

Goat Newsletter

Cooperative Extension Program Langston University

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

Spring 2013

From the Director's Desk



This is always a very busy time of the year for us. We are finishing out the old year and preparing for the new year. One activity that has been keeping us very occupied is our new USDA-funded project entitled "Sustainable Small Ruminant Production through Selection for Resistance to Internal Parasites," which was highlighted in the Fall 2012 newsletter. In this three-year project, we will study the production, economic, and genetic aspects of selecting animals that are more resistant to internal parasites. We have several of our scientists committed to working on this project, as well as, three other scientists from

two other institutions. One of our collaborating scientists will be working on the genomics aspect of the project.

At first, I must admit, I didn't know what genomics meant. What exactly was this branch of science and how will we use it? I soon discovered that genomics had to do with genetics; not the Gregor-Mendel-style of genetics, though. You may well remember that Mendel was an Augustinian monk who taught natural science to high school students in Austria in the late nineteenth century. Mendel was the first person to trace the characteristics of successive generations of a living thing, mainly the garden pea (Pisum sativum). Yeah, I knew all about yellow or green seed color, smooth or wrinkled seed, recessive and dominant, etc. I had learned all of this in school and yet, that knowledge did not bring me any closer to understanding genomics.

To take that first baby step toward understanding genomics, I would need to jump another 100 years into the middle of the twentieth century. That is when James Watson and Francis Crick discovered the

structure of deoxyribonucleic acid. DNA, as we call deoxyribonucleic acid, is the blueprint of life. It contains all of the genetic material that forms us, our family, our neighbors, our pets, our livestock, virtually all the living world around us. Essentially, strands of DNA are called chromosomes and all the chromosomes in the nucleus of a cell is called the genome. Watson and Crick discovered that this twisted ladder-like molecule was constructed of the nucleotides guanine, adenine, thymine, and cytosine; nucleotide is just a fancy name for these special proteins. Two nucleotides will bind together to form a base pair but guanine (G) will only bind to cytosine (C) and adenine (A) will only bind to thymine (T). In the human genome, there are more than 3 billion base pairs. If the DNA from a single human cell could be stretched out straight, it would be over 6 feet long.

Incredible! Now I understood, genomics is about sequencing these Gs, Cs, As, and Ts and investigating the effects that the sequences have. This is not an easy task. It took a well-funded group of scientists, working in several labo-



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E (Kika) de la Garza American Institute for Goat Research Langston University P.O. Box 730 Langston, OK 73050 Phone: (405) 466-3836 FAX: (405) 466-3138 http://www2.luresext.edu Newsletter Editor Dr. Terry A. Gipson



The Cooperative Extension Program at Langston University, provides educational programs to individuals regardless of race, color, national origin, religion, sex, age, disability or status as a veteran. Issued in furtherance of Extension work, Act of September 29, 1977, in cooperation with the U.S. Department of Agriculture. ratories, more than 13 years to sequence the human genome. Work is progressing on the genomes of other species and, thankfully, many scientific advances that have accelerated the pace of sequencing. Even though the whole goat genome has not yet been sequenced, we can use tools developed by genomics research. One such tool is the screening for microsatellites, which are repeating sequences of 2-6 base pairs of DNA. How the geneticists came up with this name is bevond me. When microsatellites are mentioned, I still imagine extremely small objects orbiting the earth transmitting phone conversations and television broadcasts. Another tool that we might use are SNPs (pronounced "snips"), detected using SNP Chips. All I know is that SNP states for single-nucleotide polymorphism. Please don't even ask me to explain SNPs or SNP Chips. I'm still working on microsatellites. As I mentioned in a previous newsletter, technology is moving at a breakneck speed and genomics is one of those technologies that is moving at warp speed.

