

Goat Producer's Newsletter

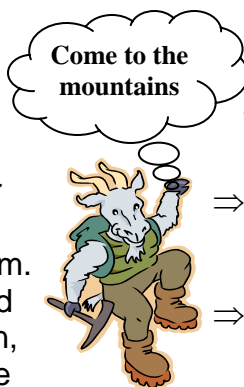
Terry Hutchens, MS, Animal and Food Sciences, UK
Robert Harmon, PhD, Animal and Food Sciences, UK

2006 UK, College of Agriculture All Commodity Field Day Features Goat Production

Brandon Sears, Extension Associate
for Goat Forage Management

The 2006 UK College of Agriculture All Commodity Field Day will be held at the Robinson Station located in Quicksand, KY. on September 28, 2006. The goat production workshop will run from 9:30 a.m. to 2:30 p.m. and will be located at Sebastian Farms in Jackson, KY. Registration will take place at the Robinson Station from 8:30-9 a.m. Transportation to Sebastian Farms will be provided. There will be a \$5 charge for lunch. Six sessions on various goat production topics will be discussed:

- ⇒ **Goat Health and Vaccination**,
Patty Scharko, DMV, UK Extension Ruminant Veterinarian
- ⇒ **Goat Nutrition and UK Mineral Recommendation**
Terry Hutchens, UK Extension Associate Specialist



- ⇒ **Goat Production Facilities, Fencing and Guard Animals**
Kenneth Andries, PhD, KSU Livestock Specialist
- ⇒ **Pasture Management and Goat Cattle Co-grazing**
Brandon Sears, UK Extension Associate
- ⇒ **Goat Marketing**
Tess Caudill, KDA Goat Marketing Specialist
- ⇒ **Goat Breed Evaluation Research**
Richard Browning, PhD, TSU Goat Researcher
- ⇒ **FAMACHA** training will be held at 2:45 p.m. for individuals who wish to purchase FAMACHA cards.

These sessions have been selected to cover many of the main goat production issues in Kentucky. Hands-on training with goats will be provided as well as a walking pasture tour. From 3:30 p.m. to 6:30 p.m., goat forage tours will be provided at Robinson Station. Wagon stops include goat grazing preference research plots and sericea lespedeza establishment plots.

For more information contact:
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Parasite Control Meeting Discussed Control and Prevention Ideas

Ken Andries,
Kentucky State University

The Southern Consortium for Small Ruminant Parasite Control met this past May to discuss new findings in parasite control practices and discuss future research into new projects and programs. This group consists of USDA-ARS and land grant universities across the southeast. It includes several parasitologists, researchers, and Extension specialists working with sheep and goats.

Research into novel methods of control is continuing with some varying results. The first report in this area was on the use of copper oxide wire particles for control of the barber pole worm. The research is showing mixed results after promising initial trials. Work is continuing to find the reasons for the variation in results. It may be due to age of the animals because a result in kids and lambs has been better than in older animals. The results are showing a better response in first applications in young animals, however, the second dose does not have the same results. It may also be affected by the copper status of the animals before treatment.

The second area was the use of condensed tannins for parasite control. All reports have been positive for this alternative method. However, the current tests have been conducted with hay only, and few trials using grazing conditions have been completed. The forage being used is sericea lespedeza containing a high tannin concentration, while the variety of choice is AU Grazer, and is presently being seen as the research variety of choice.

Many newer varieties have been developed to have lower tannin concentrations to make them more palatable; the higher tannin varieties are the ones that have the most potential for parasite control. More research is needed into establishment and grazing management to get acceptable parasite control under grazing conditions.

The final important report was on a change in the recommended list of dewormers. You still must work with your veterinarian for use of any product not labeled for goats or for higher doses than are listed on the label. The new recommendation is for a change in the use of Cydectin. The parasitologists are recommending that people change from the pour on cattle formula to the cattle injectable form. The recommended dose is also different for the injectable. You need to talk to your veterinarian to get the recommended dose of the new product. Patty Scharko has been working to inform the veterinarians in the state of the new recommendation, however if your local veterinarian does not have the information please ask them to contact Scharko at the diagnosis lab for the new information. If she is not available, please contact me at KSU.

