Successful kidding



SUSAN SCHOENIAN (Shāy nē ŭn)
Sheep & Goat Specialist
University of Maryland Extension
sschoen@umd.edu ♦ sheepandgoat.com ♦ wormx.info

Today’s topics

- Breeding
- Nutrition
- Vaccinations
- Periparturient egg rise
- Normal kidding
- Kidding problems
- Newborn kid problems
- Colostrum
- Artificially rearing kids

Successful kidding starts at breeding

Does

- Healthy
- Sound
- Moderate body condition
- Productive

Bucks

- Healthy
- Sound
- Fertile
- Moderate body condition
- Productive
- Genetically-superior*

Feeding the pregnant and lactating doe

- Nutrient requirements are affected by stage and level of production.
- Energy (TDN) requirements increase throughout pregnancy and are highest during late gestation.
- Protein (CP) requirements increase throughout pregnancy and are highest during early lactation.
- Calcium (Ca) and phosphorus (P) requirements increase during pregnancy and are highest during lactation.

Nutrition basics

DRY MATTER (DM)

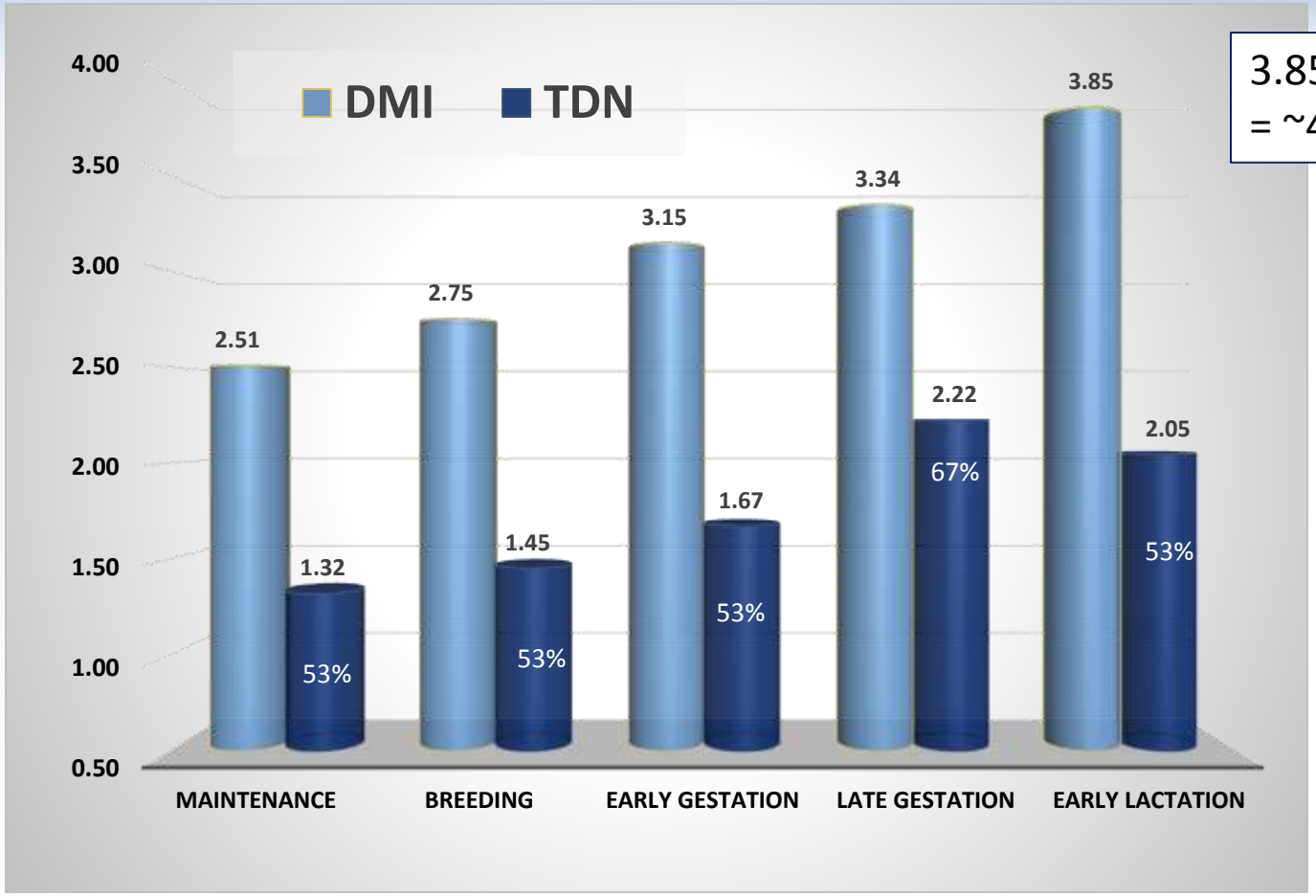
- Livestock nutrient requirements are based on dry matter.
- Nutrients are contained in the dry matter portion of the feed.
- All feeds contain water; dry matter is what's left after the water is removed.
- Feedstuffs vary in dry matter content, from < 10 to > 90 percent.
- Most common feedstuffs (hays and grain) are 88-90 percent DM.
- Feedstuffs must be compared on a dry matter (and weight) basis.

