



Photo credit: Marcia O'Connor



Llamas

Animal Welfare Judging and Assessment Contest 2015

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NOTE

1. THESE ARE FICTITIOUS FACILITIES. They have been created using pictures from multiple sites, and realistic, yet fabricated information. *Neither facility actually exists as presented here.*
2. Please use the images provided throughout the presentation as well as text when making your assessment.



Overview

Farm N

- 30 ha (74 acres) in inland Pacific Northwest
 - Average temperatures: -5°C (23°F) to 30°C (86°F)
 - Average precipitation: 203 mm (8 in)
 - Average relative humidity = 39%
- Started in 1981 with 2 gelded llamas
- Currently 40 llamas
 - 4 breeding males, 14 adult females, 5 geldings, 7 yearlings and 10 crias

Farm S

- 12 ha (30 acres) in Southeast U.S.
 - Average temperatures: 1°C (34°F) to 32°C (89°F)
 - Average precipitation: 805 mm (32 in)
 - Average relative humidity = 71%
- Started in 2001 with sheep, in 2003 added 2 guard llamas
- Currently 40 llamas, no sheep
 - 6 breeding males, 16 adult females, 7 yearlings, and 11 crias



Farm N

- Purpose: Breed and train llamas for trekking
 - Sell llamas for trekking, companionship and breeding
- All llamas registered with International Llama Registry
- Breeding decisions based on conformation and disposition





Farm S

- Purpose: Breed and show llamas
 - Sell llamas for various purposes including 4H, show, breeding and guarding
- Llamas not routinely registered
- Breeding decisions based on color and type of fleece and conformation





Personnel

Farm N

- Wife and husband team
 - Wife works on farm full-time and is president of Northwest Llama Association
 - Husband is semi-retired accountant and writes articles for Backcountry Llama News
- 2 teenage children work on farm before/after school and most weekends
- Family treks with llamas on camping trips
- Sometimes train llamas for others or rescue llamas

Farm S

- Wife and husband team
 - Both work full-time at jobs in nearby city
 - Members of Southern States Llama Association
- Part-time stockperson in afternoons and evenings
 - Has been at farm for 3 years
- Husband and stockperson take llamas to local shows
- Local 4H club meets at farm



Housing: Farm N

- 2 Barns
 - Females, yearlings, geldings and crias housed in Barn 1
 - Breeding males housed in Barn 2
- Fencing is 1.2 m (5 ft) high split rail fence
 - Fencing lined with livestock mesh (with 5 cm x 10 cm openings (2 in x 4 in))
 - Breeding male fencing is 1.8 m (6 ft) high and has 2 strands of electric wire along top 2 rails
- Barn 1 doors and windows open to allow ventilation through and across barn
- Three-sided sheds with hay feeders in pastures connected with Barn 1
- Barn 2 entrance typically left open to allow males to move between barn and pasture
- Extension of roof on side of Barn 2 provides shade for males
- Forest at pasture edges around farm perimeter



Farm N

Barn 2



Shade Cover Barn 2



Cria Fencing



3-Sided Shed

Barn 1





Housing: Farm S

- Two small adjacent barns
 - Males housed in one with farm equipment
 - Females and crias housed in other
 - Barn sides are not fully enclosed by walls
- Sprinklers mounted on external edges of roofs
 - Timers turn them on midday
 - Moisten sandy ground in shady areas near barns
- Fencing is 1.2 m (4 ft) mix of high tensile wire and livestock mesh
 - Mesh openings are 10 cm x 10 cm (4 in x 4 in)
 - Electrified strand of wire along top of fence in male pastures. (Wet vegetation sometimes shorts out fences.)
- Covered hay feeders in bigger pastures
- Shallow pond in largest pasture

