



Goat Newsletter

Cooperative Extension Program
Langston University

The Newsletter of the E (Kika) de la Garza American Institute for Goat Research

Spring 2017

From the Director's Desk



As usual, this time of year is very busy as we prepare for our annual Goat Field Day and conduct research projects.

This year, the theme for our Goat Field Day is *Selection: from Eyeball to Genomics* and you can read more about it on page 3 of this newsletter. This year our featured speakers will be Dr. **Ken Andries**, Dr. **Brian Sayre**, and Ms. **Lisa Shephard**. Dr. **Andries** is from Kentucky State University, Dr. **Sayre** is from Virginia Sate University, and Ms. **Shephard** is from the American Dairy Goat Association.

Genetic improvement is key to a productive and competitive goat enterprise. We

have come a long way from the days of Robert Blakewell, a British agriculturalist born in 1725. Blakewell was a pioneer in selective animal breeding and is well noted for his development of the New Leicester sheep breed and the improvement in the Lincoln Longwool breed. Some of the principles that Blakewell intuited would not be formalized until Gregor Mendel experimented with the garden pea and discovered the basic unit of heredity, the gene, nearly one hundred years later. Nearly another century would pass before modern animal breeding methodology arose from the works of Jay Lush and other geneticists. Lush's and succeeding geneticists' works laid the groundwork for the biometrical approach to animal breeding, that is, the use of statistical methods to derive a numeric breeding value and not to rely upon the animal's appearance. The new world of animal breeding involves genomics, which is an exciting advancement. An aspect of genomics involves sequencing part or all of the chromosomes for the cytosine, guanine, adenine, and thymine nucleobases. That informa-

tion is then associated with the biometric data to yield an even better estimate of breeding value.

In addition to our annual Goat Field Day, we will be hosting a cheesemaking workshop on the day before the Goat Field Day. Dr. **Steve Zeng**, our Dairy Foods Technologist, will be coordinating the cheesemaking workshop and Dr. **Zeng** will be our instructor for this workshop. This is a limited-attendance workshop and persons interested in attending should contact Dr. **Zeng** (405-466-6145 or szeng@langston.edu).

We are busy with research and extension activities, other than Goat Field Day for the latter. We are always looking to tools that will make our research easier and more efficient. One of the innovations that I hope will be fruitful is a state data logger on Dr. **Liu**'s experiment. I mentioned in the last newsletter that Dr. **Haiping Liu** from the College of Animal Science and Veterinary Science at Shenyang Agricultural University of China, is joining us for a year-long sabbatical, and working with Dr. **Art Goetsch**. Dr. **Liu** is



Goat Newsletter is published quarterly by the Cooperative Extension Service of the E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, Oklahoma.

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studying feed intake and feeding behavior in growing Alpine doelings. This experiment is taking place in our Lactation Barn, which is equipped with Calan feeders. We have used the Calan feeders for many years and, briefly, each doeling wears a plastic-chain collar with an electronic “key” encased in hard plastic. The key unlocks the door to only one Calan feeder in the pen, thus enabling the doeling to eat out of her individual feeder in a group pen. Each morning, yesterday’s feed remaining in the Calan feeder is weighed. Fresh feed is weighed and placed into the Calan feeder. The difference in weights between the fresh feed place in the Calan feeder one morning and the remaining feed the next morning is the amount consumed. Because only one goat is capable of opening the Calan door and eating, it is possible to calculate the feed intake.

You may recall from reports of our previous Buck Performance Test at our South Barn, we used Calan feeders initially and then we added a different feeding system called FIRE (Feed Intake Recording Equipment). For the FIRE system, there is only

one automated feeding unit per pen and bucks in the pen would take turns feeding. Feed intake was automatically recorded onto onboard memory with the use of a RFID eartag every time a buck enters into the FIRE system to eat. Both the Calan feeder and the FIRE system uses RFID technology but feed intake is recorded manually for the Calan feeder and automatically for the FIRE system. Not only are we able to measure feed intake with FIRE system but we are able to also monitor number of visits to the system and the duration of those visits, which has been a valuable research tool. I wish that we would have discovered technology that would allow us to automatically monitor feed intake for the Calan feeders but, alas, that is not the case. We are, however, experimenting with technology that will allow us to determine the number of visits and the duration of those visits. Drs. **Ryszard Puchala** and **Terry Gipson**, who are assisting Drs. **Liu** and **Goetsch** on this experiment, have installed state loggers on each Calan feeder door. The state logger has an internal reed (magnetic) switch and we have installed magnets on the door frame and the state logger on the door. These state loggers monitor the open/closed state of the door every 10 seconds. I am excited to possibly have the same feeding behavior measures on our dairy that we have had on our meat goats for many years. Technology is a wonderful thing.