- An animal's nutrient requirements are based on its size (weight), along with other factors.
- Animals require certain amounts (lb, kg, oz, g, or mcal) of nutrients, not percentages.
- Percentage requirements are based on assumed dry matter intakes, e.g. 3 lbs. of hay + lb. of grain
- Percentages are used to describe the nutrient density of a feed and are a tool for balancing rations.

WEIGHT

Energy requirements of does

Energy requirements (TDN) of a 132-lb. non-dairy doe (twins).

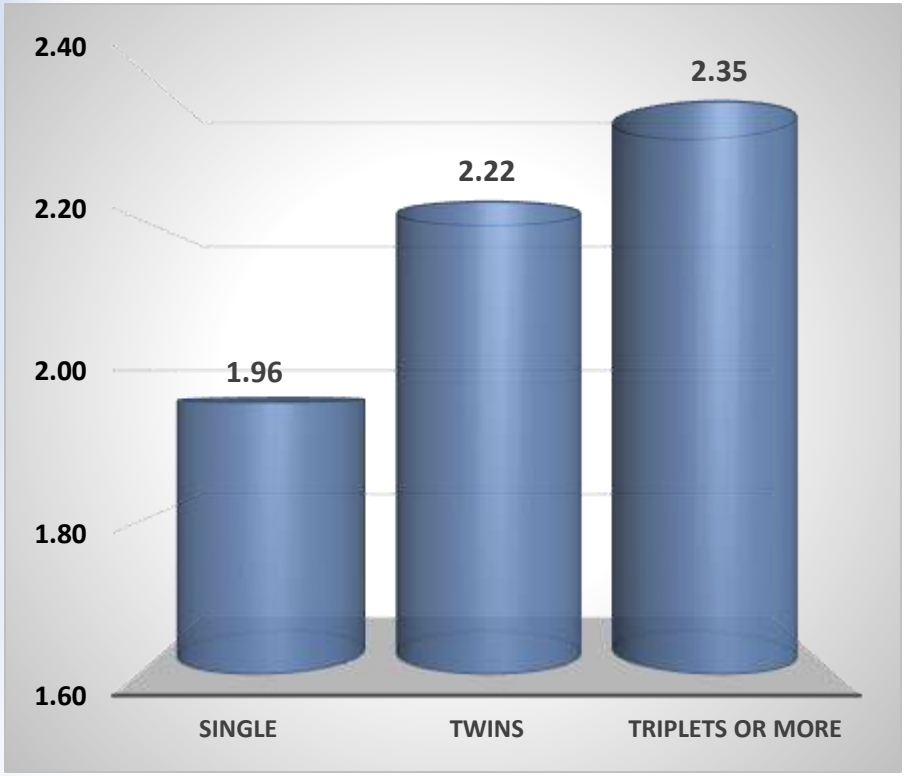


3.85 lbs. DM
= ~4.25 lbs. as-fed

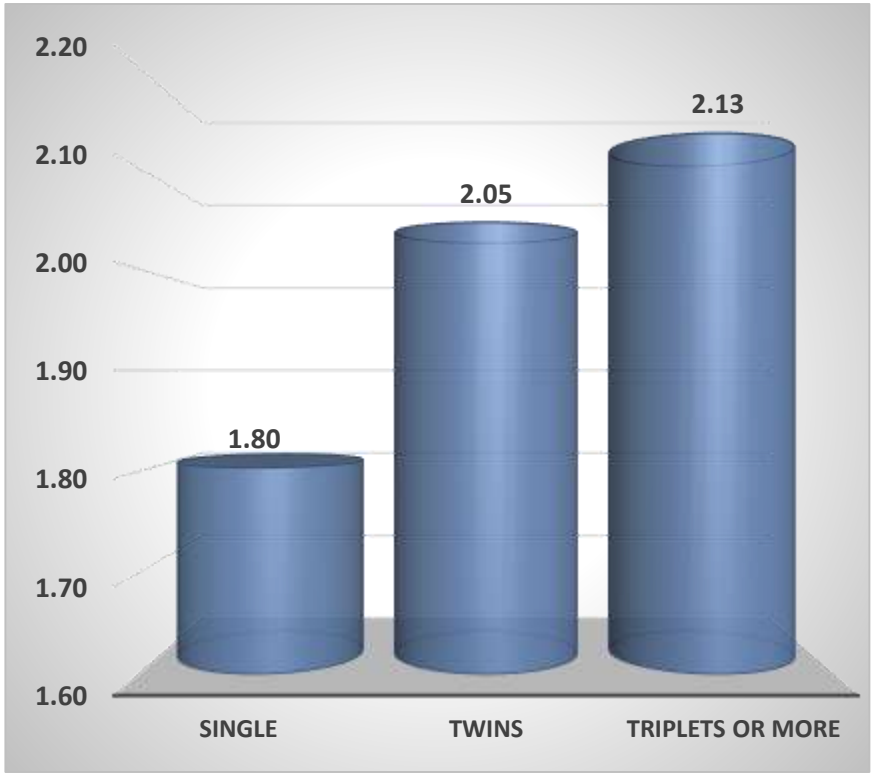
Percentage requirements are based on an assumed dry matter intake (DMI); if less dry matter is consumed, a higher energy (%) diet would be required.

The number of offspring affects nutrient requirements of pregnant does.

Late gestation (6-8 weeks)