Genomics have accelerated so quickly that it is now possible to purchase a DNA kit online for as little as \$200. These kits will not sequence your complete genome but will examine certain regions, as I mentioned earlier. With the results, you can learn if you are part French, West African, Southeast Asian, or maybe Native American. You can learn even if you have Neanderthal or Denisovan ancestry. Scien-

tists have been able to sequence the Neanderthal genome using bone fragments and several recent studies have shown that for those Americans whose ancestors came through Europe, about 1 to 4 percent of their genes came from Neanderthals. This comprehensive, scientific knowledge of the Neanderthal genome has lead one Harvard geneticist to propose cloning a Neanderthal. Since no Neanderthal females exist today, a human surrogate would be necessary to achieve this task. A subsequent survey of public opinion revealed that only 15 percent of Americans said scientists should be allowed to clone a Neanderthal. while 66 percent said it should not be allowed, with or without a human surrogate. In fact, an almost identical percentage of Americans said they thought scientists should not be allowed to clone a human. The issue may simply be that a Neanderthal is far too close to human for comfort Modern human and Neanderthal DNA are approximately 99.5% identical. When respondents were surveyed about cloning wooly mammoth, another long-extinct mammal, 31 percent said that scientists should be allowed to clone a mammoth, while 46 percent said it should not be allowed. What do you think? Should we clone a wooly mammoth? Should we clone a Neanderthal?

I hope to see you at the Goat Field Day in April. Please let me know your opinion then.

Enhancing Goat Products: Goat Field Day 2013

Our annual Goat Field Day will be held on Saturday, April 27, 2013 at the Langston University Goat Farm with registration beginning at 8:00 a.m. This year's theme will be **Enhancing Goat Products**.

Adult Activity (morning session): This year our featured speakers will be Mr. Patrick Anglade and Drs. Ken McMillin, Jeffrey Gillespie, and Frank Pinkerton.

Mr. Patrick Anglade is the owner/operator of Consultant of Formation en Fromagerie based in Pyrenees, France. Patrick holds a Master of Cheese Technology at the Milk Industry and Economy University of Rennes. Patrick is author of the reference book "La fromagerie à la ferme" [farmstead cheesemaking] and conducts workshops and training sessions on establishing an on-farm dairy processing facility that will comply with local and federal health guidelines. Patrick effectively guides producers through a maze of topics, including business plans, cheese ripening, production hazard analysis, troubleshooting manufacturing defects, and all other issues dealing with milk, yoghurt, lactic, soft and hard cow's, goat's, and sheep's milk cheeses, and raw and pasteurized milk cheeses. Patrick has lead training sessions and/or consultations for organizations in France, Canada, Ireland, Italy, Spain, and the United States.

Dr. Jeffrey Gillespie is the Martin D. Woodin Endowed Professor in the Louisiana State University Agricultural Center Department of Agricultural Economics and Agribusiness. Jeff conducts research on livestock and aquaculture production economics and farm management, including estimation of costs of production, adoption of technology, and farm efficiency. He teaches an undergraduate introduction to agricultural economics course and graduate courses on production economics and operations research. Jeff recently served as Editor of the Journal of Agricultural and Applied Economics and has published widely in both peer-reviewed agricultural economics journals and in the popular press. Awards at both the University and professional association levels have recognized his teaching and research contributions.

Dr. Ken McMillin is the Mr. and Mrs. Herman E. McFatter Professor of Animal Science in the Louisiana State University Agricultural Center School of

Animal Sciences and Department of Food Science. Ken conducts research in meat processing, packaging, food safety, and goat meat and instructs courses in meats, meat processing, contemporary issues in the animal sciences, and growth and development of meat animals. Ken speaks frequently to trade groups and professional organizations and is a contributor to the Goat Rancher Magazine. He also travels internationally on USDA and USAID projects, serves on the Meat Science Editorial Board, is a Professional Animal Scientist, and a Fellow in both American Meat Science Association and Institute of Food Technologists professional organizations.

Dr. Frank Pinkerton, aka The Goat Man, started his goat career at the International Dairy Goat Research Center of Prairie View A&M University in 1978. In 1983, Frank relocated to Langston University to conduct extension work in dairy, Angora, and meat goats. Frank retired in 1993 to raise meat goats in east TX and do consulting work in goat management and marketing. During his 40+ year career, Frank has published numerous scientific articles and technical bulletins on dairy, Angora, and meat goats. Frank also conducted 13 international consultancies on livestock and goat nutrition and 16 domestic consultancies on goat management and marketing, not to mention conducting 5 large-scale goat-grazing demonstrations for vegetative control in public forests and grasslands. Since March of 2005, Frank has written a monthly question-and-answer column for The Goat Rancher and also to share occasional articles on various facets of the industry.