I hope to see you at the Goat Field Day.



Visual inspection is important but production a better measure of merit.

Selection: from Eyeball to Genomics

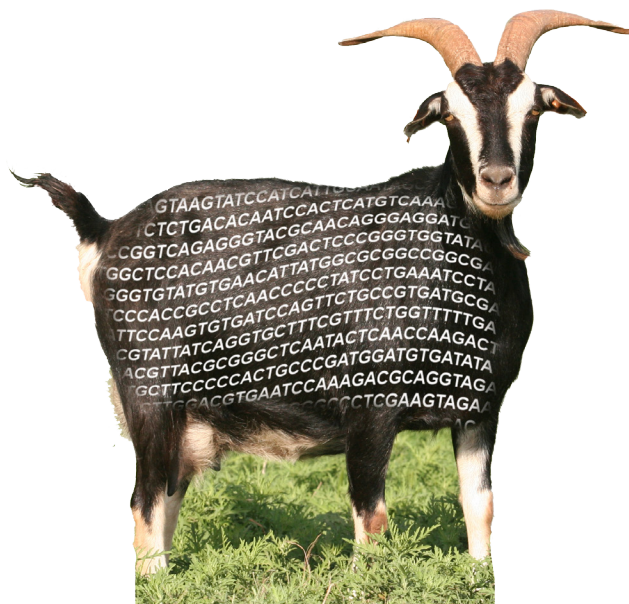
Goat Field Day 2017

Our annual Goat Field Day will be held on Saturday, April 29, 2017 at the Langston University Goat Farm with registration beginning at 8:00 a.m. This year's theme will be **Selection: from Eyeball to Genomics**.

Adult Activity (morning session): This year our featured speakers will be Dr. **Ken Andries**, Dr. **Brian Sayre**, and Ms. **Lisa Shepard**.

Ken Andries was raised on a livestock and crop farm in Louisiana. He did his graduate work at Louisiana and Kansas State Universities majoring in animal genetics. Dr. Andries has worked in extension since graduation from Kansas State University in 1996. He is currently an Animal Science Specialist and Assistant Professor at Kentucky State University where he is responsible for the small ruminant extension programming, goat production research, and teaching undergraduate classes. He is a member of the national eXtension Goat Community of Practice, the American Goat Federation, goat representative on the National Sheep Improvement Program board, and has conducted many workshops and programs on goat production since starting at KSU. His extension programs have focused on improved production, health, and genetics for a more sustainable goat industry. He started the Kentucky Goat Herd Improvement Program (KyGHIP), and the program is gaining acceptance by producers around the country as a way to improve animal performance.

Brian Sayre is a Professor in the Department of Biology at Virginia State University. Dr. Sayre's research program revolves around utilizing a systems genetics and genomics approach to identify candidate genes associated with production characteristics or diseases. Recent research is to identify genes in sheep and goats associated with resistance to internal parasite infections and humans for diabetes and obesity. Additionally, Dr. Sayre is a founding member of the International Goat Genome Consortium (IGGC), African Goat Improvement Network (AGIN) and ADAPTmap project. His research program has been involved in the development of the goat radiation hybrid (RH) panel, Illumina Goat 60K SNP panel and multiple sequencing projects for creation of a high quality reference genome sequence for the goat. Partnering with international collaborators for application of these tools to a goat, current applica-



tions include the ADAPTmap project to associate genotypes with GPS and environmental data, development of low-density SNP panels for selection in goat improvement projects in Africa, and partnering with the US goat industry for development of genomic selection tools. Dr. Sayre is a member of a national Critical Thinking Fellows Institute to promote implementation of critical thinking skills into the classroom. The research is focused on the development and identification of the non-cognitive aspects of student learning for improved outcomes in biology courses.

