



SHEEP SCENARIO

AWJAC 2009

Team Scenario

QUESTIONS TO ANSWER

1. Please perform an assessment of the welfare of the sheep at the farm (present and discuss positive and negative aspects and their relative weights).
 2. Describe four critical control points that any welfare audit for assessing sheep should include, and describe what your criteria (e.g., cutoff level) would be for determining if a farm passed or failed at each point.
- *Individuals only answer question 1*



FARM OVERVIEW

- 90-acre teaching and research farm at MSU
 - 76 acres of pasture
- Main Barn
 - Manager's office, classroom, supply/workroom, and living quarters for 3 student employees
 - 8 indoor pens
 - Feed storage area
 - Handling facilities
 - Farm shop
- West and North Barns
 - 3-sided sheds for ewe and lamb housing
 - Equipment & hay storage



FLOCK INFORMATION

- 50 crossbred ewes
 - Dorset x Suffolk or Dorset x Polypay crosses
 - Ideal breeding ewes are low maintenance animals that are structurally and reproductively sound and healthy
 - The primary production goal for ewes in the flock is to produce increased pounds of lamb weaned per ewe
- 2 rams
 - Suffolk ram is used for terminal crosses
 - Polypay ram is used to create replacement females
 - The primary production goal for the rams is to produce daughters with good EPDs
- ~100 lambs are born each year
 - 25% of ewe lambs are retained as replacement animals to replace culled breeding ewes and to increase flock size
 - Offspring that are not selected as breeding stock are grown to market weight and marketed commercially



EPD = Expected Progeny Differences

PERSONNEL

- Farm manager
 - BS in animal husbandry degree (and MS completed coursework)
 - 40 years of experience in the sheep industry
 - Leader in the National Sheep Improvement Program since its inception
- 8 undergraduates work part-time to gain experience in sheep management and research
 - Most are animal science, ag tech, or pre-vet majors
 - Most initially have little sheep-specific experience
- Training
 - All personnel have completed applicable IACUC and ORCBS training modules
 - Manager gives all students hands-on training for their jobs and instructs them with regard to specific work-related hazards
 - Records of all training are on file with the farm manager and appropriate institutional offices



PHYSICAL ENVIRONMENT: PASTURES

- 12 pastures of varying sizes
 - Planted with a mix of cool season grasses
 - Perimeter fencing around the pastures is woven wire
 - Internal fencing between pastures is a mix of woven wire and high tensile electrical fencing (to subdivide pastures for grazing if needed)
 - Ewes are pastured together based on which ram they will be bred to
 - Animals are rotationally grazed through the pastures
- Each pasture has a heated, self-filling water tank
 - Tanks are checked daily and cleaned as needed
- Three donkeys on the farm can be pastured with sheep to provide protection from predators



PHYSICAL ENVIRONMENT: PENS

- Main Barn
 - Indoor pens that each connect with an outdoor pen
 - Indoor pen flooring is 1/3 concrete pad (near the barn alley) and 2/3 packed dirt
 - Outdoor pen flooring is packed dirt
 - Straw is used to bed indoor pens
 - Straw is added as needed to keep the pens dry
 - Twice a year all bedding is removed and replaced
- West and North Barns
 - 3-sided barns contain pens that open onto pasture
 - Packed dirt flooring, bedded with straw (as in Main Barn)
- Water and feed are provided in each pen
 - (See pens in main barn for typical feed and water situations.)



BASIC NUTRITION

- Pasture is used to feed the flock much of the year
 - Harvested forages (alfalfa and grass hays, alfalfa haylage) are feed when pasture is no longer available
 - During late gestation and lactation, ewes are given supplemental grain
 - 1 lb corn per ewe
- Sheep in pens have access to free-choice mineral supplement



HANDLING



John Deere Gator

- Moving sheep
 - Sheep are moved between pens by personnel on foot
 - Personnel may use gators to help move flocks between pastures or between the North Barn and other locations
 - No dogs are used for herding
- Restraint and handling
 - Sheep are moved individually into a small catch pen and manually restrained (usually by the farm manager)
 - Sheep are straddled or pressed against the wall with their heads tipped up for quick procedures (e.g., vaccinations)
 - The farm manager tips sheep for shearing and hoof trimming
- Flight zones
 - Matures ewes and rams: <1 m
 - Pre-weaned lambs: 1-2 m
 - Weaned lambs: 3 m



