Animal Care and Use Protocol
Agricultural Animals Study Protocol

(กรอกข้อมูลเป็นภาษาไทย หรือ ภาษาอังกฤษ)

Protocol number		This section will be filled by the BUU-IACUC
Date of submission (dd/mm/yyyy)		
Date of approval or request revision (dd/mm/yyyy)		
Date of resubmission (dd/mm/yyyy)		
Date of approval or disapproval (dd/mm/yyyy)		
Date of expiration (dd/mm/yyyy)		

1. Protocol title:

(Thai) .....

(English) .....

If this protocol is a part of the main project, please provide the main project title

(Thai) .....

(English) .....

Principal investigator of the main project

Name ..... Affiliation .....

Phone..... E-mail.....

Animal use license no ..... Expired date .....

2. Principal investigator of the submitted protocol: *For a student thesis, the principal investigator is the principal adviser and the student is a co-investigator*.

Name ..... Affiliation .....

Phone..... E-mail.....

Animal use license no ..... Expired date .....

3. Co-Investigators:

3.1 Name..... Affiliation .....

Phone..... E-mail.....

Animal use license no ..... Expired date .....

3.2 Name..... Affiliation .....

Phone..... E-mail.....

Animal use license no ..... Expired date .....

3.3 Name..... Affiliation .....
Phone..... E-mail.....
Animal use license no ..... Expired date .....

4. Contact person in case of emergency

Name ..... Affiliation .....
Phone..... E-mail.....

5. Type of animal protocol:

☐ Research: in the field of .....
☐ Testing/Monitoring, specify.....
☐ Teaching: course title/ level .....
☐ Biological production, specify .....
☐ Animal breeding, specify .....
☐ Other, specify.....

6. **Anticipated protocol period:** From …….....to.....
(วันเริ่มต้นต้องไม่ก่อนวันที่โครงการได้รับการรับรอง)

7. Grant proposal: Please select **ONE** of the following options

☐ To be submitted; from.....
Amount requested .....
Funding period from .....to .....
☐ Has been submitted; from.....
Amount requested .....
Funding period from .....to .....
☐ Received from .....
Amount requested .....
Funding period from .....to .....
☐ Other.....

Your signature(s) as Principal investigator (PI) and Co-investigator(s) on this application verify that the information herein is true and correct and that you are familiar with and will comply with the standard of animal care and use established under the ethical guidelines and policies of Burapha University (BUU) and Office of the National Research Council of Thailand (NRCT).

Principal investigator: Name …….....……

_____ _____
(Signature) (Date)

Co-investigator: Name …….....……

_____ _____
(Signature) (Date)

Co-investigator: Name …….....……

_____ _____
(Signature) (Date)

Co-investigator: Name …….....……

_____ _____
(Signature) (Date)

****

Approval:
BUU-IACUC review: ☐ Approved ☐ Disapproved

_____ _____
(Chair, BUU-IACUC) (Date)

Burapha University
Standardized Research Protocol Format
for Permission of Animal Care and Use

1. Protocol title:
(Thai) .....
(English) .....

2. Non-technical summary: *Provide a brief description of the project that is easily understood by non-scientists, expressing its significance and your reasons for undertaken the study.*
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.....

3. Rationale and literature review: *Include a brief statement of the requirement for the information being sought. Typically, the literature or the experience that led to the proposal will be briefly reviewed, references cited will be provided.*
.....
.....

4. Objective(s)/hypothesis: *Provide goal/specific aim of this project.*
.....
.....

5. Potential benefits of the study: *Explain how the study is important to human or animal health and the advancement of knowledge.*
.....
.....

6. Experimental design and general procedures: *Provide a complete description of animal use, including animal species, study groups, and what will be done to the animals. Succinctly outline the formal scientific plan and direction for experimentation. A diagram or chart may be helpful to explain complex design.*
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.....

7. Animal used and justification:

7.1 Description of animals

Animal type	Breed	Age	Weight	Sex	Number
Swine	Duroc X (Large White X Landrace)	21 days	-	M/F	50/50
Broiler	Ross	1 day	-	Unsexed	

Example

7.1.1 Special consideration: *List specialized requirements for the research animals. (If any)*

…….....

7.1.2 Source/ Vendor: .....

7.1.3 Transportation: .....

…….....

7.2 Scientific justification for animal species; number requested; and data analysis.

7.2.1 Animal model and breed justification: *Provide a scientific justification for the choice of animal model(s). What physiological and morphological characteristics does this animal possess that make it the best possible model?*

.....

