Department of Animal Resource

College of Agriculture Engineering Science

Salahaddin University - Erbil

Subject: Animal Welfare and Behaviour

Course Book (Year 2 / 2nd semester)

Lecturer's name: Prof Dr Mahbuba A. Mustafa (PhD) & Assist prof Dr. Karwan Yaseen- Theory

Shereen Dhahr (MSc) – Practical

Rand Rostam M. (MSc) – Practical

Academic Year: 2023/2024

Course Book

1. Course name	**Animal Behaviour**
2. Lecturer in charge	**Prof. Dr Mahbuba A. Mustafa and Kaeqan yaseen**
3. Department/ College	**Animal Resource/Agriculture**
4. Contact	**e-mail:mahbuba.mustafa@su.edu.krd** **Korek Mobil:07504555119**
5. Time (in hours) per week	**Theory: 2h+ 3h practices**
6. Office hours	**Saturday, Sunday, Monday, Tuesday & Wednesday (8.30AM to 2:30PM.)**
7. Course code	
8. Teacher's academic profile	**Prof. Dr Mahbuba Abdulghani Mustafa BSc., MSc., PhD** **Lecturer Shereen Dhahir BSc., MSc.** **Assist Lecturer Rand Rostam BSc., MSc.**
9. Keywords	**welfare, behavior, poultry, large animals**

10. Course overview:

Proper animal welfare and behaviour is repertoire of domestic animals (chickens & ruminants) is fundamentally the same as that of their wild ancestors. That is to say, domesticated chickens that revert to a feral state are behaviorally similar to wild jungle fowl and ruminant.

The flock's activities are highly synchronized and consist of regular daily movements within the home range. As natural water sources are essential for nourishment, the two loci of the jungle fowl's habitat are the roosting site and the water hole, which is shared with other animals in the area, including other jungle fowl flocks. They also make use of tree hollows, where rain water accumulates and where they can find insects under the moist, decaying matter.

Chickens & ruminants use their beaks as a primary means of touching and feeling, as well as for picking up and manipulating objects. Their beaks are used in much the same way that we use our hands. The beak is essential for activities such as preening, nesting, and defense. Being extensively innervated and connected to the autonomic nervous system, the tip of the beak is very sensitive, and has neural receptors for touch, taste, and temperature.

Vision is important to chickens and the combined weight of their eyes is equal to that of their brain. Their visual ability surpasses that of humans, with color vision extending into the ultraviolet range and their visual field covering 330°.

Preening, the combing and fluffing of the feathers, is part of a bird's routine grooming. Chickens also keep their plumage in good condition by dust bathing, which helps to remove excess oils. Wild and feral fowl are capable of flying high up into trees to evade predators and they roost in the trees at night. They usually ascend gradually by flying short distances from lower to higher branches. As the light fades in the evening, the birds begin to seek out their roosting sites so that they are settled in their perches before dark.

11. <u>Course objective (Theory):</u>

1- Define general welfare, behavior, the important factors effect on animal and ruminants to achieve them.
2- Describe the welfare in poultry and animal house.
3- Describe committee and organization that deal with animals.
4- Laws & legislation based on welfare and behavior in poultry & ruminant flocks.
5- Methods of animal rearing and housing.
6- The quality of food available in poultry & ruminant flocks.

<u>Course objective (Practical):</u>

The aim of the course for this article is to try effort possible to students all that is needed in this field and the most important points to be learned from the beginning until the end of the course is:

• The most important actions that take place within the coefficient of animal general welfare and behavior. Effect of the internal and external environment.
• The most important actions performed on the rearing systems.

• How to use welfare & behavior in animal houses.
• How to provide suitable environment and habitant for animals.
• Teach students the process of successful of animal welfares.

12. Student's obligation

Students should attend the lectures(theory)in all quizzes during the course, also monthly examination and home work with reports required.

13. Forms of teaching

The forms of teaching include data show, power point, well labeled diagrams, graphs, flowcharts and tables have been incorporated **systems also white board for explaining the subjects which needs more explanation.**

14. Assessment scheme
Theoretical (100%)
Monthly exams 150% = Theoretical
Final exam 50% = Theoretical
Two monthly theoretical examination + Quizzes.

15. Student learning outcome:

During this semester the student should learn the reasons for studying welfare and behavior events of poultry and ruminant animals, and how reared them under suitable conditions.
Observations of chickens in their natural environment and in laboratory tests have shown that these animals display complex behavior, social attachments, strong personalities, and impressive cognitive skills—attributes that rival those of mammals. Given the intricacies of their behavior and psychology, they are fully capable of experiencing both a positive and a negative quality of life. Our attitudes towards these animals may stem in part from simple lack of understanding, and this has largely led us to disregard their suffering as they are raised for meat and egg production.