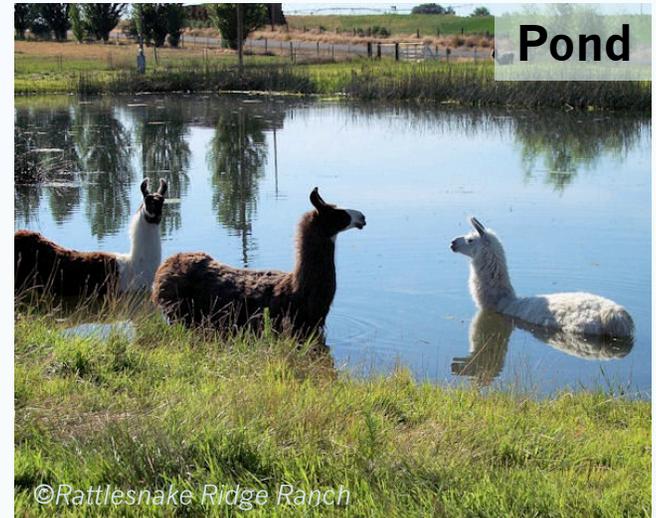


Farm S

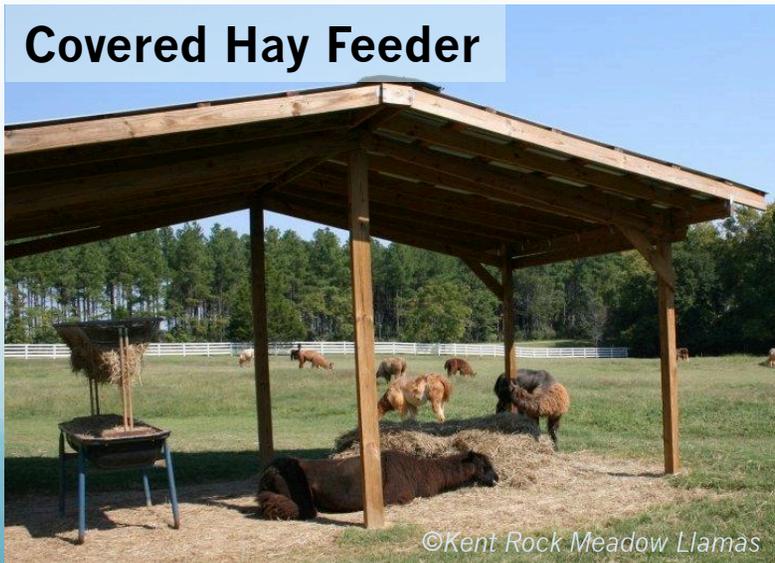
Barns



Pond



Covered Hay Feeder



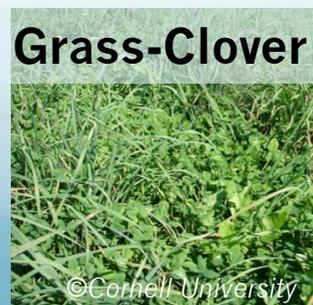
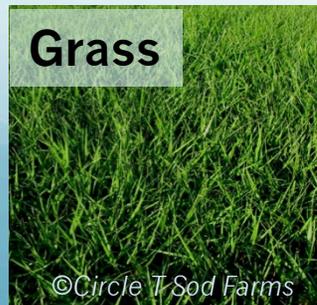
Fencing



Pasture

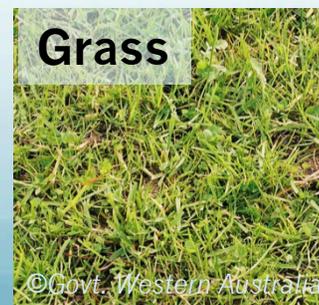
Farm N

- Most pastures are mix of grass species (9% protein)
- Crias and gestating/lactating females graze on clover-grass pastures (14% protein)
- Rotational grazing practiced among 12 pastures based on forage height
- Pastures fertilized in spring and fall and reseeded as needed to maintain desired species



Farm S

- Pastures are a mix of grass species (10% protein)
- Males divided among 3 small pastures
- Females, yearlings and crias share 2 large pastures
- Pastures are fertilized ~ 2 years