Adult Activities (afternoon session): In the afternoon session, participants will break into small-group workshops. There will be a total of twelve workshops; however, participants will only have time enough to attend three.

The afternoon workshops include:

- French Goat Cheeses an overview of French cheesemaking with Mr. Patrick Anglade.
- Meat Goat Industry Status Report and Observations for Profitability what every producer should know about the meat goat industry with Drs. Ken McMillin, Jeff Gillespie, and Frank Pinkerton.
- Internal Parasite Control sustainable internal

- parasite control program with Dr. Dave Sparks.
- Basic Herd Health herd health program including vaccinations, injection sites, and approved drugs with Dr. Lionel Dawson.
- The Art of Drawing and Illustrating basics of how to draw any type of goat with Mr. Ken Williams.
- Nutrition for Health and Production calculations of feed intake and of energy and protein requirements with Dr. Steve Hart.
- Goat Reproduction basics of goat reproduction and techniques and equipment for artificial insemination in goats with Dr. Erick Loetz.
- *DHI Training* supervisor/tester training for dairy goat producers including scale certification with Ms. Eva Vasquez.
- Body Condition Scoring practical application of body condition scoring and its use in herd management with Mr. Jerry Hayes.
- USDA Government Programs overview of USDA Natural Resource Conservation Service's work with goats and its cost-sharing program with Mr. Dwight Guy.
- Mortality Composting basic composting techniques and equipment for disposing of goat mortalities with Dr. Roger Merkel.
- Fitting and Showing for Youth and Adults tips and pointers on fitting and show ring etiquette with Ms. Kay Garrett (this is a half-day afternoon workshop).

Fun Tent Youth Activity: Ms. Sheila Stevenson will host a full day of activities for youth ages 5-12 in the Fun Tent. This will allow the parents and older teens to enjoy the workshops knowing that their little ones are having fun in a safe environment. Last year, some activities included Pony Rides; Kid Petting Area; Face Painting; Exercise; Photo Greeting Cards; a Movie Room and many others. This year's Youth Fun Tent activities will include those activities as well as some new activities including Cool Science (ages 9 & up); Geo Boards (9 & up); Leather Craft (9 & up); and Environmental Exploration (9 & up).

GPS Scavenger Hunt Youth Activity: Ms. Sheila Stevenson will also organize a ½-day GPS

scavenger hunt on campus, weather permitting. Youth will learn the basics of GPS and will use a GPS unit to find "hidden" objects.

Fitting and Showing Youth Activity: In the afternoon, youth and interested adults will be able to participate in a half-day clipping, fitting, and showing workshop conducted by Ms. Kay Garrett of the Oklahoma Meat Goat Association. Participants will have the opportunity to have hands-on practice of clipping, fitting, and showing a goat.

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.

Our ever-popular goat milk cheesemaking workshop has been scheduled on Friday, April 26, 2013 (the day before our annual Goat Field Day on April 27). Mr. Patrick Anglade, Consultant of Formation en Fromagerie based in Pyrenees, France, will be our distinguished Invited Instructor for this year's workshop. Patrick is an internationally renowned cheese entrepreneur, creator, and evaluator in the world of cheese. He has hosted cheesemaking workshops, judged cheese contests and designed cheese plants in many countries. He will share with us his rich background, hands-on experience and masterful skills in small-scale and homestead cheese manufacture. He will demonstrate basic principles and practical skills of making authentic French cheeses using our own Grade "A" goat milk. Milk quality, laboratory testing, cheesemaking facility and marketing strategies will also be discussed. This one-day hands-on workshop will be held in the pilot creamery at Langston University. For the cheesemaking workshop, there is a registration fee of \$100.00/person, which includes continental breakfast and lunch consisting of goat meat barbecue, sausage, and jerky and goat milk ice cream and cheeses, etc. Only the first 20 registrants will be admitted.