Lisa Shepard currently works for the American Dairy Goat Association as the Performance Programs Manager. This involves efforts with the DHI Production Testing, Linear Appraisal, Sire Development, DNA Typing, Artificial Insemination, and Type programs. Prior to this, she was employed in the laboratory genetics field for 30 years with her work evolving into the areas of quality assurance and regulatory affairs. Ms. Shepard is also a representative to the California Dairy Goat Advisory committee, on the Board of New Mexico's caprine DHIA, and on the local water commission. Lisa and her husband raise a small seedstock herd of Saanens in northern New Mexico. They keep it small so that they can enjoy their other interests in traveling and hiking.

Adult Activities (afternoon session): In the afternoon session, participants will break into small-

group workshops. There will be a total of eighteen workshops; however, participants will only have time to attend three.

The afternoon workshops include:

- *Dairy Goat Production Evaluations with Ms. Lisa Shephard. (1:30 p.m. ONLY)*
- *Dairy Goat Type Evaluations with Ms. Lisa Shephard. (2:30 p.m. ONLY)*
- *Combining Information for a Selection Index with Ms. Lisa Shephard. (3:30 p.m. ONLY)*
- *Getting Started Collecting and Using Data in Meat Goats with Dr. Ken Andries. (1:30 p.m. ONLY)*
- *Using Performance Ratios and EBVs for Selection in Meat Goats with Dr. Ken Andries. (2:30 p.m. ONLY)*
- *Value of Performance in your Herd: A Look at the Cost and Returns of Using Data in Selection with Dr. Ken Andries. (3:30 p.m. ONLY)*
- *Applied Animal Genomics with Dr. Brian Sayre.*
- *Visual Assessment of Dairy Goats from a Judge's Standpoint - basics of dairy goat conformation with speaker to be determined.*
- *Visual Assessment of Meat Goats from a Judge's Standpoint - basics of meat goat conformation with speaker to be determined.*
- *Basic Herd Health and Management – vaccinations, common disease diagnosis, hoof trimming, body condition scoring, FAMACHA scoring, etc. with Dr. Lionel Dawson and Mr. Jerry Hayes.*
- *The art of cheesemaking with Dr. Steve Zeng.*
- *Internal Parasite Control - sustainable internal parasite control program with Dr. Barry Whitworth.*
- *Nutrition for Health and Production - calculation of energy, protein and feed intake requirements with Dr. Steve Hart.*
- *DHI Training - supervisor/tester training for dairy goat producers including scale certification with Ms. Eva Vasquez.*
- *USDA/APHIS: Animal ID with Dr. Michael Pruitt and USDA/WS: Wildlife programs with Mr. Kevin Grant (1:30 p.m. and 2:30 p.m. ONLY)*
- *USDA/NRCS: Conservation programs with Ms. D'Ann Peterson and USDA/FSA: Farm loans with Mr. Phil Estes (1:30 p.m. and 3:30 p.m. ONLY)*
- *USDA/NASS: Animal inventories with Mr. Wil Hundl and Perry Livestock: Livestock auctions and marketing with Mr. Travis Perrin (2:30 p.m. and 2:30 p.m. ONLY)*
- *Fitting and Showing for Youth and Adults - tips and pointers on fitting and show ring etiquette with Ms. Janet and Messrs. Robbie and Coleman Sanders (this is a half-day afternoon workshop).*

Registration for the Goat Field Day is **FREE** but there is a \$10.00 per person charge for the optional lunch of barbecued goat and goat milk ice cream. You can bring your own lunch, if you desire. Regardless of lunch preferences, we ask everyone to pre-register.

Goat Field Day Program for Kids (Old Fashioned Fun): The Goat Field Day for Kids provides

the opportunity for kids to explore and enjoy “old-fashioned fun activities” while their parent(s) participate in the Goat Field Day Program. With all of today’s technological gizmos from the iPod to high-end smart phones and handheld games, most kids are no longer exposed to the old-fashioned games and activities that shaped the imaginations and innate creativity of their parents and grandparents. The Goat Field Day for Kids Program is intended to challenge and enhance cognitive and social skills. The development of intellectual and socialization practices have been determined as prerequisites for helping children to learn more complex concepts, thereby enhancing their personal capabilities.