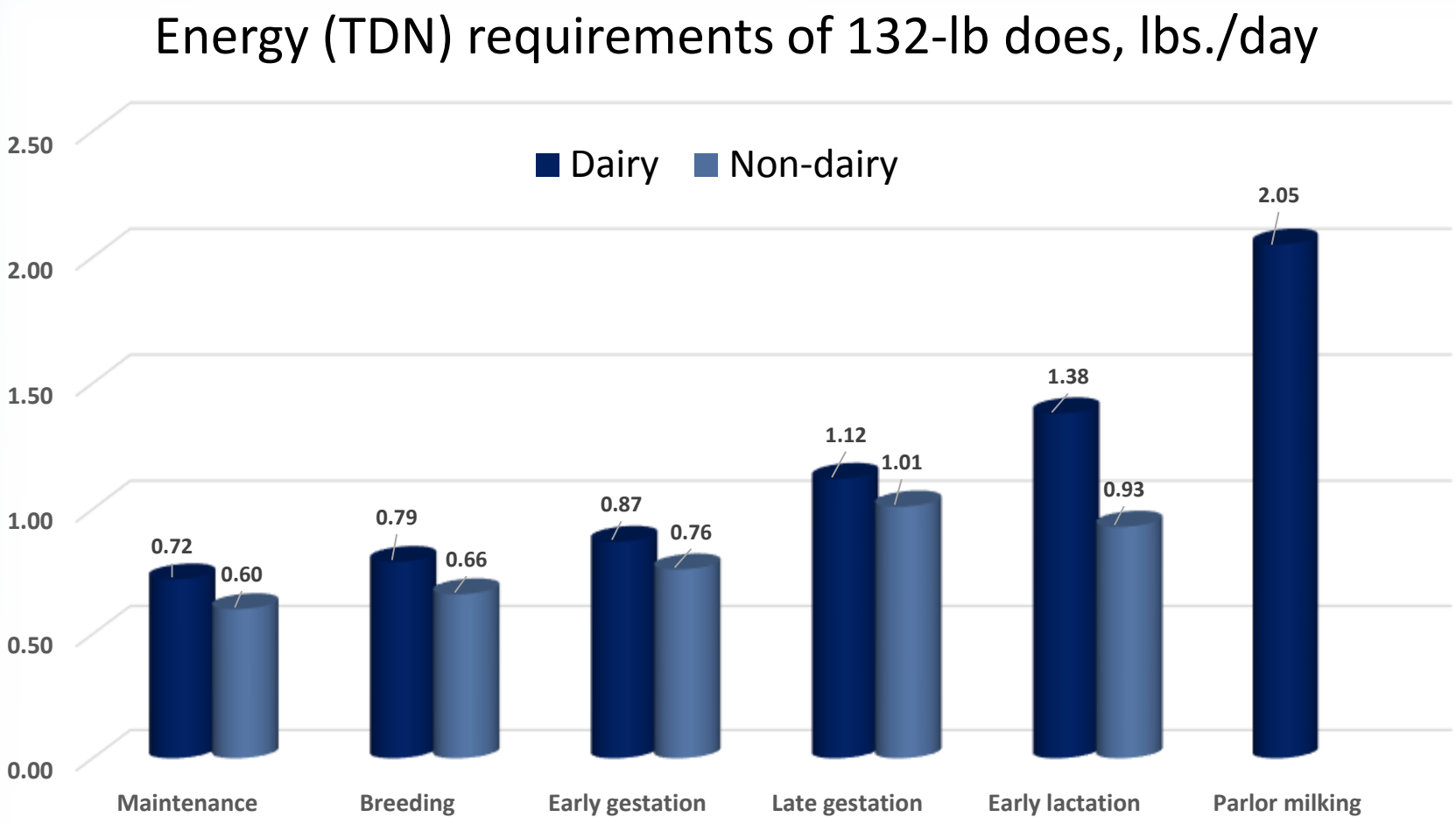


Early lactation (6 -8 weeks)



Energy (TDN) requirements of a 132 lb. non-dairy doe, lbs./day

Dairy does have higher nutritional requirements than non-dairy does.