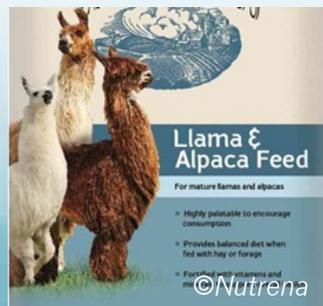




Nutrition

Farm N

- Timothy hay provided when pasture is not adequate (winter, 3x/day, *ad libitum*)
 - 10% protein
- Camelid pellets fed 2x/day to crias and gestating/lactating females
 - Older llamas given mash 1x/day using these pellets



Farm S

- Alfalfa hay is provided 1x/day (*ad libitum*) year round
 - 17% protein
- Equine sweet feed given 1x/day to gestating/lactating females





©Southern States

Nutrition

Farm N

Farm S

- Water tanks in pasture and buckets in barn checked and filled 1x/day
 - Water tanks and buckets and feed tubs scrubbed weekly
 - Tanks have heating elements
- Free-choice mineral mix in tubs in stalls and sheds on pasture
 - Soil testing used to determine what minerals needed

- Water tanks in pastures and buckets in barn checked and filled 2x/day
 - Water tanks and buckets and feed tubs scrubbed each evening and disinfected weekly
- Livestock mineral blocks in stalls and under covered hay feeders



©The Emerald Desert



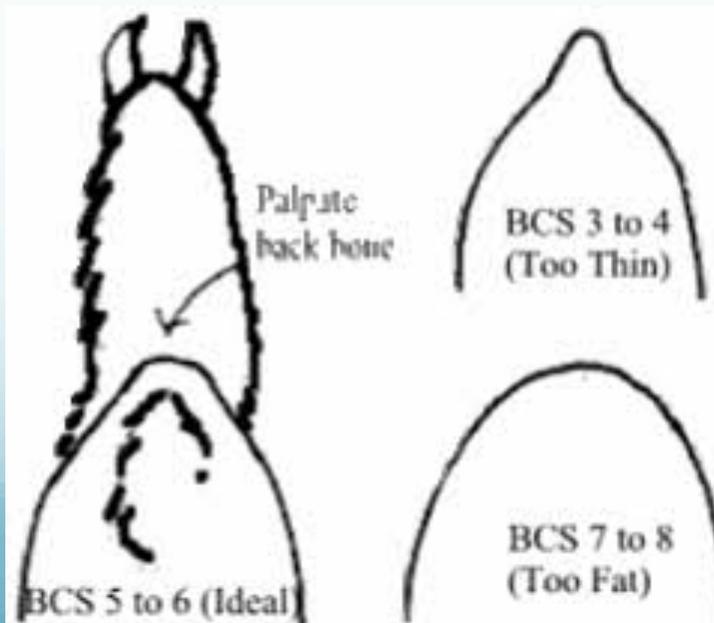
Nutrition Outcomes

Farm N

- Body condition score of most llamas is 5/10
 - 3 older lactating females score 4/10

Farm S

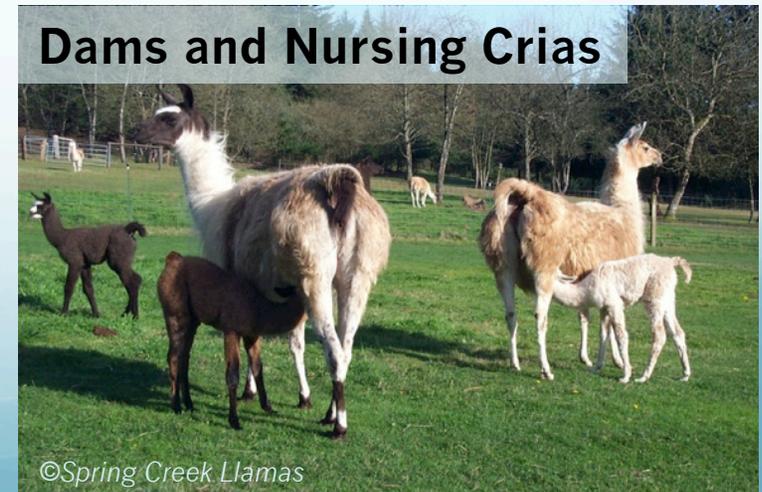
- Body condition scores vary
 - Most crias and gestating/lactating females are 5 or 6/10
 - Males and non-breeding llamas score an average of 7/10
 - 2 older llamas are 3/10
- 3 llamas have regular issues with zinc-responsive dermatitis
- Toxic levels of selenium suspected in deaths of 2 crias in past 5 years