ROUTINE MANAGEMENT

○ Shearing

- Ewes are sheared yearly prior to lambing
- The farm manager shears all animals
- Shearing is done with a 9 tooth shearing comb with runners

○ Hoof Trimming

- Hooves are trimmed yearly by the farm manager
- Additional trims may be performed as needed

○ Identification

- Lambs receive visual ID tags in their left ear within 7 days of birth
- Lambs receive Scrapie ID tags prior to weaning



HEALTH

- New sheep are isolated from the flock for 2 weeks after arrival
- All sheep are observed at least 1x per day
- The farm veterinarian is called to handle emergencies (1-2x/year)
 - The farm manager handles routine health problems, including most dystocias
 - In the event of a severe injury or accident, sheep are euthanized by the farm manager or veterinarian
 - Farm manager: .22 rifle
 - Veterinarian: sodium pentobarbital (delivered IV)
 - Dead animals are composted at the MSU Swine Farm



IV = intravenously

HEALTH

- Sheep receive vaccinations against:
 - *Clostridium perfringens* type C & D (delivered SC)
 - Breeding ewes and rams: 2x/year (including in late gestation for ewes)
 - Lambs: 3 and 6 weeks of age
 - *Clostridium tetani*
 - Lambs: 3 and 6 weeks of age
 - *Campylobacter fetus* bacterin
 - Breeding ewes: 1 month prior to breeding and mid gestation for primiparous ewes
- Parasite control is administered to the flock as needed
 - Fecal egg counts are conducted every 4 months
 - Oral ivermectin or injected levamisole (SC) are the most commonly used agents for treating parasite problems



SC = subcutaneously

HEALTH

- Annual disease incidence in ewe flock
 - Lameness (multiple causes): 10%
 - Respiratory problems: 8%
 - Soremouth: 12%
 - Prolapse (vaginal/uterine/rectal): 4%
 - “Thin ewe” syndrome: 6%
- Annual disease incidence in lambs
 - Pneumonia: 3%
 - Diarrhea (scours): 10%
 - Navel/joint ill: 2%
 - White muscle disease: 4%
- 20% of ewe flock is culled each year
 - Ewes can be culled due to: age, being open, history of disease problems, being bad mothers/poor milkers, etc



BREEDING

- Rams are placed on pasture with ewes from late October – early December
 - 1 Ram: 25 Ewes
 - Rams are painted to detect pregnancy. Paint colors are changed every 18 days
 - First service conception rate = 84%
 - 96% of ewes had conceived by the end of breeding
 - After the first year of breeding, rams are not given breeding soundness exams
- 2 weeks before lambing, ewes are moved into pens in the Main Barn with (3-8) other late gestation ewes
 - Ewes are sheared, vaccinated, and (if needed) wormed
- Records of breed, sex, birth date, flock number, individual ID number(s), and production information are kept for all breeding animals



LAMBING

- Ewes nearing parturition are observed frequently during the day
 - Ewes are also observed at night when large groups of ewes are due to lamb at once or the weather is cold and wet
 - Lambs and ewes are observed to be sure lambs are dry and have nursed within 6 h
- Lambs are born mid-March to mid-April
 - Ewes give birth ~3.5 times before being culled
 - 1.9 lambs born per ewe
 - 8% of ewes have difficulty giving birth
 - Farm staff assists ewe during dystocia
 - 1-2 ewes are lost per year at lambing
 - 12% of lambs are lost per year
 - Hypothermia: 2%
 - Disease: 2%
 - Stillbirth: 1%
 - Rejection or 'over-mothering': 2%
 - Weak lamb in a twin or triplet birth: 5%
 - >60% death rate of one of triplets



LAMB MANAGEMENT

- Neonatal interventions
 - Lambs receive selenium supplement shortly after birth (BoSe, 0.5 ml, SQ)
 - Lambs are tail docked and castrated using the banding method at 10-14 d
- Lambs and ewes are moved from the Main Barn to pens in the West and North Barns at 3-4 weeks of age
 - Lambs have access to hay, mineral supplements, and concentrates provided to their dams
- Weaning
 - Lambs remain in pens through weaning (~2 mo)
 - Dams are moved out to pastures on the other side of the farm
 - Lambs vocalize and pace for 36-48 h following weaning
- Growing and Finishing
 - Lambs have access to pasture starting at ~3 mo
 - Lambs are finished on pasture and are marketed in September (~ 5-6 mo, ~121 lbs (55 kg))