Meeting energy requirements of 132-lb. non-dairy doe in late gestation

Requirements: 2.22 lbs. TDN per day

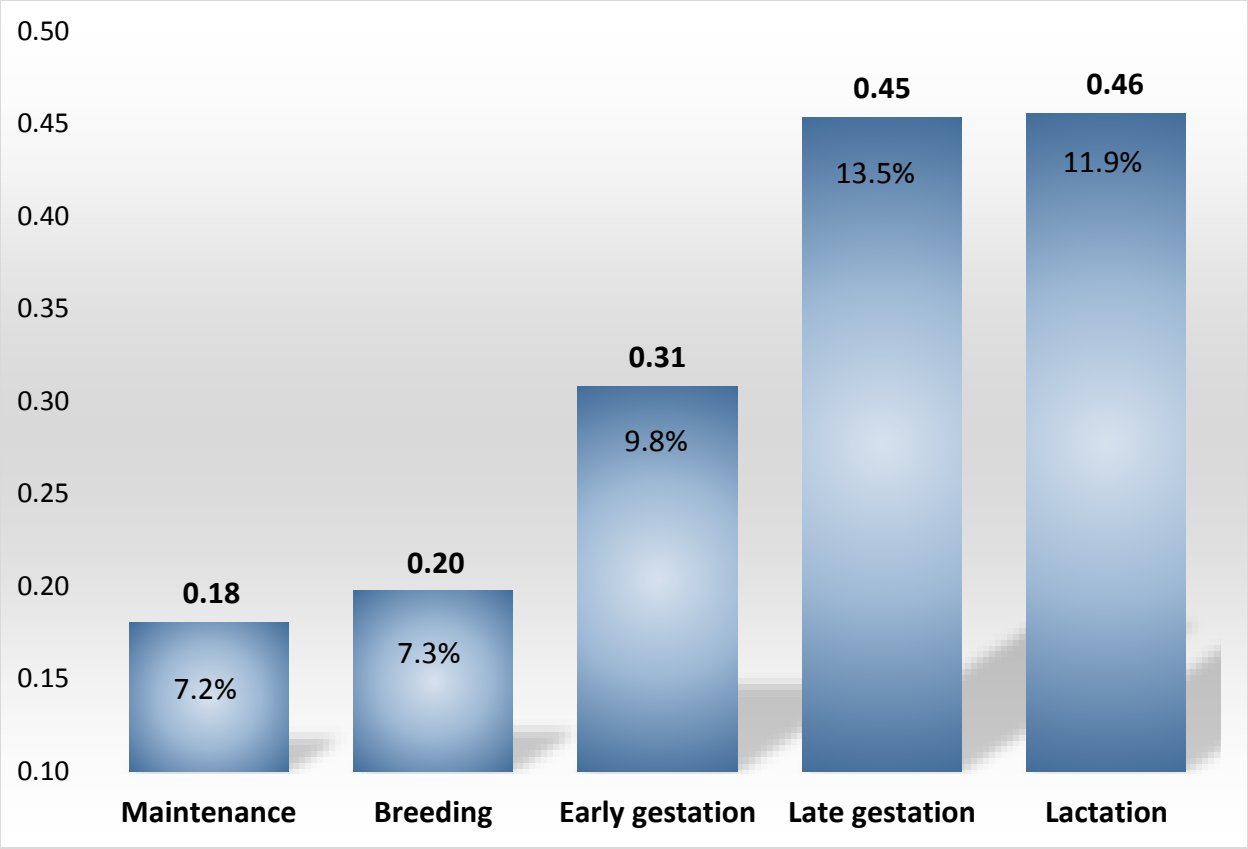
Orchardgrass hay	Barley grain
88% DM	89% DM
59% TDN	84% TDN

