for different pairs of food (e.g. wheat/wheat, wheat/puffed wheat, wheat/food pellets).

After all these conditions are completed, the body weights of the hens will be tested at 90% and 100% of their free-feeding weights to examine how the data from the previous conditions relates to hens when maintained at different body weights.

Updated: May 2011

(b) The statistical design of the experiments

A repeated measures design will be used and performance in different conditions will be compared using an analysis of variance and descriptive statistics. The primary dependent variables will be rates of responding and derived measures of response bias.

9. List the relevant SOP's (number and full title) to be used: N/A
10. (a) Where experiments will be conducted: Psychology Animal Behaviour Laboratory, No 3 Dairy
- (b) Where the animals will be housed: Individually in cages for the duration of the experiment
- (c) Person in immediate charge of laboratory and housing: Jenny Chandler
- (d) Veterinary advisor to the laboratory: Ali Cullum _____
11. Is there an operational procedure required for the use of a product (drug/chemical) in these experiments? No
- If 'Yes' this will require an Institutional Drug Administration Order, this should be arranged with the Institutional Operating Plan Validator.
- See Appendix 1: *Is an Institutional Drug Administration Order Required?* Yes/No
- Name the product: _____
12. (a) Anaesthetic:
- Local: N/A
- General: N/A
- (b) Method of Restraint: N/A
- (c) Will the animal have to recover from anaesthetic? N/A
- (d) How will you deal with post-operative pain and/or discomfort? N/A
13. What is the fate of the animals at termination of experiment? Retained in experimental colony, re-housed to barnyard flocks or, if ill, humanely euthanized.
14. Has this application in whole or in part previously been declined approval by another Animal Ethics Committee? No
15. For experiments to be undertaken at Ruakura or at other facilities under the control of another Animal Ethics Committee, has an application also been made to that Committee? No
- If 'YES' state which Committee _____

16. Is any of this work being used in a thesis to be submitted for a degree at The University of Waikato? Yes
17. Are any permits (e.g. DOC) or approvals (e.g. Iwi) required? No
- If 'YES':
Have the permits or approvals been obtained? N/A
- List details of permits/approvals required _____
18. I have read and understand the conditions outlined in the Code of Ethical Conduct for the Use of Animals for Teaching and Research. Yes
http://www.waikato.ac.nz/research/unilink/uow_only/Approved%20Code%202010%20-%202014.pdf
19. I have read the Good Practice Guide for the Use of Animals in Research, Testing and Teaching <http://www.biosecurity.govt.nz/files/regs/animal-welfare/pubs/naeac/guide-for-animals-use.pdf> Yes
20. Further conditions:
If this application is approved, I will inform the Committee of any changes in the project or unexpected outcomes affecting animal welfare, and any event (beyond any approved manipulation) impacting adversely on animal welfare.

Signed by the applicant:

L Schroeder

Date:

13/4/2012

I accept responsibility for this project's compliance with the University's Code of Ethical Conduct for the Use of Animals for Teaching and Research.

Signed by the Supervisor:

[Signature]

Date:

13/4/2012

I accept responsibility for this project's compliance with the University's Code of Ethical Conduct for the Use of Animals for Teaching and Research.

Approved/~~NOT~~ approved

Signed on behalf of the Committee:

[Signature]
(Chairperson)

Date:

20/4/2012

ANIMAL USE STATISTICS APPLICATION/FINAL RETURN FORM

Protocol ID

854

If more than one animal type is required then fill in one form for each type

Application: When applying to the AEC for approval of a manipulation the applicant should complete Box 1 and enter in Questions 2 - 9, in the 'Planned' column (P), the appropriate figures for the number of animals required.

Final return: When the manipulation is completed the approved original application form will be returned. Boxes 2 to 10 should then be completed in the 'Used' column (U) by entering appropriate figures for the number of animals which were actually used.

NAME/INSTITUTION: Laura Schroeder, University of Waikato

1. **Animal type** Chickens Code: 1 p
(see Appendix A page 3 of this form)

2. Source of animals (number)

		P	U
Breeding unit	a	6	
Commercial	b		
Farm	c		
Born during project	d		
Captured	e		
Imported	f		
Public sources	g		
TOTAL = A		6	

3. Status of animals (number)

		P	U
Normal/conventional	a	6	
*SPF/germ free	b		
Diseased	c		
Transgenic/chimaera	d		
Protected species	e		
Unborn/prehatched	f		
Other	g		
TOTAL		6	