For information regarding the cheesemaking workshop, please contact Dr. Steve Zeng, Dairy Product Specialist, at 405-466-6145 or szeng@langston.edu.

For information regarding the 2013 Goat Field Day, please contact Dr. Terry Gipson at 405-466-6126 or at tgipson@langston.edu.

You can register online for the 2013 Goat Field Day http://www2.luresext.edu/goats/library/fd2013.html

Research Spotlight

Breed Differences for Leather Production.

Spanish (S; 28 - 40 weeks of age) and Boer (B; 33 - 46 weeks of age) wethers were used to determine effects of level and length of supplementation on leather characteristics. The experiment started in January and had 110 and 108 day periods. Wethers resided on pastures with freechoice access to alfalfa hay and supplementation with 0.5 or 1.5% bodyweight (dry-matter basis: L and H, respectively) of a pelleted diet (16% CP and 60% TDN). Five S and 6 B were harvested initially, and 12 per breed and supplementation were harvested after periods 1 and 2. Skins were salted for 10 to 14 days and then chrome tanned. There were breed differences in initial bodyweight (73 and 52 lbs), initial thickness of leather (1.83 and 1.48 mm), and % elongation (67 and 55%) for B and S, respectively. The bodyweight was affected by supplementation (106 and 95 lbs for H and L), breed (117 and 84 lbs for B and S), and period (92 and 109 lbs in 1 and 2, respectively). Leather thickness and tensile strength were unaffected by period or supplementation but B skins were thicker (1.91 vs. 1.71 mm) and had greater tensile strength (31.0 vs. 28.1 MPa,) than S skins. Percent elongation was greater in period 1 than period 2 (51.9, 58.6, 45.1, and 40.5%, for period 1-H, period 1-L, period 2-H, and period 2-L, respectively) and greater for B than for S skins (50.6 vs. 47.4%). As goats aged, leather stiffness increased as seen by lower % elongation and higher Young's modulus in period 2. Supplementation level affected bodyweight with lesser effects upon leather characteristics. Boer goats were larger, grew faster and had greater skin thickness, the latter which contributed to the greater values of B leather for tensile strength and % elongation. Goat skins were not shaved to an equal thickness and results are based upon tests of full skins. Further research is needed to evaluate the above characteristics on shaved goat leather.

Merkel, R., C.K. Liu, N. Latona, A. El A'mma, A. Goetsch. 2012. Effects of level and length of supplementation on leather characteristics of yearling Boer and Spanish wethers. Proceedings of the 11th International Conference on Goats. p. 250. International Goat Association.

Creep Grazing and Stocking Rate.

Effects of creep grazing and stocking rate on diet selection and nutritive value of Spanish does with Boer × Spanish kids and Boer × Spanish does with 3/4 Boer-1/4 Spanish kids were determined in ten one-acre grass/forb pastures. There were four treatments, three involving stocking rate and one creep grazing, with two animal groups per treatment. Groups had 4 does with 8 kids for the low stocking rate (L), 6 does with 12 kids for a moderate stocking rate (M), and 8 does with 16 kids for both the high stocking rate (H) and creep grazing treatments (C). Kids on the C treatment also had access to similar one-acre pastures but that contained the tree legume mimosa (Albizia julibrissin Durazz) planted in rows. This species was used because of the high nutritive value of leaves (23.9% CP, 22.9% NDF, 5.7% ADL, and 91.8% in vitro true DM digestibility) and ready consumption by goats. Each pasture consisted of four equal-size paddocks that were rotationally grazed twice. A direct observation and simulation method was applied to determine botanical composition and nutritive value of the diet selected by does and kids. There were no effects of stocking rate or animal type on the diet selected. Diets were higher in grasses vs. forbs (79.5 and 78.2% grasses vs. 20.5 and 21.8% forbs for does and kids, respectively). However, mimosa leaves were 53% of the diet consumed by C kids, with grasses and forbs at 23 and 24%, respectively. As a result, the C kids selected a diet higher in CP (20.6%) and digestibility (88.1%) and lower in NDF (31.0%) and ADL (5.1%) compared with diet averages for kids on the stocking rate treatments (18.2% CP, 55.5% NDF, 6.3% ADL, and 74.6% digestibility). In conclusion, when exposed to similar forage conditions botanical composition and nutritive value of the diet selected by does and kids were similar, although when kids had access to a creep grazing area nutritive value of the diet was improved by preferential consumption of mimosa tree leaves. Yiakoulaki, M.D., A.L. Goetsch, G. Detweiler, T. Sahlu. 2012. Effects of creep grazing and stocking rate on diet selection and nutritive value of does and kids. Proceedings of the 11th International Conference on Goats. p. 327. International Goat Association.