Feed 3 lbs. of orchardgrass hay per day
3.0 x 0.88 = 2.64 lbs. DM
2.64 x 0.59 = 1.58 lbs. TDN
2.22 - 1.58 = 0.64 lbs. difference

Feed barley to meet TDN requirements
0.64 ÷ 0.84 = 0.73 lbs. barley DM
0.73 ÷ 0.89 = 0.82 lbs. barley as-fed

Protein requirements of does

Protein requirements (CP) of a 132-lb. non-dairy doe (twins).



Percentage requirements are based on an assumed dry matter intake; if less dry matter is consumed, a higher protein (%) diet would be required.

Meeting protein requirements of 132-lb. non-dairy doe in late gestation

Requirements: 0.45 lbs. CP per day

Orchardgrass hay (3 lbs)	Barley grain (0.8 lbs)
88% DM	89% DM
10% CP	12% CP

Feed 3 lbs. of orchardgrass hay per day
3.0 ÷ 0.88 = 2.64 lbs. DM
2.64 x 0.10 = 0.264 lbs. CP
0.45 0.26 = 0.19 lb. difference

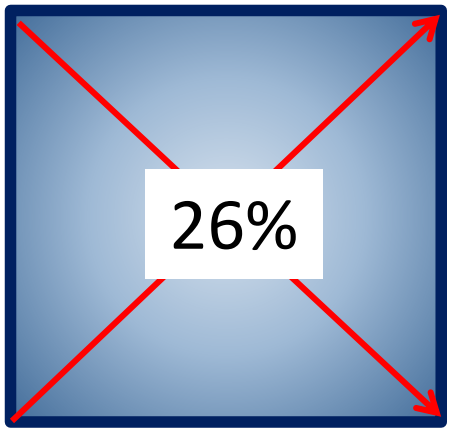
Concentrate portion of ration needs to contain 26% CP
0.19 lb. DM ÷ 0.73 lb. DM