16. Course Reading List and References:

1. Animal Welfare During Animal Health Emergencies (Abbey Smith, BS; Glenda Dvorak, DVM, MPH, DACVPM, 2016)
2. The Humane Society of the United States(2008)
3. Housing systems, the behavior and welfare (2006)
4. Backyard Chicken Behavior (Richard Blatchford, 2010)
5. Monitoring chicken flockbehaviourr (Frances M. Colles1 and Marian Stamp Dawkins1, 2017)
Magazines and Review (Internet)
• Journal of Animal Science
• International Journal of Animal Science
• Journal Animal Reproductive

17. Course objective (Theory):

- **Animal welfare in developing countries.**
- **The Five Freedoms, principles and criteria for good welfare**
- The **Welfare principles and criteria as defined by Welfare Quality**.
- **Interactions between welfare and productivity**
- **Safe-guarding animal welfare and tis conflict with good welfare.**
- **Poultry welfare and the law housing systems.**
- **Codes of practice, Animal products satisfy certain safety, environmental and welfare standards.**
- **Indigenous breeds kept in small family flocks by villagers in rural areas, and are kept and managed differently.**
- **Factors effect onmajor welfare issues.**

Lecturer's name

Dr. Mahbuba A. Mustafa

• **Welfare issues in a village environment.** • **Welfare issues of layers and broilers in commercial production.** • **Animaland poultry behavior; Beyond the welfare aspects.** • **Reproductive behavior in broiler breeders; inside the black box.** • **Responders: Mental Health and Animals.** • **Adaptation to organic rearing system of eightdifferent Animal genotypes** • **Backyard Animals Behavior**	
18- Course objective (Practical): • Definition of Animal Behavior. • Factors governing Behavior responses. • Effect of Sight, Smell, Hearing, Taste, and Touch sense on behavior. • Social Behavior (Individual recognition, Communication, Pecking and the peck order). • Visitation to a commercial backyard field (poultry and animal farm) • Drinking and Eating (maintenance) Behavior. • Feeding chicks and Feed intake. • Reproduction Behavior. • Hatching synchronization and vocalization. • Nesting Behavior and Nesting Behavior in cages. • Floor eggs : recommendations will help reduce the number of floor eggs produced by a flock. • Non-adaptive or displacement Behavior • Fear in poultry: Effects of fear on productivity	**Shereen Dhahir & Rand**

18- Examination of theory lecture

Q1/A- Define "welfare" , how animal welfare developed in countries. (10 Marks)

Q2/ Numerate the five freedoms, principles and criteria for good welfare. (10 Marks)

Q3/ What are the interactions between welfare and productivity (10 Marks)

Q4/ Explain the following:

A- How you achieved behavior after welfare in animal house. (5 Marks)

B- The factors that effect on behavior in organic rearing of animals. (5 Marks)

The answers of questions : -

Q1/ The welfare means “well-being; happiness; and thriving or successful progress in life”. In relation to animals, different cultures emphasize different aspects. Thus, people from different backgrounds give different relative importance to animal welfare factors such as: i) health and normal biological functioning; ii) the subjective “feelings” of the animals; and iii) the animals’ ability to live a natural life.

The World Organization for Animal Health (OIE) definition of animal welfare refers to how well an animal is able to cope with the conditions in which it lives. This definition, derived from Broom (1986), has widespread, but not universal, acceptance. Other authors continue to emphasize the importance of animals’ feelings and experiences in their definitions of animal welfare (Phillips, 2009). For the purposes of this review, the concept of animal welfare refers to an animal’s overall state of well-being. OIE considers that good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. In general, many different components of an animal’s state must be considered to judge whether its welfare is good or bad. Some of the components that FAO considers important are that the animal should be healthy, comfortable, well nourished, and safe. It is also important that animals are able to express

behaviors that are priorities in a captive environment and that they should not suffer from unpleasant mental states such as pain, fear and distress (although these feelings cannot be measured directly). When considering animal welfare as a whole, it is important to take each of these components into consideration.

Q2/The Five Freedoms were modified in 1979 by the United Kingdom's Farm Animal Welfare Council (FAWC,1979), which proposed that all farm animals should have:

1. Freedom from hunger and thirst;
2. Freedom from discomfort;
3. Freedom from pain, injury and disease;
4. Freedom to express normal behavior;
5. Freedom from fear and distress.

The Five Freedoms have been highly influential, and OIE accepts them as one of the guiding principles governing animal welfare. They are also referenced in most European welfare legislation, referred to by veterinary and animal welfare organizations worldwide, and form the basis for OIE Terrestrial Animal Health Code Article 7.1.1. However, they also have drawbacks. In particular, it is not easy to decide which normal or innate behaviors are important for animals in captive environments. Recently, the European Welfare Quality consortium has expanded and clarified the components of animal welfare, proposing a set of four principles and 12 criteria, as shown in Table 1.