Cheesemaking Workshop: Our ever-popular goat milk cheesemaking workshop has been scheduled on Friday April 28, 2017 (the day before our annual goat field day on April 29). Dr. Steve Zeng, Dairy Product Specialist at Langston University, will be the host/instructor for this workshop. He has instructed cheese workshops in many states as well as internationally. He has also judged cheeses for the World, the United States, the American Cheese Society and the American Dairy Goat Association cheese championships/contests in the last decade. He will share his rich background, personal experience and masterful skills in small-scale cheese manufacture, particularly goat milk cheeses. He plans to demonstrate basic principles and practical skills of making hard cheeses using our own Grade “A” goat milk. Milk quality, cheesemaking facility and federal safety requirements will also be discussed. This one-day hands-on workshop will be held in the pilot creamery at Langston University. There is a registration fee of \$60.00/person, which includes continental breakfast, break snacks, and lunch consisting of goat BBQ, sausages, goat milk ice cream and cheeses, etc. Only the first 15 registrants will be admitted. To reserve a seat, please send your check of \$60.00 to LU Ag Res. Sales (Attn: Dr. Steve Zeng, P.O. Box 1730, Langston, OK 73050).

For information regarding the cheesemaking workshop, please contact Dr. Steve Zeng at 405-466-6145 (O), 405-404-5171 (M), or szeng@langston.edu. For information regarding the 2017 Goat Field Day, please contact Dr. Terry Gipson at 405-466-6126 or tgipson@langston.edu.

You can register online for the 2017 Goat Field Day
<http://goats.langston.edu/2017-Goat-Field-Day>



GOAT FIELD DAY

Saturday, April 29, 2017

Registration at 8:00 a.m.

Langston University Goat Farm

Registration for the Goat Field Day is FREE

For more information call (405) 466-6126

or register on-line at

<http://goats.langston.edu/2017-Goat-Field-Day>

**Bring your own lunch or you can Pre-Register for Lunch
(BBQ goat, beans, potato salad,
refreshments, and goat ice cream; only \$10)**

INSTRUCTIONS FOR PRE-REGISTRATION (one form per person):

- 1.- Write your name, address, and telephone number below. Indicate if you will be registering for lunch.
- 2.- Select afternoon workshops from each time period to attend from the schedule on the back of this form.
- 3.- Write a check payable to "LANGSTON UNIVERSITY/RESEARCH SALES" for the amount, if registering for lunch.
- 4.- Mail this form and the check as soon as possible.

PRE-REGISTRATION FORM

NAME: _____ **TELEPHONE:** (____) _____

ADDRESS: _____

_____ **ZIP:** _____

Email: _____

(If you include an email address, you will receive verification of your registration.)

Registration for Goat Field Day is FREE; however, there is a fee for lunch. You may bring your own lunch.

Make checks payable to:
Langston University/Research Sales

Lunch Pre-Registration (Deadline April 21, 2017)

Please mail this form and check to:

Adults (\$10.00 each) _____

Children (12 and under) (\$5.00 each) _____

TOTAL _____

**Agric. Res. and Ext. Prog.
Langston University
P.O. Box 1730
Langston, OK 73050
ATTN: FIELD DAY**

2017 Goat Field Day Registration - Adult

Morning	9:00 - 11:45 a.m.	IMPORTANT!! Adult participants will attend a general morning session starting at 9:00 a.m. and will be able to attend three breakout sessions in the afternoon. Please choose your three afternoon workshops below.	
Afternoon Sessions	1:30 - 2:20 p.m.	Please Select a Workshop for this session and Enter the Workshop number here: _____	Afternoon Workshop Choices: The afternoon workshops include: <ol style="list-style-type: none"> 1. Dairy Goat Production Evaluations with Ms. Lisa Shephard. (1:30 p.m. ONLY) 2. Dairy Goat Type Evaluations with Ms. Lisa Shephard. (2:30 p.m. ONLY) 3. Combining Information for a Selection Index with Ms. Lisa Shephard. (3:30 p.m. ONLY) 4. Getting Started Collecting and Using Data in Meat Goats with Dr. Ken Andries. (1:30 p.m. ONLY) 5. Using Performance Ratios and EBVs for Selection in Meat Goats with Dr. Ken Andries. (2:30 p.m. ONLY) 6. Value of Performance in your Herd: A Look at the Cost and Returns of Using Data in Selection with Dr. Ken Andries. (3:30 p.m. ONLY) 7. Applied Animal Genomics with Dr. Brian Sayre. 8. Visual Assessment of Dairy Goats from a Judge's Standpoint - basics of dairy goat conformation with speaker to be determined. 9. Visual Assessment of Meat Goats from a Judge's Standpoint - basics of meat goat conformation with speaker to be determined. 10. Basic Herd Health and Management – vaccinations, common disease diagnosis, hoof trimming, body condition scoring, FAMACHA scoring, etc. with Dr. Lionel Dawson and Mr. Jerry Hayes. 11. The art of cheesemaking with Dr. Steve Zeng. 12. Internal Parasite Control - sustainable internal parasite control program with Dr. Barry Whitworth. 13. Nutrition for Health and Production - calculation of energy, protein and feed intake requirements with Dr. Steve Hart. 14. DHI Training - supervisor/tester training for dairy goat producers including scale certification with Ms. Eva Vasquez. 15. USDA/APHIS: Animal ID with Dr. Michael Pruitt and USDA/WS: Wildlife programs with Mr. Kevin Grant (1:30 p.m. and 2:30 p.m. ONLY) 16. USDA/NRCS: Conservation programs with Ms. D'Ann Peterson and USDA/FSA: Farm loans with Mr. Phil Estes (1:30 p.m. and 3:30 p.m. ONLY) 17. USDA/NASS: Animal inventories with Mr. Wil Hundl and Perry Livestock: Livestock auctions and marketing with Mr. Travis Perrin (2:30 p.m. and 2:30 p.m. ONLY) 18. Fitting and Showing for Youth and Adults - tips and pointers on fitting and show ring etiquette with Messrs. Robbie and Coleman Sanders (this is a half-day afternoon workshop).
	2:30 - 3:20 p.m.	Please Select a Workshop for this session and Enter the Workshop number here: _____	
	3:30 - 4:20 p.m.	Please Select a Workshop for this session and Enter the Workshop number here: _____	

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In compliance with the ADA Act, participants with special needs can be reasonably accommodated by contacting Dr. Terry Gipson at (405) 466-6126 at least five business days prior to the Goat Field Day.

Cooperative Extension Program
Langston University
P O Box 1730
Langston, OK 73050

Phone: 404 466 6107

Fax: 405 466 6177

Greetings Goat Field Day Participants:

The Langston University E (Kika) de la Garza American Institute for Goat Research provides the opportunity for children ages 5-13 to engage in the **Goat Field Day for Kids Program** while their parent(s) participate in Goat Field Day workshops and seminars, **Saturday, April 29, 2017.**

The **Goat Field Day for Kids Program** will consist of *"hands on fun" and recreational games such as basketball, volleyball, dodgeball and jump-rope*. It is intended that these activities will cause the kids to have "so much fun" while challenging their ability to implement creative thinking and socialization capabilities.

Please complete and return the **Goat Field Day for Kids Program Registration Form** along with your Goat Field Day Registration Packet. **Be sure to check their Participation Status indicated on page 2.**

If you have questions or concerns, you may contact Shirlene Hurte at (405) 466 6107 or shurte@langston.edu. We look forward to supporting your Goat Field Day experience.

Sincerely,



Shirlene Hurte, Extension Specialist
Cooperative Extension Service
4-H Youth Development

4-H Fun Facts

History

4-H, the current informal, educational program that promotes youth development began between 1890 and 1900. The educational climate of that decade saw educators for the first time recognize the needs of young people; educators began to stress that education should meet those needs. Then progressive educators in town and city schools also introduced nature study into the curriculum, and school gardens attracted attention in many places throughout the country. Rural educators, in response to a demand from farm people, introduced subjects that taught boys and girls to understand and appreciate rural life while emphasizing rural opportunities. College educators in the late 19th and early 20th centuries were reaching beyond the campus to teach. Agricultural college professors in nearly all states were organizing “farmers’ institutes” meetings to bring the latest scientific agricultural information to farmers and their wives. College educators soon recognized the need to also provide some agricultural instruction for farm boys and girls as well as instilling an appreciation for life in the country.



Source: <http://www.extension.iastate.edu/4h/page/history-4-h>

The 4-Hs

Head, Heart, Hands, and Health are the four Hs in 4-H, and they are the four values members work on through fun and engaging programs.

- **Head** - Managing, Thinking
- **Heart** - Relating, Caring
- **Hands** - Giving, Working
- **Health** - Being, Living

The 4-H Pledge

I pledge my head to clearer thinking,
My heart to greater loyalty,
My hands to larger service,
and my health to better living,
for my club, my community, my country, and my world.