Pearson Square: a simple way to balance a ration

for one nutrient, with two ingredients

Barley 12

Protein pellet 38



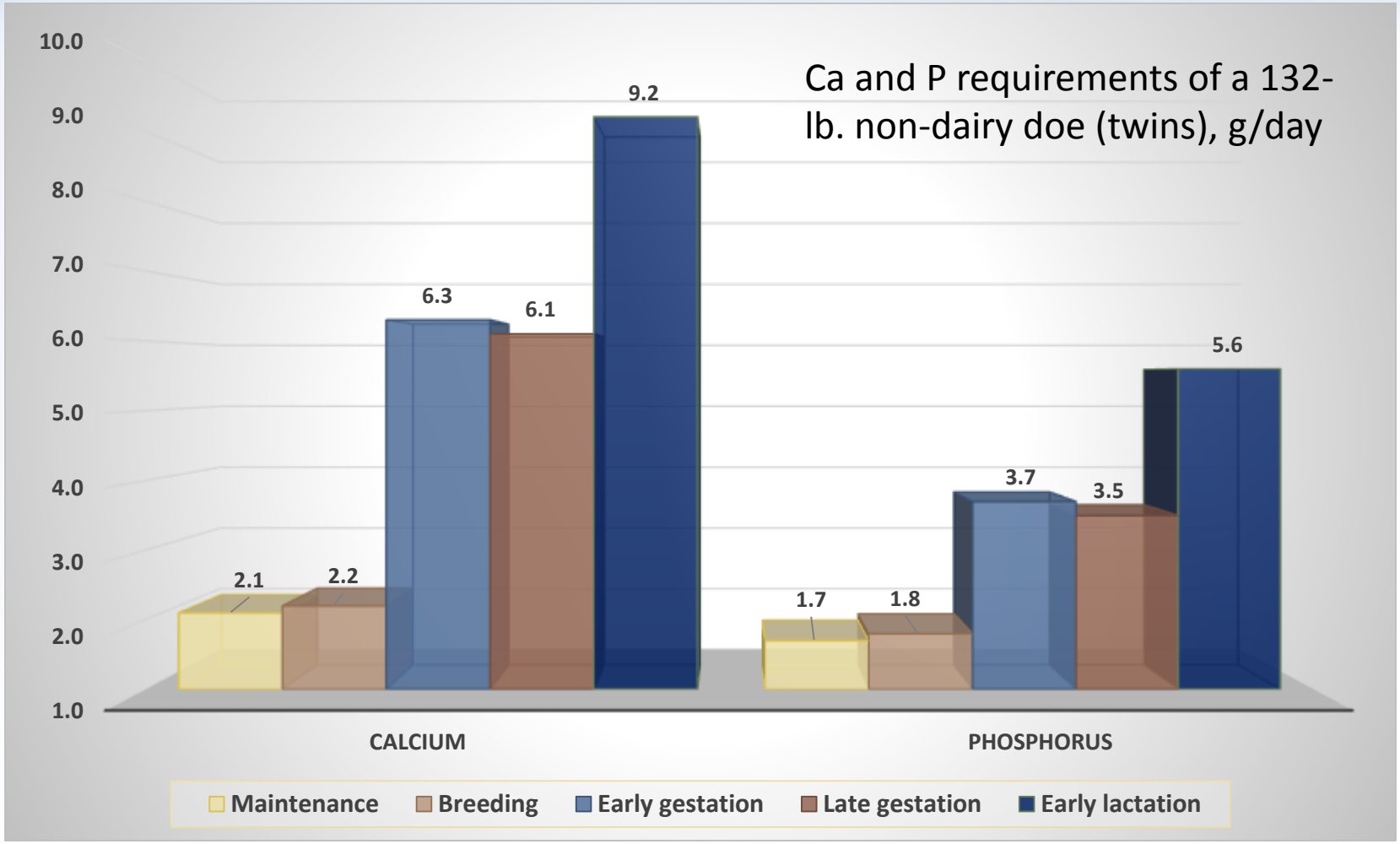
12 ÷ 26 = 46% Barley

14 ÷ 26 = 54% pellet

26

~ 50:50 mix of barley to pellets

Calcium and phosphorus requirements of pregnant and lactating does



Two alternatives for feeding goats

✓ Feed balanced rations

- Balance rations by hand using simple math.
- Evaluate rations using a spreadsheet.
- Balance rations using Langston University's Online Nutrient Calculator.

- Weigh animals
- Weigh feed
- Test forages

Follow someone else's recommendations

Example: North Carolina State University

- Free choice trace minerals, w/Se
- Free choice forage
  - When forage or browse is limited or of low quality (< 10% CP) feed 1 lb. of a 16% CP diet to pregnant and lactating does and developing bucks.

- Use body condition scoring to monitor feeding program.

http://www.sheepandgoat.com/articles/rationbalancing.html

Poor nutrition during late gestation can have many negative consequences.

Underfeeding

- Inadequate energy intake can cause pregnancy toxemia (ketosis), birth of small/weak kids, higher kid mortality, and poor colostrum and milk production.
- Not enough calcium can cause milk fever in pregnant doe.
- Inadequate selenium in diet can cause white muscle disease in kids and other reproductive problems.

- Overfeeding can result in dystocia (difficult births), due to oversized fetuses and increased abdominal fat in does.
- Too much calcium can cause milk fever in lactating doe.
- Fat does are also more prone to pregnancy toxemia.
- Fat, lazy does
- Extra feed costs extra money!

Overfeeding

Metabolic problems of pregnant and lactating does

- Caused by insufficient consumption of energy during late gestation.
- Old, fat does, carrying multiple fetuses are most prone.
- Symptoms include off-feed, depression, lethargy, poor coordination, and recumbency.
- Diagnosis based on lab tests and/or response to treatment.
- Treat with glucose orally, subcutaneously, or intravenously, depending upon severity of symptoms.
- Can induce labor or perform c-section in more advanced cases.

Pregnancy toxemia (ketosis)
Low blood glucose

- Can be caused by not enough (gestational) or too much (lactational) calcium being consumed during late gestation.
- Most common in heavy milking does and does carrying multiple fetuses.
- Similar symptoms as pregnancy toxemia; often treated simultaneously.
- Diagnosed with lab tests and/or response to treatment.
- Treat with calcium orally, subcutaneously, or intravenously (slow), depending upon severity of symptoms.

Milk fever (hypocalcemia)
Low blood calcium

Consider feeding a coccidiostat during late gestation

to help prevent coccidiosis in new kid crop

Coccidiostats (Rx)

Feed/mineral

- Bovatec® (lasalocid)
- Rumensin© (monensin) ☠
- Deccox® (decoquinate)

Water

- Corid
- Sulfa drugs

- Do not treat coccidiosis; reduces shedding of oocytes into environment.
- Must be fed several weeks ahead of risk period.
- Reduces exposure of kids to coccidia organism.