GOAT FIELD DAY

Saturday, April 27, 2013 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://www2.luresext.edu/goats/library/fd2013.html

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 "RESEARCH SALES" for the amount, if registering for lunch.
- 4.- Mail this form and the check as soon as possible.

PRE-RECISTRATION FORM

I RE-REGISTRATION	TORM
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 i lunch.	s a fee for lunch. You may bring your own
Lunch Pre-Registration (Deadline April 19, 2013)	Make checks payable to: Research Sales
Adults (\$10.00 each)	Please mail this form and check to:
Children (12 and under) (\$5.00 each)	Agric. Res. and Ext. Prog.
TOTAL	Langston University P.O. Box 730 Langston, OK 73050 ATTN: FIELD DAY

2012 Goat Field Day Registration - Adult

Morning	9:00 - 11:45 a.m.	IMPORTANT!! Adult participants will attend a general morning session starting 9:00 a.m. and will be able to attend three breakout sessions in the afternoon. Pleas choose your three afternoon workshops below.			
	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: 1. French Goat Cheeses - an overview of French cheesemaking with Mr. Patrick Anglade. 2. Meat Goat Industry Status Report and Observations for Profitability - what every producer should know about the meat goat industry with Drs. Ken McMillin, Jeff Gillespie, and Frank Pinkerton.		
Afternoon Sessions	2:30 - 3:20 p.m.	Please Select a Workshop for this session and Enter the Workshop number here:	 injection sites, and approved drugs with Dr. Lionel Dawson. The Art of Drawing and Illustrating - basics of how to draw any type of goat with Mr. Ken Williams. Nutrition for Health and Production - calculation of energy, protein and feed intake requirements with Dr. Steve Hart. Goat Reproduction - basics of goat reproduction and techniques and equipment for artificial insemination in goats with Dr. Erick Loetz. 		
	3:30 - 4:20 p.m.	Please Select a Workshop for this session and Enter the Workshop number here:	 DHI Training - supervisor/tester training for dairy goat producers including scale certification with Ms. Eva Vasquez. Body Condition Scoring - practical application of body condition scoring and its use in herd management with Mr. Jerry Hayes. USDA Government Programs - overview of USDA Natural Resource Conservation Service's work with goats and its cost-sharing program with Mr. Dwight Guy. Mortality Composting - basic composting techniques and equipment for disposing of goat mortalities with Dr. Roger Merkel. Fitting and Showing for Youth and Adults - tips and pointers on fitting and show ring etiquette with Ms. Kay Garrett (this is a half-day afternoon workshop). 		

The Cooperative Extension Program at Langston University, provides educational programs to individuals regardless of race, color, national origin, religion, sex, age, disability or status as a veteran. Issued in furtherance of Extension Work, Act of September 29, 1977, in cooperation with the U.S. Department of Agriculture.