.....

7.2.2 Number of animals required:

7.2.2.1 For research: *Provide an explanation of how the numbers of animals to be used in each group or total were appropriate. Number of animals used in the experiment should be based on scientific and statistical requirements to achieve objectives.*

.....

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7.2.2.2 For animals used in teaching agricultural or animal production system, provide a rationale for the number of requested animals based on

(1) the minimum number of animals needed to effectively maintain a working system for demonstration

.....

.....

(2) the number of animals for students

.....

.....

7.2.3 Data analysis/statistical method: *List the statistical test(s) planned or describe the strategy intended to evaluate the data.*

.....

.....

8. Animal care:

8.1 Study location: *Where will the study take place?*

.....

.....

Has permission been obtained from all appropriate private landowners or public land managers to conduct study on their lands?

☐ Yes ☐ No

If **no**, please explain .....

.....

.....

8.2 Describe the enclosures: *i.e. cages, pens, crates, etc* ***to be used.*** *Give dimensions or square footage, materials, general design features, etc. Include description of lots and pastures (size, fencing, etc.) if applicable.*

8.2.1 Housing system

☐ Open system, specify .....

☐ Close system, specify .....

☐ Others, specify .....

8.2.2 Cage/ Pens

8.2.2.1 Cage material and size

☐ Concrete, size .....

☐ Metal, size.....

☐ Plastic, size .....

☐ Others, specify .....

8.2.2.2 Floor material

☐ Plastic

☐ fully slatted

☐ part slatted

☐ Concrete

☐ fully slatted

☐ part slatted

☐ solid

☐ Metal/ wire

☐ Others, specify .....

8.2.2.3 Bedding

☐ No

☐ Yes, specify .....

8.3 Environment requirements:

8.3.1 Temperature

☐ Natural

☐ Other, specify .....

8.3.2 Humidity

☐ Natural

☐ Other, specify .....

8.3.3 Light source

☐ Natural

☐ Other, specify .....

8.3.4 Light cycle

☐ Natural

☐ Other, specify .....

8.3.5 Air ventilation rate

☐ Natural

☐ Other, specify .....

8.4 How many animals will be kept in each enclosure?

.....

If there will be changed in the number of animals per enclosure as the animals are grown up, please describe.

.....

.....

8.5 Describe the feeding equipment: *Identify type (open bunk, individual box, group feeder, etc.), the number of each type per enclosure, and size. Indicate the space per head if feeder is shared.*

8.5.1 Feeding equipment:

☐ Open bunk, one bunk per ….....…… heads

☐ Individual box

☐ Other, specify .....

8.5.2 Feed type: *check all that apply*

☐ Pellet

☐ Crumble

☐ Mash

☐ Roughage, specify .....

☐ Total mixed ration (TMR)

☐ Other, specify .....

8.5.3 Feeding program:

☐ Ad libitum

☐ Other, specify .....

8.6 Describe the watering equipment: *Identify type, number of each type per enclosure, and size. Indicate space per head if a waterer is shared.*

8.6.1 Watering equipment:

☐ Nipple: number per enclosure .....

☐ Water cubs: number per enclosure .....

☐ Other, specify.....

8.6.2 Watering schedule:

☐ Ad libitum

☐ Other, specify.....

9. Veterinary medical care: *Describe the routine veterinary care and responsible persons. List the criteria used for health evaluation while the animals are on study.*

9.1 Routine veterinary care

☐ By whom: .....

☐ Describe the criteria used for health evaluation .....

.....

.....

9.2 Special veterinary medical care: *Animals receiving treatments that are deviated from normal will be provided special veterinary medical care according to each protocol.*

☐ No ☐ Yes

If **yes**, please describe .....

.....

.....

10. Animal welfare:

10.1 Literature search for duplication: *This search must be performed to prevent unnecessary duplication of previous experiments.*

10.1.1 Database(s) searched .....

10.1.2 Date of search: *must be within six months prior to IACUC meeting dd/mm/yyyy*

.....

10.1.3 Period of information searched: *range of years searched*

.....

10.1.4 Keywords used in search .....

.....

10.1.5 Results of search*: provide a narrative description of the results of the literature search.*

☐ No.....

☐ Yes, explain why it is scientifically necessary to duplicate any previous work?

.....

.....

10.2 Briefly describe how you have considered each of the following alternatives (the 3Rs) or why they are not applicable.