- Coccidiostats (Rumensin® and Deccox®) may aid in the control of abortions caused by toxoplasmosis.

Clostridial vaccinations

- It is generally recommended that goats be vaccinated for certain clostridial diseases, especially enterotoxemia (overeating disease) and tetanus.

- There are several combination vaccines to choose from.

  1. CDT (most commonly used) provides protection against *clostridium perfringins* types C and D and tetanus.

  2. Covexin-8 provides protection against 8 clostridial bacteria, including CDT, black leg, and malignant edema.

Toxoid vs. Antitoxin

- Toxoids provide long term protection (immunity); however, immunity is not immediate and a series of shots is usually required.
- Toxoids are used to prevent disease.

- Antitoxins provide immediate short-term immunity.
- Antitoxins are used to prevent or treat disease.

Clostridial vaccinations: adults

- Vaccinate does during late pregnancy in order to transfer immunity to newborn kids via colostrum (first milk).
- If doe has never been vaccinated or vaccination status is unknown, give two vaccinations during late pregnancy, 3-4 weeks apart.
- Vaccinate bucks and wethers annually.
- Vaccines may not be as effective in goats as sheep; some producers booster every six months.

Clostridial vaccinations: kids

DAM VACCINATED
(and adequate colostrum consumption)

- Kids will acquire temporary, passive immunity when they consume their dam's colostrum.
- Vaccinate at approximately 6-8 weeks of age, when passive immunity wanes.
- Repeat in 3-4 weeks.

- Vaccinate feeder goats before putting them on feed.
- Make sure club goats have been vaccinated twice for CDT.

- Vaccinate at approximately 3-4 weeks of age.
- Earlier vaccinations may not be effective.
- Repeat in 3-4 weeks

- Can give antitoxins in event of disease outbreak or high risk.
- Can give tetanus antitoxin at the time of disbudding and/or castration.

DAM NOT VACCINATED
(or inadequate colostrum consumption)

Other vaccinations

What else can you (should you) vaccinate goats for?

- Abortion (ELDU, Rx)
  Pre-breeding
- Caseous lymphadenitis (goat, ~~sheep~~)
- Foot rot (ELDU)
  (hard to find)
- Pneumonia
  1) *Pasteurella*
  2) Nasalgen
- Sore mouth (orf)
- Rabies (ELDU, Rx)

Sore mouth vaccination

Who?

- Kids in persistently infected herds
- Open herds that show a lot.

- Vaccinating a clean herd will introduce the virus to the farm.

- Can vaccinate does during late pregnancy.
- Kids shortly after birth or weaning
- Show goats at least 6 weeks before first show

When?

How?

- Scratch skin inside of ear, on under-side of tail, or on inside of thigh or flank (in non-lactating does).
- Wear gloves!
- 21-d withdrawal

To vaccinate or not to vaccinate

WHY?

- Manage disease risk.
- Prevent and control disease.
- Insurance against disease outbreak.
- Disease risk is high.
- Cost effective.
- Increase value of animals.
- Required by law (e.g. rabies).

WHY NOT?

- Disease risk is low.
- Not cost effective.
- Vaccine not effective.
- Too many side effects.
- No approved vaccine
- Withdrawal period too long
- It will introduce the disease to your farm, e.g. soremouth
- You’re not going to do it right.

The periparturient egg rise (PPER)

- Does suffer a temporary loss of naturally-acquired immunity to parasites at the time of parturition.
- May start 2-4 weeks before kidding and last for up 6-8 weeks after; varies by breed, individual, and season.
- When kidding occurs in the spring, the eggs deposited during the PPER are largely responsible for the infections that kids acquire during summer grazing.

- The PPER is not as well documented in goats as sheep and is not well described for different kidding seasons.

Options for dealing with PPER

- Deworm does prior to breeding or after first killing frost to kill hypobiotic larvae.
- Deworm does prior to kidding (especially with late winter-spring kidding), with dewormer that is effective against hypobiotic larvae.
- Targeted selective treatment: only deworm those that require or would benefit from treatment, based on FAMACHA© score and 5 Point ✓©.
- Increase protein, especially by-pass protein, in late gestation ration.

- Keep does and kids indoors during risk period (late gestation-early lactation).

Other late gestation recommendations

- Remove bucks after desired breeding period.
- Feed and manage pregnant doelings separate from mature does until second breeding.
- Maintain stable groups; do not mix new animals together during late gestation.
- Provide plenty of feeder space.
- No abrupt changes in feed; gradually increase grain.
- Encourage exercise.
- Minimize stress.

