

An Experimental Course: Animal Handling, Safety, and Well-Being

A.S. Leaflet R3038

Brady McNeil, Graduate Research Assistant;
Heather Jennings, Lecturer; Christen Jackson, Lecturer;
Anna Johnson, Associate Professor;
Jodi Sterle, Professor,
Department of Animal Science

Summary and Implications

Students in the Department of Animal Science at Iowa State University are coming from increasingly diverse backgrounds, with little to no experience working with or handling various livestock species. In order to best accommodate these students, additional courses are being developed, one of which is Animal Science 190X: Animal Handling, Safety, and Well-Being. Through the course, students handle all major livestock species; sheep, swine, poultry, horses, beef cattle and dairy cattle, and are required to demonstrate handling knowledge and skills learned as part of a final assessment. This creates an opportunity for students lacking a livestock background to feel more confident and safer as they interact with livestock species both throughout their collegiate careers and as they enter into the animal agriculture industry.

Introduction

Undergraduate student background as it pertains to livestock experience continues to diversify in the Department of Animal Science at Iowa State University. Students with little to no hands-on livestock experience have voiced concerns in senior exit interviews and have expressed in end of semester surveys that they feel they are at a disadvantage in the animal agriculture field when compared to their peers who have livestock handling experience and thus want to acquire more hands-on experience and training.

The Animal Science curriculum is intended to expose freshmen to the main livestock species and provide the necessary introductory knowledge in Animal Science. After introductory courses, all students are required to choose three species-specific courses at the sophomore-level. These courses include hands-on laboratories where a basic understanding of handling and safety is required. Students not educated in handling, safety and well-being of livestock might find these laboratories challenging, and in turn this may create safety and liability issues.

Very few students within the Department of Animal Science have experience handling all livestock species. Some only have familiarity with one, maybe two different species. Therefore, the objective of this project was to create

an undergraduate course that provides students the background and skill set needed to be confident and safe when handling livestock species at Iowa State University and in their future careers.

Materials and Methods

Course details: Animal Science 190X: Animal Handling, Safety, and Well-Being was approved as an experimental 2-credit class in Fall 2013. The prerequisite for the course is Animal Science 101: Working with Animals.

Content and outcomes: Veterinary and animal science experts were asked to instruct and provide laboratories on species-specific handling, safety, and well-being. Upon completion of this course students should understand the importance of the livestock animal-human interaction and be able to practically demonstrate basic behavioral handling skills. The course outcomes are:

- Exhibit an understanding of farm-animal perceptions.
- Demonstrate factual, scientific and theoretical knowledge of farm animal-human interactions.
- Safely handle and move healthy farm animals.
- Demonstrate proper techniques and methods when handling sick and injured farm animals.
- Certificate in Beef Quality Assurance (BQA) and Pork Quality Assurance Plus (PQA+) programs.
- Define a proactive approach to understand and address farm animal well-being and biosecurity issues.
- Design safe working conditions for interacting with farm animals.

Offered: The course was first offered to undergraduates as an eight-week, half-semester course in Fall 2013 and 2014 and Summer of 2014. All student spaces have been filled for Spring 2015. This course has been also offered as an intense week-long course over winter break 2014 and 2015.

Student interest: This course allows 24 students to be enrolled per semester. To date, 62 students have completed this course, and 23 students are currently taking the course in Fall 2014.

Results and Discussion

Course content: The course is comprised of lectures that cover five main topics: bio-security, movement and safety, animal-human interaction of healthy animals, animal-human interaction of compromised animals and transportation. In addition, students complete Pork Quality Assurance Plus (PQA+) and Beef Quality Assurance (BQA) certificate programs. Students participate in hands-on laboratories that

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cover beef and dairy cattle, horses, poultry, sheep, and swine.

Lectures: Prior to working with animals, students are provided the necessary background information. The first lecture is bio-security, where students will understand the importance of bio-security, what bio-security protocols are, and how to follow them. Movement and safety covers: animal perception, the animals' environment, the importance of animal well-being, and basic handling safety.

Next, students work on the importance of the animal-human interaction in healthy animals. These lectures are taught by species experts and core learning outcomes cover the industry structure and standards, handling tools, life cycle, noting key safety concerns at each stage of production, what is considered abuse, and a hot topics' discussion of the species.

Students learn how to safely manage, handle, and provide proper well-being for sick or injured animals as part of the human-animal interaction of compromised animals, including taking part in case studies involving compromised animals. Transportation goes into basic transport methods for each specie as well as laws and regulations.

Laboratories: Students are exposed to smaller, lower safety risk species first, such as sheep, swine and poultry and after they establish adequate comfort levels they then progress to beef and dairy cattle and horses. Each laboratory exposes the students to different parts of the animal's life cycle and has students perform at least one to two basic handling techniques. Table 1 provides an outline of the handling techniques performed.

Table 1. Handling technique performed by students for lab for each specie.

Specie	Handling technique performed
Sheep	Moving a group of sheep Putting a sheep on its rump
Poultry	Removing bird from cage Proper restraint of bird
Swine	Moving finishing pigs Perform basic sow welfare assessment

Dairy Cattle	Correctly put a halter on a cow Perform hock and lameness scoring
Beef Cattle	Check corral for distractions Move/sort a group of heifers
Horses	Halter and lead a horse Take rectal and heart rate on a horse

Student evaluation: Students are evaluated continuously. Each class includes laboratory participation points, as well as a quiz. At the end of the semester, a comprehensive multiple-choice exam is given and a hands-on final laboratory practicum requires students to perform the basic handling techniques and demonstrate knowledge of handling equipment learned in laboratories. Students also have the opportunity to become BQA and PQA+ certified through the course.

Future: As part of a future study, students will be evaluated through surveys on previous livestock experience and comfort level and complete a written and hands-on pre-test. Following the course, students will be compared to pre-test scores as well as previous livestock experience. After completing degree requirements, students will be asked to reflect on the benefits of this course relative to their collegiate careers.

Acknowledgments

We would like to acknowledge our guest speakers within their field of expertise:

Dr. Alex Ramirez, Dr. Cheryl Morris, Dr. Dan Loy, Dr. Patrick Gunn, Dr. Dan Morrival, Dr. Isa Ehr, Dr. Larry Sadler, Dr. Lee Kilmer, Ms. Nikki Ferwerda and Ms. Kelly Schulz, and Mr. Doug Bear.

Farm managers:

Marshall Ruble, David Breune, Greg Krahn and Bill Larson.

Funding came from The Eldred and Donna Harman Endowment in Teaching and Learning and thanks to all others that made this course possible.