Social Environment: Farm N

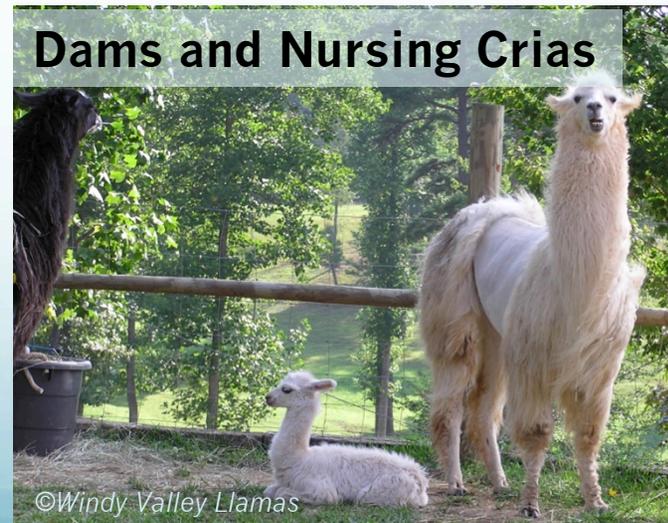
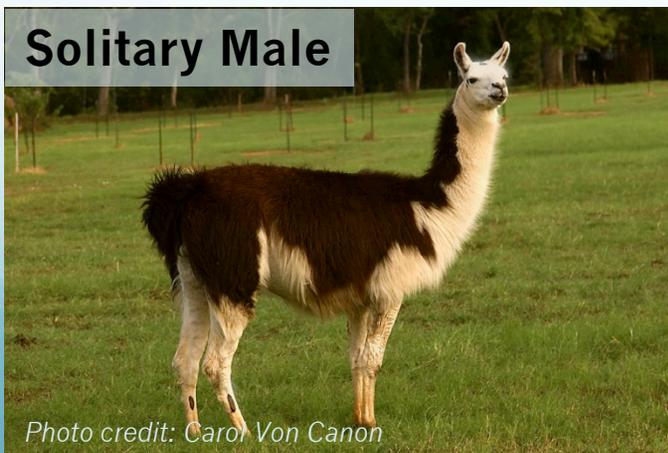
- 4 breeding males managed together most of the year
 - Separated during breeding season if they become aggressive
- Females and nursing cria managed in 2 groups based on social dynamics
 - Crias weaned at 6 months of age by removing dams to another pasture
- Yearlings, open females and geldings managed together





Social Environment: Farm S

- Males managed individually most of year with rotating pasture access
- Females with nursing crias managed as one group
 - Crias weaned at 4 mo by holding them in barn for 1 wk





Social Behavior

Farm N

- Males mostly engage in displays and short-lived fights
 - Separated if fights persist or injuries observed
- Females grouped to minimize agonistic interactions
 - Many females within a group are related in some way
- Crias vocalize and pace for ~24 h after weaning
 - Play behaviors evident 48 h after weaning

Farm S

- One male habitually escapes pasture, fights with other males, and tries to breed females
 - After one fight, vet called to stitch up gash and treat lameness
- Females show marked preferences and dislikes for some group members
 - Subdivide themselves into 3 bands
- Crias vocalize, pace and try to escape barn for 48-72 h after weaning
 - Play behaviors evident 1 wk after weaning



Observation & Handling

Farm N

Farm S

- Llamas observed 3x/day for health issues, signs of distress or abnormal behavior
- Crias weighed weekly. Adults weighed monthly and before being vaccinated or dewormed
- Each llama handled weekly at a minimum for training and husbandry purposes