Kidding time

- Most does kid on their own (and take care of their kids) without the need for assistance.

- If you did your job (management and nutrition), they can do their job.

Normal kidding

- ~ 5 month gestation period.
- Kidding usually occurs within 60 minutes of water bag breaking.
- Twins/triplets usually born within half hour of each other.
- Normal presentation is nose between two front feet (or backwards).
- Kids up in 15 minutes looking for teat.
- Afterbirth passed within hour or so of last birth.

Management of healthy newborn kids

Soon after birth

- Put in small pen (jug) for bonding and observation.
  - Indoor kidding
  - First-time moms
  - Multiple births
  - Mismothering
  - Crossfostering

- Clip - clip long navel cords
- Dip - disinfect navel cords
- Strip - remove wax plug from teat and check milk supply
- Sip - make sure kids nurse.

First day or two

- Make sure kids are getting enough to eat
  - Observe behavior of doe and kids
  - Check bellies for fullness
  - Check milk supply/udder health
- Record birthing event
- Identify kids, e.g. ear tags
- Weigh kids (for records)
- Bo-se injection, if advised by veterinarian (Rx).
- CDT vaccination may not be effective.

Care of doe after normal kidding

- Give plenty of water; some producers give warm water.
- Deworm, if you haven't done anything else to counter periparturient egg rise.
- Don't overfeed first few days after kidding; gradually increase ration.

Kidding-related problems

Before

- Pregnancy toxemia
- Milk fever
- Vaginal prolapse
- Dystocia (difficult birth)
  - Abortion
  - Malpresentation
    - Leg(s) back
    - Head back
    - Breech
    - Simultaneous births
  - Disproportionate size
  - Ringwomb
    (failure of cervix to dilate)

- Injury or illness due to traumatic birth or disease
- Milk fever
- Uterine prolapse
- Retained placenta
- No milk
- Mastitis

After

Assisting with difficult births

- Check doe if she has not kidded within 60 minutes of water breaking.
- Use gloves or OB sleeves and plenty of lubricant when entering a doe.
- If no progress is made after 30 minutes of assistance, seek competent help from a veterinarian or more experienced producer.
- After assisting with a difficult birth, be sure to check for additional fetuses.
- After assisting with a difficult birth, give long-acting antibiotic to doe.

Colostrum: first milk

Colostrum is the best protection against so many things the kid may encounter in its young life.

Importance

- Newborn kids should consume approximately 10% of their body weight in colostrum during their first 18 hours (8 lb. kid = 12.8 oz).
  - Colostrum only produced by doe for ~24 hours.
  - Kid cannot absorb antibodies after first 24-36 hours.
  - Important source of nutrients for newborn.

Options

- From dam*
- From another doe in herd*
- From another herd
- Cow colostrum
- Colostrum substitute (IgG) (e.g. Land O'Lakes)

- Colostrum supplement
- Homemade colostrum
- Milk replacer

Complications with newborn kids

Major causes of death

1. Starvation
   - Difficult birth (dystocia)
   - Inadequate intake of colostrum
   - Competition from siblings
   - Rejection by dam
   - Inadequate milk production
   - Udder/teat problems
   - Disease or illness

2. Hypothermia
   (Body temperature < 100°F)
   - Exposure
   - Poor mothering
   - Starvation

- Bacterial scours (diarrhea)
  - *E. coli*
  - Salmenella
  - *Clostridium perfringins* type C
- Pneumonia
  - Pasteurella
  - Mycoplasma

Other causes

Artificially rearing kids

Milk options

- Goat milk
- Goat milk replacer
- Calf milk replacer
- Cow milk
- Waste milk

Feeding options

- Bottle-feeding
- Self-feed teat feeders (lamb bar, bucket)
- Open vessel

Tips for artificially rearing kids

- Opinions vary as to which kid(s) should be removed for artificial
- rearing.
- Feed in a clean, dry pen.
- Follow mixing directions on bag.
- If bottle feeding, follow feeding directions on bag.
- Feed cold milk to prevent overeating, scours, and abomasal bloat.
- Offer palatable feed (e.g. soybean meal, cracked corn) by 2 weeks of age.
- Opinions differ as to whether hay should be fed to artificially reared kids.
- Multiple vaccinations for CDT
- Wean early, 6-8 weeks of age, so long as kids are eating dry feed and weigh at least 20 lbs. (2.5 x birth weight).

Thank you for your attention. Questions? Comments?

SUSAN SCHOENIAN
Sheep & Goat Specialist
sschoen@umd.edu
sheepandgoat.com ◆ wormx.info