*Specific pathogen free

4. Main category of manipulation/use (enter the total from 2 above in one box only)

		P	U			P	U			P	U
Teaching	a			Animal husbandry	d			Veterinary research	g		
Species conservation	b			Basic biological research	e	6		Testing Development of alternatives	h i		
Environmental management	c			Medical research	f			Other	j		

5. Any re-use of animals (number to be inserted)

		P	U			P	U	
No prior use	a	6		Previously used	b	6		Total a + b = 6

6. Grading of manipulations/use (number in each grade to be inserted). For examples of grades of manipulation see these in "Grades of manipulation" Appendix B on page 3 of this form.	Grade	P	U
Manipulations that are expected to cause no impact or virtually no impact. No impact	A		
Manipulations of minor impact and short duration. Little impact	B	6	
Manipulations of minor impact and long duration or moderate impact and short duration. Moderate impact	C		
Manipulations of moderate impact and long duration or high impact and short duration. High impact	D		
Manipulations of high impact and long duration. Very high impact	E		

7. Expected date of completion:

ANIMAL DISPOSITION/FATE AT CONCLUSION OF EXPERIMENT/TEACHING EXERCISE ETC OUTLINED IN THIS PROTOCOL

8. ALIVE		P	U	9. DEAD		P	U
Retained by your institution's	a	6		Killed for dissection, sampling, taking organs	a		
Returned to commercial farmers	b			Died/destroyed in the course of the manipulation/use	b		
Released to the wild	c			Euthanased after manipulation or use	c		
Disposed of to others	d			Died/destroyed for reason not associated with manipulation/use	d		
TOTAL ALIVE	=B=	6		TOTAL DEAD	=C=	0	

To be completed at conclusion of protocol

10. GRAND TOTAL MANIPULATED/USED = B + C

Check on the final return that B + C = A in the "Used" column of Box 2.

ANIMAL TYPE CODES:

Type of animal used. No distinctions on basis of sex, age, breed, strain or physiological condition.

BOX 1		CODE LETTERS				CODE LETTERS	
Rodents	1	a	Mice	Birds	1	p	Fowls, Chickens
	1	b	Rats		1	q	Pigeons
	1	c	Guinea Pigs		1	r	Other Birds
	1	d	Hamsters	Miscellaneous	1	s	Marine Mammals
Rabbits	1	e	Rabbits		1	t	Possums
	Farm Animals	1	f		Sheep	1	u
1		g	Cattle		1	w	Amphibia
1		h	Goats	1	x	Fish	
1		j	Deer	Other	1	y	Other Species
1		k	Pigs		(°name)		
Other Domestic		1	m		Horses		
Mammals	1	n	Dogs				
	1	o	Cats				

Appendix B

Grading of Manipulation Examples

Grade A – “No impact or virtually no impact”

Examples:

Mental state: Field observations of grazing behaviour on farms, or benign handling of tame and trained animals that are familiar with all personnel and procedures and with the place where the procedures are conducted.

Food/water: Animals kept outdoors eating their usual food in appropriate amounts; grazing trials on treated pastures; offering supplements to naturally available food; provision of complete, balanced rations to meet all nutritional requirements of animals maintained indoors.

Environmental challenge: Exposure to ambient conditions that are within the thermoneutral range; reduced barometric pressures which do not cause increases in red blood cell production.

Disease/injury/functional impairment: Studies of healthy uninjured animals that are kept in physical conditions which do not themselves lead to injuries such as lameness or compression sores; studies to establish normal characteristics of healthy animals.

Behaviour: Studies of wild or undomesticated animals in their natural habitats; field studies of domesticated animals.

Grade B – “Little impact”

Manipulations of minor impact and short duration

Examples:

Mental state: Experiments on completely anaesthetised animals that do not regain consciousness; simple venipuncture or venisection; injection of non-toxic substances; skin tests which cause low-level irritation without ulceration/erosion; feeding trained animals by orogastric tube; movement of free-range domesticated animals to unfamiliar housing; minor restrictions of water and/or feed intake beyond the normal period of satiation.

Food/water: Water priming for kidney function tests; short-term overall food intake restrictions or excesses that are within usual tolerance levels for the species; short-term changes in dietary composition that cause no clinical signs of deficiency or toxicity, but which would cause such symptoms in the longer term.

Environmental challenge: Exposure to levels of cold or heat that are outside the thermoneutral range, or barometric pressures that increase red blood cell production, but which remain within the capacity of the animals to adapt and do not lead to debility in the long term.

Disease/injury/functional impairment: Studies of vaccines using killed pathogens; tuberculosis tests; induction of mild fever without other debilitating effects; induction of subclinical parasitism; healing of minor superficial incisions, cuts or wounds; minor surgical and/or pharmacological modification of homeostatic capacity (for example, creation of non-obstructive gut fistulae; splenectomy; endocrine gland removal with complete and permanent hormone replacement therapy); physical conditions which cause transient lameness of low intensity, mild compression sores or abrasions.