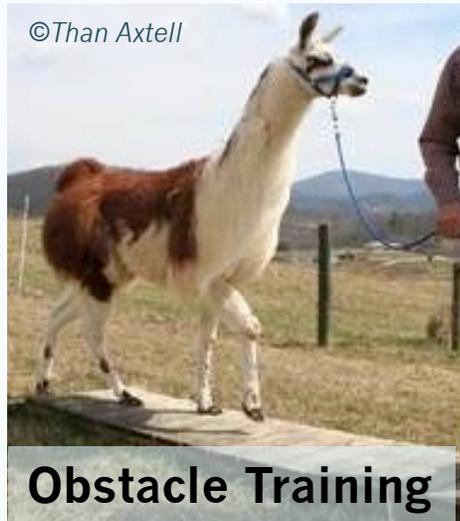


- Llamas checked in evenings when owners come home from work
- Crias weighed monthly. Farm does not have a scale for adult llamas
- Llamas handled as needed for husbandry/vet care or for showing and preparation

Training: Farm N

- Llamas trained using positive reinforcement
 - Carrots & apples, scratching neck = rewards
 - Llamas approach handler to work
- Llamas habituated to restraint chute, trailer, teeth checks, foot handling, and trekking gear
- Llamas trained for trekking
 - Start with halter training and obstacle courses
 - Loaded packs starting 3.5 y

Halter Training



Trailer Habituation



Pack Training





Training: Farm S

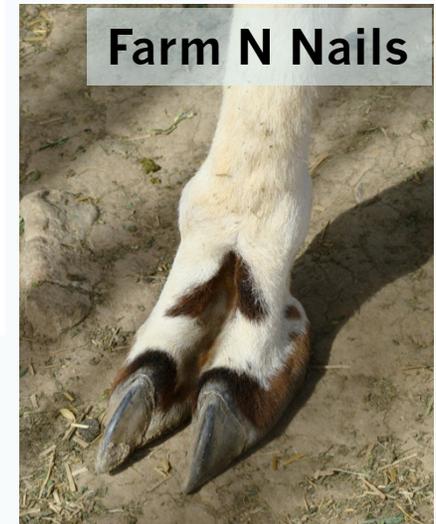
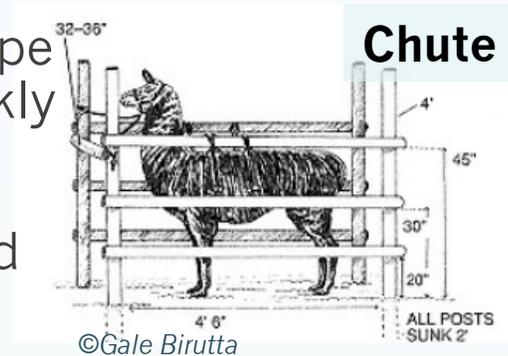
- Adult llamas halter trained using various techniques
 - Most cria are halter broken before being sold
 - Most llamas must be pursued and caught for training
- Show llamas are trained to lead and stand for judges