10.2.1 Replacement of animals: *e.g., with in vitro models, computer models or less sentient animals.*

.....

.....

10.2.2 Reduction in the number of animals: *e.g. using appropriate statistical methods in the design and analysis of the study; reduction in experimental variability by using animals of defined genetic or microbiological status; sharing tissue among investigators.*

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.....

10.2.3 Refinement of experimental procedures to minimize pain or Distress: *e.g. early endpoints; use of analgesics, anesthetics or sedatives; techniques that reduce stress in the animal.*

.....
.....

10.3 Potential animal pain and distress assessment

Do the proposed animal activities involve potentially painful procedures? *Painful procedures include surgery and procedures that may cause more than momentary or slight pain or distress to the animals.*

☐ No ☐ Yes

If **yes**, complete the following:

1) Describe the procedures for ensuring that discomfort, distress, pain, and injury will be limited to that which is unavoidable in the conduct of this protocol.

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.....

2) If any procedure(s) will cause pain or distress and analgesia/anesthesia cannot be administered, list each procedure with justification for the exclusion of analgesia/anesthesia.

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3) If painful or stressful outcomes are anticipated in this protocol, describe the criteria and process for timely intervention, removal of animals from a study, or euthanasia.

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.....

4) List the analgesics, anesthetics and (or) tranquilizing drugs and their dosages to minimize discomfort, distress, pain and injury.

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.....

11. Surgery: Does this protocol involve survival surgery?

☐ No ☐ Yes

If **yes**, please answer the following:

11.1 Location: *State where the aseptic surgery will be performed.*

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.....

11.2 Surgeon/Qualification: *Indicate who will perform the surgery, and his/her qualifications, training, or experience in the proposed procedure.*

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.....

11.3 List the sedative, analgesic and anesthesia and their dosages:

.....

.....

11.4 Surgical Procedure: *Describe in detail any surgical procedures planned and/or add a reference.*

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11.5 Pre-and Post-operative provisions: *Detail the provisions for both pre-and post operative care, including provisions for post-surgical observations.*

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.....

11.6 Describe long-term care of any chronic survival procedures:

.....

.....

11.7 Multiple survival surgery procedures: *Multiple major operative procedures on the same animal must be adequately justified for scientific reasons by the PI in writing.*

11.7.1 Procedures:

.....

.....

11.7.2 Scientific justification:

.....

.....

11.8 Who will be responsible for post-surgical care and treatment?

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.....

12. Sample collection and administration: *Describe in detail method(s), needle sizes, volume(s) collected or administered, and frequency of collection or injections.*

12.1 Sample collection

	Method/ Anatomic location	**Needle size/ catheter size and length**	**Biopsy size**	**Volume or amount collected**	**Frequency (per day/ per week)**
Blood withdrawal					
Body fluid withdrawal					
Tissue/ organ collection					
Other					

12.2 Administration

	Method/Anatomic location	**Needle size/ Catheter size and length**	**Volume or amount administered**	**Frequency (per day/ per week)**
Injection/ infusion				
Gavaging				
Other				

13. Restraint with mechanical devices:

☐ No ☐ Yes

If **yes**, describe device (s), duration of restraint, frequency of observation, conditioning procedures and steps to assure comfort and well-being and how you will minimize a negative effect on the health of the animals.

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.....

If prolonged restraint is used, must provide justification

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.....

14. Project involves food and water deprivation, or dietary manipulation:

☐ No

☐ Yes

☐ A. Feed restriction before blood collection

☐ B. Feed restriction before surgery

☐ C. Other

If **C is selected**, describe methodology. State objective criteria used to assess physical condition and pain, discomfort, stress, and distress during the course of study. Include clinical signs or manifestations expected from the procedure. What criteria will be used to determine a humane endpoint before severe morbidity and death?

.....
.....
.....

☐ Individual animal's weight is monitored every ..... days.

☐ Individual animal's weight is not monitored.

	Amount restricted/ added	Duration	Compound supplemented	Compound deleted	Frequency
Food restriction					
Nutrient alterations					
Other					

15. Endpoints: *Specific humane endpoints must be clearly defined in all animal protocols.*

15.1 Study/ experimental endpoint: *Describe the endpoint for the animals in this protocol when the scientific aims and objectives have been reached.*

.....

.....

15.2 Humane (Early) endpoint is used: *The animals are humanely euthanized prior to the expected date of study termination.*

☐ No

☐ Yes

If **yes**, please specify early endpoint **criteria** used are.....