Behaviour: Mild and short-term physical restraint; keeping free-range domesticated animals in a yard; movement of free-range domesticated livestock to unfamiliar housing; operant conditioning with positive reinforcement in barren laboratory environments; benign preference tests in unnatural surroundings.

Grade C – “Moderate impact”

Manipulations of minor impact and long duration or moderate impact and short duration

Examples:

Mental state: Recovery from major surgeries like thoracotomy, orthopaedic procedures, hysterectomy or gall bladder removal with effective use of analgesics; surgical procedures on conscious animals but with the use of local anaesthesia and systemic analgesic; movement of excitable free-range domesticated livestock to unfamiliar housing; short term capture, handling and restraint of wild or semi-domesticated animals that exhibit marked flight responses; moderate restrictions of water and/or feed intake beyond the normal period of satiation.

Food/water: Simulation of usual overall intake restrictions often experienced by pregnant/lactating ruminants during cold winters or drought; dietary induction of milk fever in cattle; induction of mild deficiency or toxicity signs by feeding diets containing inadequate or excessive amounts of essential nutrients.

Environmental challenge: Short-term exposure to severe extremes of cold or heat which would lead to collapse if prolonged.

Disease/injury/functional impairment: Studies of live vaccines; induction of clinical parasitism; induction of mild reversible infectious diarrhoea; moderate surgical and/or pharmacological modification to homeostatic capacity (for example, limited gut resection; endocrine gland removal with delayed or incomplete hormone replacement therapy); physical conditions that cause minor chronic lameness or other injuries; studies of the effects of infectious or toxic agents that cause rapid death without distress.

Behaviour: Medium-term restrictions of instinctive behaviour; medium-term holding of ruminants in a metabolism crate; long-term restraint leading to the development of reversible stereotypies; changing social group composition.

Grade D – “High impact”

Manipulations of moderate impact and long duration or high impact and short duration

Examples:

Mental state: Recovery from major surgery under anaesthesia without the use of postoperative analgesics; marked social or environmental deprivation; longer term capture, handling, restraint or housing, without the use of tranquilisers, of wild or semi-domesticated animals that exhibit marked flight responses.

Food/water: Dietary induction of advanced pregnancy toxemia in sheep or ketosis in dairy cattle; dietary induction of advanced signs of nutrient deficiency or excess; severe deleterious effects of dietary toxins; severe restrictions of water and/or feed intake beyond the normal period of satiation.

Environmental challenge: Prolonged exposure to severe cold or heat that would lead to failure of thermoregulation and collapse, but the exposure is terminated just before those outcomes.

Disease/injury/functional impairment: Studies of severe facial eczema; induction of severe diarrhoea or severe infectious pneumonia; protracted or irreversible pharmacological modification of homeostatic capacity (for example, chemical induction of diabetes mellitus without replacement therapy); marked surgical modification of homeostatic capacity (for example, extensive gut resection; cutting of sensory or motor nerves serving large areas of the body from which no self-mutilation injury results; precise lesioning of limited areas of the brain but with intervention before collapse); physical conditions that cause moderate chronic lameness or other injuries; studies of the effects of infectious and toxic agents that cause either a protracted death with minor distress or a rapid death with moderate distress.

Behaviour: Application of marked and repeated noxious stimuli from which escape is impossible; prolonged periods (several hours or more) of close physical restraint; marked alterations to the perceptual or motor functions of animals to test consequent behaviour.

Grade E – “Very high impact”

Manipulations of high impact and long duration

Examples:

Mental state: Conducting major surgeries without the use of anaesthesia on control animals in assessing efficacy of analgesics; testing the efficacy of analgesics in animals with severe induced pain.

Food/water: Experiments that cause animals to die from poisoning by toxins in the diet; protracted and severe restrictions on water and/or feed intake.

Environmental challenge: Purposeful exposure of conscious animals to lethal extremes of cold, heat or barometric pressure which duplicate naturally occurring conditions.

Disease/injury/functional impairment: Studies of methods for killing pest animals; cutting of sensory or motor nerves serving large areas of the body from which self-mutilation injury results; evaluation of vaccines where death is the measure of failure to protect; studies of the effects of infectious or toxic agents which cause either a protracted death with marked distress or a rapid death with severe distress.

Behaviour: Application of marked and repeated extremely noxious stimuli from which escape is impossible; prolonged periods (several hours or more) of close physical restraint.