Cooperative Extension Program

4-H Youth Development Langston University, P.O. Box 1730, Langston, OK 73050

Phone: (405) 466-3836 Fax: (405) 466-6177

Greetings Goat Field Day Participants:

This letter is to invite you to bring your youth (ages 5-13) to enjoy a full day of Fun, Food & Excitement during Goat Field Day, **Saturday**, **April 27**, **2013**. This is the 12th year that the Cooperative Extension Program has hosted a "Fun Tent" filled with activities to keep your youth engaged while you enjoy your workshops and seminars. This year we are offering some new activities for the youth to enjoy. *Please Note: If your youth will be signing up for the ½-day Fitting & Showing session*, *please check the box on the Youth Registration. We will need to know how many youth will be leaving the Fun Tent to attend that afternoon workshop.*

<u>New Activities</u> include: Cool Science (ages 9 & up); Geo Boards (9 & up); Leather Craft (9 & up); Environmental Exploration (9 & up). We will still have a ½-day GPS scavenger hunt on campus, (weather permitting), for older youth as well. Youth will learn the basics of GPS and will use a GPS unit to find "hidden" objects.

Youth ages 5 to 8 will enjoy a host of activities throughout the day including some of our favorites: Pony Rides; Kid Petting Area; Face Painting; Exercise; Photo Greeting Cards; a Movie Room and much more. Due to increasing numbers of youth participants, we strongly encourage an adult or older sibling to accompany younger youth.

Included in this letter is the youth registration form, Waiver of Liability form, and Participant Stamp card. Complete one form per child (make as many copies as needed) and return with your Goat Field Day Registration. Lunch will be provided onsite for youth participants. We are excited to have the opportunity to make a positive investment in the lives of our youth.

If you have any questions or concerns, please contact Sheila Stevenson @ 405-466-6118 or Dr. Terry Gipson @ 405-466-6126.

Sincerely,

Sheila Stevenson Extension Specialist II

4-H Youth Development

Cooperative Extension Service

Langston University

Youth Registration

Langston University School of Agriculture and Applied Sciences Goat Field Day 2013

Please Print

Youth Name:			
	Last	MI	First
Age as of April 27, 2	2013:	Grade as of Jan. 2013:	Male or Female (circle one)
Youth Address:	Stroot/DOR/DD	Apt# City	State Zip
	Sileei/POB/RR	Apt# City	State Zip
Home phone: ()	Email Address:	
Parent or Guardian	Name:		Relationship:
Name and Phone to	contact of Pare	ent or Guardian during Field D	ay Activities:
Name:		Cell P	Phone: ()
will be atter	nding the ½-d	lay Fitting & Showing sess	ion (afternoon)
		Optional Information	ı
Member of 4-H: □ Y	'es □ No		Member of FFA: □ Yes □ No
4-H Club and Count	y:		
FFA Chapter:			

<u>Please fill out the attached Goat Field Day Youth Registration forms to complete your packet.</u>

Goat Field Day 4-H Fun Tent 2013 Youth Registration

Waiver and Release of Liability

(Minors must have signature of Parents/Legal Guardian)

PLEASE TYPE OR PRINT

Name of partic	cipant:				
		(Last)		(First)	(Middle)
DOB:		Age	Race	Gender ()	M () F
(Month)	(Day)	(Year)			
Address:			01. /T		01.1.71
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Name:				_Relationship to youth:	
Cell Phone ()				
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	ly serious	s rieaitir issues/pi	oblettis of 1000 a	allergies that we should be	aware or, piease list.
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rarent or Legal	Guardian	(sign name nere)		keiationsnip to Minor	
Undersigned (P	rint nam	e here)		Cell Phone	<u> </u>
Address (if diffe	rent from	Minor)		E-Mail address	
Date				Sheila Stevenson, Coordin Cooperative Extension Repre	

The Cooperative Extension Program at Langston University provides educational programs to individuals regardless of race, color, national origin, sex, age, religion, disability, or status as a veteran. Issued in furtherance of Extension Work Act of September 29, 1977, in cooperation with the U.S. Department of Agriculture.

Name:					
(Nickname):			or F		
Allergies:				Team Le	eader(s)
Emergency Conta	ct Person:				
Phone with Area Session #s	/ /	/ /			
	Age Group Names				
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	ds—(Trackers)				
Youth w	ill receive a stamp fo	r each activity they o	omplete.		
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Goat Field Day 2013 Enhancing Goat Products

You can register online http://www2.luresext.edu/goats/library/fd2013.html







Goat Newsletter

E (Kika) de la Garza American Institute for Goat Research
Langston University
P.O. Box 730
Langston, OK 73050