Table 1: Welfare principles and criteria as defined by Welfare Quality

Welfare principles	Welfare criteria
Good feeding	1. Absence of prolonged hunger 2. Absence of prolonged thirst
Good housing	3. Comfort around resting 4. Thermal comfort 5. Ease of movement
Good health	6. Absence of injuries 7. Absence of disease 8. Absence of pain induced by management procedures
Appropriate behavior	9. Expression of social behaviors 10. Expression of other behaviors 11. Good human-animal relationship 12. Positive emotional state

Q3/ Interactions between welfare and productivity

It is often thought that good production will itself guarantee good welfare, but the relationship between production and welfare is more complex than this. In the following two examples, welfare and production are positively associated:

1- In some backyard, village environments, chickens may be able to express normal behavior, but their overall welfare may be poor if they are affected by disease, parasitism or malnutrition. Addressing these welfare issues will also result in increased productivity.

2- In many cases, acute or chronically stressful events will reduce productivity. For example, moving hens from pens to cages produces a marked short-term decrease in egg production. Similarly, chronic stress can impair immune function and lead to increased disease and mortality, and reduced production. However, in the next two examples, welfare and production are in conflict:

3- Intense genetic selection for production traits can have adverse consequences on other aspects of bird health. For example, laying hens selected for high egg production have increased skeletal problems, and broiler chickens selected for very high growth rates have problems with leg health and lameness.

4- Restricting the quantity of feed fed to broiler-breeding flocks/birds is a normal management method because egg production and hatchability are poor if female breeding birds are fed *ad libitum*. However, this means that the birds experience chronic hunger.

Q4/ A- Poultry welfare has been regarded as a controversial topic in modern animal agriculture because of the discrepancy of opinions regarding how animals should be treated and maintained. Part of this controversy is related toan apparent conflict of interest, as it is viewed (by many) that any improvements in animal welfare will necessarily lead to a reduction in economic profit. Behavioral research has been linked to this controversy as welfare and behavior are commonly considered as nearly synonymous by industry and consumers alike. Certainly behavior and welfare research are intimately connected, however, it is necessary to clarify that welfare issues can also be investigated from other angles (endocrinology, neurosciences, production) besides strictly behavioral. In fact, behavioral research can be quite valuable, not only to address poultry welfare, but also to address some production issues and to improve management practices that may, eventually, lead to higher economic returns. Although this paper focuses mostly in broiler production, some of the examples highlighted in this paper may apply in similar terms to other poultry species.

- Group size, density and social dynamics; Looking for the ideal group sizes : Intensive poultry production systems are characterized by housing a large number of animals per unit of space to maximize returns, increasing density and group size simultaneously. Because of the economic and health impact, the effects of high rearing densities are relatively well documented in poultry. Reduction in performance at high densities has been explained as the result of increased social conflict and competition for food resources when the number of animals in the group is too large for them to be able to form a stable hierarchical system. As a result a great deal of research interest was devoted to determining ideal group sizes that would balance social stability and performance.

Q4/ B- In organic rearing: - slow-growing poultry genotypes and to evaluate their adaptability to the organic system. This regulation establishes that '.in organic livestock production, the choice of breeds should take into account of their capacity to adapt to local conditions, their vitality and their resistance to disease and a wide biological diversity should be encouraged.' Therefore, the best equilibrium between animal welfare, adaptability to environment, biodiversity
and productive performance should be found. Within the European Union, the choice of genotypes is based only on the daily weight gain; others have opted for egg-type chickens, but the definition of slow-growth and the relationship between growing rate and adaptability to the organic system is still unclear.

There are cases where improvement of welfare determines a reduction of the production costs (e.g. decrease disease and mortality) and an increase of people's perceptions related to sustainable systems (Napolitano et al. 2013). On the other hand, some behavioral pattern (e.g. kinetic and foraging activity), positively related to the bird welfare and meat quality, negatively affect the weight gain. On the basis of these considerations, the aim of the present study was to evaluate the behavioral aspects and welfare indicators of eight different chicken genotypes through a multifunctional approach (behavior, tonic immobility (TI), feathers condition, presence of body lesions, antioxidant and immune status) in order to assess their adaptability to organic system.

Practical examination

1. Compositional: In this type of exam the questions usually starts with Explain how, What are the reasons for…?, Why…?, How….?

What are Factors that influence social Behavior?

Individual recognition

Communication

Pecking and the peck order

2. True or false type of exams:

In this type of exam a short sentence about a specific subject will be provided, and then students will comment

on the trueness or falseness of this particular sentence. Examples should be provided
*Birds are not highly responsive to touch. **False, Birds are highly responsive to touch**

3. Multiple choices:

In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided.
* Fowls recognize each other by……..
smell b) **appearance**c) vocal calls

20. Extra notes:

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.

21. Peer review پێداچوونەوەی هاوەڵ

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

ئەم کۆرسبووکە دەبێت لەالیەن هاوەڵێکی ئەکادیمیەوە سەیر بکرێت و ناوەرۆکی بابەتەکانی کۆرسەکە پەسەند بکات و جەند ووشەیەک بنووسێت لەسەر شیاوی ناوەرۆکی کۆرسەکە و واژووی لەسەر بکات.
هاوەڵ ئەو کەسەیە کە زانیاری هەبێت لەسەر کۆرسەکە و دەبیت پلەی زانستی لە مامۆستا کەمتر نەبێت.