.....

15.3 Death or moribund as an endpoint is used:

☐ No

☐ Yes, answer the following

15.3.1 Criteria that establish when the endpoint has been reached, and describe how animals will be monitored and care for

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15.3.2 Identification of personnel responsible for evaluating animal condition, record keeping, and notification of the investigator and/or veterinarian to perform euthanasia.

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.....

16. Euthanasia / Disposition of animals after completion of activity:

☐ **Euthanasia, please select method**

☐ Chemical

- How will this be done? .....
- Where will euthanasia be carried out? .....
- Who will do it, and what is their experience in the technique to be used ? .....
- Drug and dose used for euthanasia.....
- Route of administration.....

☐ Mechanical, specify .....

☐ Electrical, specify .....

☐ Other, specify .....

☐ **Transfer**

☐ Transfer to another research project

– Protocol number .....

– PI.....

☐ Transfer to a slaughter house, specify.....

☐ Transfer to a teaching course .....

☐ **Other**, specify .....

17. Animal tissue and carcasses disposal: *Please describe method used to dispose animal tissue and carcasses.*

☐ Standard burial .....

☐ Other, specify .....

18. Biohazard/ Safety:

Is this study involved any biohazardous material(s)?

☐ No ☐ Yes

If **yes**, please select

☐ Infectious agent(s) is (are) used .....

Please provide the certificate of biosafety approval

☐ Biohazardous chemical(s), carcinogen(s) or radioactive(s) material is (are) used, specify.....

☐ Other, specify .....

18.1 Explain any safety precautions or programs designed to protect personnel from biohazards and any surveillance procedures in place to monitor potential exposures.

.....

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18.2 Explain how the waste is decontaminated and disposed.

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.....

18.3 List primary safety equipment and personnel protective equipment requirements.

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18.4 List procedures if accident, injury or illness occurs.

.....

.....

18.5 List specific treatment provision for accidental exposure.

.....

.....

19. Qualifications of personnel: *List all individuals who will be involved in this protocol. If personnel do not have experience, state how they will be trained.*

Name/Status	Qualification/Recent training	Responsibilities in the project

20. List of References used in writing protocol.

.....

.....

21. Assurances: As the PI on this protocol, I verify that the information herein is true and correct and that I am familiar with and will comply with standard of animal care and use established under the ethical guidelines and policies of Burapha University; Office of the National Research Council of Thailand **(**NRCT) and Animal for Scientific Purposes Act B.E.2558 (2015). Additionally, I acknowledge my responsibilities and provide assurances for the followings:

21.1 Animal use : The animals authorized for use in this protocol will be used only in the activities and in the manner described herein, unless a modification is specifically approved by the BUU-IACUC prior to its implementation.

21.2 Duplication of effort : I have made every effort to ensure that this protocol is not an unnecessary duplication of previous experiments.

21.3 Statistical assurance : I assure that I have consulted with a qualified individual who evaluated the experimental design with respect to the statistical analysis, and that the minimum number of animals needed for scientific validity will be used.

21.4 Biohazard/ safety : I have taken into consideration and made the proper coordination regarding all applicable rules and regulations concerning radiation protection, biosafety, recombinant issues, and so forth, in the preparation of this protocol.

21.5 Training : I verify that the personnel performing the animal procedures/ manipulations described in this protocol are technically competent and have been properly trained to ensure that no unnecessary pain or distress will be caused to the animals as a result of the procedures/manipulations.

21.6 Responsibility : I acknowledge the inherent moral, ethical and administrative obligations associated with the performance of this animal use protocol, and I assure that all individuals associated with this project will demonstrate a concern for the health, comfort, welfare, and well-being of the research animals. Additionally, I pledge to conduct this study in the responsibility for implementing animal use alternatives where feasible, and conducting humane and lawful research.

21.7 Scientific review : This proposed animal use protocol has received appropriate peer scientific review and is consistent with good scientific research practice.

21.8 Painful procedures : A signature for this assurance is required by the Principal Investigator if the research being conducted has the potential to cause more than momentary or slight pain or distress even if an anesthetic or analgesic is used to relieve the pain and/or distress. I am not conducting biomedical experiments, which may potentially cause more than momentary or slight pain or distress to animals.

21.9 Research studies : The BUU-IACUC will be notified of any changes in the proposed project, or personnel, relative to this application. I will not proceed with animal experiment until approval by the BUU-IACUC is granted.

Signature.....

(Principal investigator)

Date.....