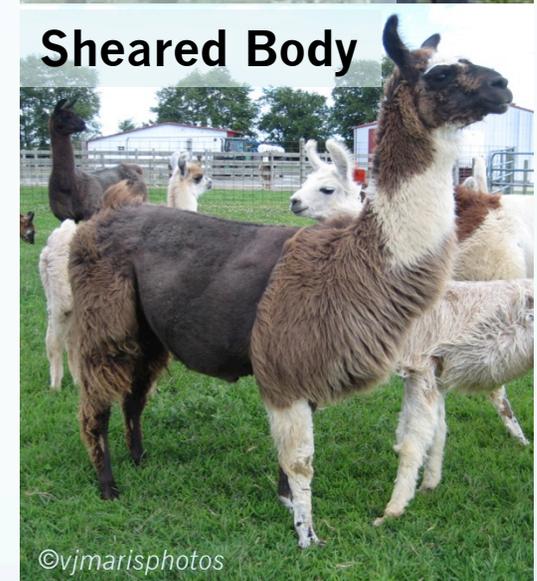
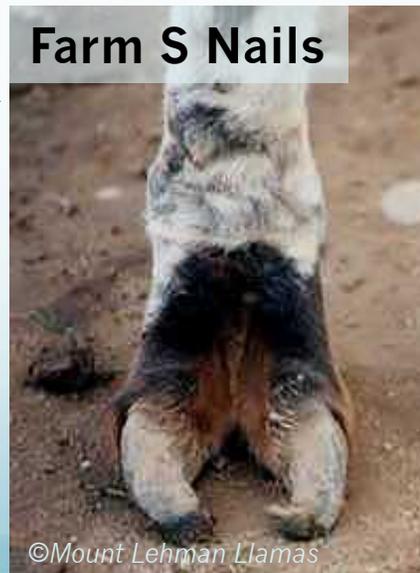
Husbandry: Farm N

- Llamas stand quietly on lead rope for daily health checks and weekly grooming
- Restraint chute used for nail and tooth trimming, injections, and deworming
 - Llamas enter willingly for treats
- Llamas have nails trimmed as needed based on daily checks
 - 3 trekking llamas' nails are too short
- All males' teeth trimmed at ~3 y
- Llamas approach or ignore humans entering pastures and barns



Husbandry: Farm S

- Sheared and nail trimmed each summer
 - Difficult llamas are not nail trimmed regularly
 - Some llamas have overgrown and twisted nails
- Llamas restrained by husband and stockperson
 - Use ropes and bodies to block llamas into corner of pen
 - Llamas vocalize, try to escape or kush
- Most llamas avoid or ignore humans
 - 2 males regularly charge people in their pastures





Parasite Control

Farm N

- Manure removed daily from barns, near sheds, and pasture areas close to barns, sheds and gates. Weekly removal of manure from pastures
- Fecal exams every 2 months
 - Collected directly from individual llamas
- Targeted selective treatment strategy
 - Based on regular consultation with veterinarian
 - Animals with positive fecal results treated based on problem
 - No animal losses due to parasites

Farm S

- Manure removed within and near barns and near pasture gates every weekend
- Fecal exams each spring (at urging of vet)
 - Collected from 2-3 common areas for each group of llamas
- Routine treatment regimen
 - Ivermectin and Fenbendazole (Panacur) every 3-4 months
 - 2 yearlings lost to meningeal worm in last 5 years



Vaccinations

Farm N

- Three-way clostridial vaccine (CDT) against *Clostridium perfringens* type C and D and *Clostridium tetani* (tetanus)
 - Vaccinate crias at when 2-3 d old and again at 2-3 wk old
 - Vaccinate females 1 mo before delivery
 - Vaccinate other llamas annually

Farm S

- Three-way clostridial vaccine (CDT) against *Clostridium perfringens* type C and D and *Clostridium tetani* (tetanus)
 - Vaccinate crias at 2d old and again at 1 mo, 2 mo, 6 mo and 1 year
 - Vaccinate females 2 d after delivery
 - Vaccinate other llamas annually
- Vaccinate against West Nile virus, leptospirosis and rabies



Health Outcomes

Farm N

Farm S

- Heat stress rarely observed, but 2 deaths last year
 - 1 newborn cria during heat wave in May
 - 1 older gelding at end of trek in August
- Crias monitored closely for signs of hypothermia
 - Blanketed when temperatures below 4°C (40°F)
- 3 cases of tick paralysis in last 5 years
 - 1 yearling died, 2 adults recovered

- Mild heat stress observed occasionally in gestating llamas
 - Llamas cooled by soaking with hose, electrolytes provided
- 4 cria deaths due to Juvenile Llama Immunodeficiency Syndrome since farm started breeding in 2005
- Several cases of choke last year in grain-fed llamas
 - 1 llama died, 2 recovered from minor incidents
 - 1 llama diagnosed with megaesophagus, died later