

# Sheep

May 2019

*For more information, contact:*

*Aaron Fisher, Youth Livestock and Equine Specialist, Department of Animal Science*

*Jessy Shanks, Senior Lecturer, Department of Animal Science*

## Fundamental Knowledge and Skills

Listed below are specific learning outcomes that are relevant for achieving success as an advanced in the 4-H Sheep Project. Mastery of the advanced level learning outcomes includes mastery of the beginner and intermediate level learning outcomes. It is important to note that many of these learning outcomes are applicable for learning about other species as well.

## General Industry and Terminology

- Define the following terms: animal welfare, animal rights, public perception, animal behavior, gregarious, anthropomorphism.
- Have a working knowledge of contemporary issues in animal agriculture (i.e., anti-animal agriculture movement, genetically modified organisms, conventional vs. organic production, food insecurity).
- Give examples of ways to minimize the effects of sheep production on the environment.
- Give an elevator speech about animal agriculture and your 4-H sheep project.

## Health and Welfare

- Define the following terms: adjuvant, antimicrobial resistance, Veterinary-Client-Patient Relationship, veterinary feed directive, over the counter, prescription, fecal egg count.
- Differentiate between killed and modified-live vaccines.
- Understand sheep behavior to manage sheep in a low-stress environment.
- Develop a comprehensive biosecurity and vaccination plan for your sheep operation.
- Demonstrate your ability to handle, properly store and dispose of needles, syringes and pharmaceuticals.

## Nutrition and Feeding

- Define the following terms: total digestible nutrients, acid detergent fiber, neutral detergent fiber, cellulose, hemi-cellulose, lignin, fat-soluble vitamins, water-soluble vitamins, ether extract, ash.
- Understand the difference between feedstuffs on a dry-matter and as-fed basis and be able to calculate each.
- Complete a Pearson-square ration formulation with two feedstuffs.
- Describe cause and treatment for metabolic disorders: acidosis, bloat, hypomagnesemia.
- Design the feeding and watering plan for your sheep flock.

## Reproduction

- Define the following terms: corpus luteum, corpus albicans, corpus hemorrhagicum, follicle, oocyte, scrotum, spermatic cord, spermatocyte.
- Describe the role of the following hormones: estrogen, testosterone, oxytocin, progesterone, prostaglandin, luteinizing hormone and gonadotropin releasing hormone.
- Describe the factors that affect breeding behavior in sheep and how they can be manipulated.
- Describe the artificial insemination process in sheep and how it is different from other species.
- Define the following reproductive tools and techniques: embryo transfer, estrous synchronization, cryopreservation, in vitro fertilization, pregnancy diagnosis, scrotal circumference, semen morphology, semen motility.
- Design and implement a breeding program and a lambing protocol for your flock.

## Genetics and Selection

- Identify and be able to explain the purpose for the following breeds: Cotswold, Dorper, Dorset Advantage, Finnsheep, Merino, Polypay, Shetland, Targhee.
- Define the following terms: genomics, heritability, heterosis.
- Collect a DNA sample from a sheep.
- Learn how EBVs and indexes are developed and how to use them in sheep selection programs.
- Incorporate scrapie genetic testing data into your breeding program to decrease scrapie susceptibility in your flock.
- Identify and learn the cause of genetic disorders in sheep: spider lamb syndrome, hairy lamb syndrome, callipyge.

## Carcass and Lamb Products

- Be able to identify all retail meat cuts from a lamb carcass and associate with the correct wholesale cut.
- Understand the factors that affect quality grade and yield grade.
- Use carcass measurements to estimate the quantity of retail product from a carcass and the overall value of the products.
- Identify 10 non-meat products from lambs.

## Equipment and Recordkeeping

- Demonstrate the ability to use sheep equipment learned about in previous levels (i.e., apply an ear tag).
- Understand the necessary items that make up a working facility and their importance in low-stress handling of sheep.

## Extra Learning Opportunities

Listed below are contests and other activities where youth have the opportunity to showcase what they have learned in the 4-H Sheep Project.

- 4-H Portfolio.
- 4-H Round-Up.
- Youth for the Quality Care of Animals Certification.
- Assist Younger Youth.
  - Invite younger members to visit your sheep operation and learn how you manage your sheep.
  - Lead a showmanship clinic.
  - Coach a junior skillathon team.
- Livestock Skillathon Contest.
- Livestock Judging Contest.
- Quiz Bowl.
- Sheep Show and Showmanship.
- Complete the Tennessee Advanced Small Ruminant Producer Program.

AG.TENNESSEE.EDU

Real. Life. Solutions.™