4-H Mission

4-H empowers youth to reach their full potential, working and learning in partnership with caring adults.

4-H Vision

A world in which youth and adults learn, grow and work together as catalysts for positive change.



Research Spotlight

Breeds and Electric Fencing.

Different breeds can react differently to the same stimulus but goats do learn from one another and can influence each others' behavior. The objective of these experiments was to observe the effect of mixing two breeds of goats and their resulting influence on behavior. In experiment #1, 80 Boer and 80 Spanish does were used to evaluate effects of grouping method, single breed (SGL) and breeds combined (COM), on behavior when exposed to electric fence treatments (FT). Five evaluation pens with one side consisting of a 5-strand barbed wire fence for cattle had electric fence strands added at 6" and 17" (LwHi), 6" and 9" (LwMd), 6" (Lw), 9" (Md), and 17" (Hi) from the ground. After 5 weeks for becoming accustomed to measurement conditions, does were divided into 2 replication sets per grouping. Each of 5 evaluation pens held 4 does for 1 hour exposure to FT while behavior was observed. Grouping method and FT affected the percentage of does exiting pens.

Breed	Group	LwHi	LwMd	Lw	Md	Hi
Boer	COM	0	50	50	88	75
	SGL	0	13	13	50	63
Spanish	COM	25	88	100	100	100
	SGL	75	100	63	100	63

In experiment #2, 78 Boer and 80 Spanish growing kids were used with similar procedures. Grouping method and FT affected the percentage of growing kids exiting pens.

Breed	Group	LwHi	LwMd	Lw	Md	Hi
Boer	COM	50	25	75	86	43
	SGL	13	75	88	75	100
Spanish	COM	63	63	76	88	75
	SGL	25	38	88	100	100

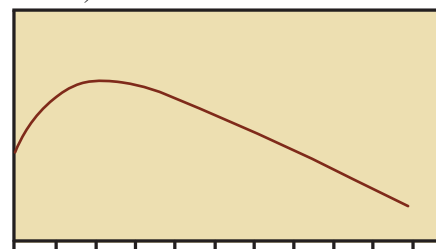
In conclusion, grouping mature but not growing Boer and Spanish goats together was effective in decreasing breed differences in behavior for evaluating electric fence strand treatments.

Tsukahara, Y., R. Puchala, J. Hayes, T.A. Gipson, T. Sahlu, A.L. Goetsch., 2016. Technical Note: Behavior effects of mixing different breeds to evaluate electric fence strand additions to barbed wire fence to contain mature and growing meat goats. *The Professional Animal Scientist* 32(6):725-735 (DOI:10.15232/pas.2016-01527)

Nutritional Concerns for Lactating Goats.

Dietary concentrate level, forage quality, and production system can have a great effect on tissue loss and gain by lactating goats in addition to milk yield and composition. Opportunities for enhanced performance with high concentrate levels are greater in early than late lactation, with high milk production potential, although there might be an advantage in efficiency of energy use in late lactation when tissue is often replenished. Effects of by-product and alternative feedstuffs on conditions such as ruminal methane emission, milk fat content and fatty acid (FA) composition, and antioxidant status depend on major and minor constituents and what they are substituted for. Research on minor dietary ingredients such as probiotics and plant secondary metabolites is likely to increase with decreased use of synthetic antimicrobials, although specific components responsible for effects are sometimes unclear. In addition to the FA profile of feedstuffs, conditions including dietary concentrate level, supplemental FA sources, and levels of plant secondary metabolites can influence bioactive ruminal biohydrogenation intermediates that decrease de novo FA synthesis in the mammary gland. Supplementation with sources of conjugated linoleic acid has been studied, but use is not common, probably because of less change in milk fat content and FA composition compared with cattle, different considerations regarding tissue mobilization in early lactation with appropriate feeding management practices, and limited or no benefit from low-fat milk. However, inclusion of moderate dietary levels of oils and other fat sources for purposes such as increased energy density, improved palatability, and decreased dustiness is widespread.

Goetsch, A.L. 2016. *Invited Review: Current areas of research of feeding practices for lactating goats. The Professional Animal Scientist* 32(6):725-735 (DOI:10.15232/pas.2016-01541).



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