Finally, the group is planning to continue research into novel parasite control methods. They are also looking into a couple of organic parasite treatments being recommended by certified organic groups. They are also examining the issue of selection of resistant animals and looking for other forages that can help control parasites.

The final discussion was more of a realization and statement that producers will have to utilize an integrated management system to control parasites in the long term. This will include pasture and forage management, targeted treatments, selection of animals, and potential new

management technology in the future. Resistance is building in the parasite population to all chemical control products, including the natural and organic products. This resistance will have to be managed through integrated management systems. Any product that is not 100% effective will result in resistance in time.

Digital FAMACHA and Livestock Records on Your PDA

Greg Henson, UK, County Extension Agent for Agriculture and Natural Resources, McLean Co.

One of the greatest challenges faced by farmers in the digital age is managing information. In my experience as a county agent, I see lots of information recorded that yields little benefit to the farmer because he doesn't have a practical way to manage that information.

Oh sure, we all have computers, but who has a full-time keypunch operator to enter all that information and organize it in some useful manner?

Well, I recently ran upon a very useful little data-gathering program. for PDA's (personal digital assistants) that may offer a solution to the problem. One of the uses I found early on was to develop a data gathering sequence for FAMACHA, the eye color guide many goat producers are using to manage deworming in their flocks.

FAMACHA includes a nice little paper-based matrix on which to record eye color data and, if used regularly, will give you a good picture of what the parasite status is in your flock. It also allows a quick visual reference of change over time. But it doesn't record individual animal records and it's still paper!

Now, there are some folks in South Africa who have created a data capture program. that fits the bill. Named Cybertracker, it was created as an icon-based program. for PDAs to track wildlife on the African savannah but has since been put to use in literally hundreds of data-gathering situations.

With Cybertracker, you can create a data collection "sequence" by tapping a box or icon on your PDA. The data is then "synchronized" back to your personal computer. A reporting function allows you to create reports from any field of the data, such as individual animal data, evaluation date, FAMACHA score, or any other data you collected. The results can be exported to an Excel spreadsheet for further analysis, and it also records GPS position, date, and time for export into your favorite mapping program.

Using that feature, you can quickly see the Cybertracker could literally be used for almost any data collection job on the farm. In fact, I've been experimenting around with not only FAMACHA records, but cow calf records, field operations and scouting records, soil compaction mapping records, and the like. Your imagination is the only limiting factor in the kind of information you could collect.

If you'd like to take a look, you can download Cybertracker (did I mention it's also FREE?) from <http://www.cybertracker.co.za>. And if you'd like to see some of the "beta" data collectors I've been toying with, just email me at ghenson@uky.edu



Regional Goat Forage Field Days

- ⇒ Tuesday, August 29,
 - ⇒ Goat Forage Field Day at the Southern Indiana Purdue Agriculture Center, Dubois IN, near Jasper IN.
 - ⇒ Regional project: Purdue, UK, KSU
 - ⇒ Topics: cool season grasses,
 - * summer annuals,
 - * pasture management,
 - * foot disease & parasite management on pasture,
 - * water and fencing systems
- www.ansc.purdue.edu/meatgoat/Mainpage.htm
www.uky.edu/Ag/AnimalSciences/goats/goat.html

Evaluation of Distillers Dried Grains with Solubles, Soybean Hulls and Whole Corn in Diets for Growing and Finishing Meat Goats

Terry Hutchens; UK, Charles Smith; Producer, John Johns; UK, Kenneth Andries; KSU, Patty Scharko; UK



Test goats waiting for processing for a 14 day weight period.



Test goat eating from a hanging hay manger.

The Kentucky.. meat goat industry has grown dramatically within the past five-year period. For the year 2005, USDA estimates the number of breeding goats in Kentucky.. to be in excess of 63,500 on 2,500 farms. This population ranks Kentucky sixth nationally in goat numbers. Much of this growth has occurred on small to medium sized farms. Major issues for these producers are economical and easily managed feeds for the production of meat goats for slaughter. Grain-based commercial feeds and supplements may not be economical.

High-starch supplements reduce ruminal pH and fiber digestibility, thus reducing growth rate. Some by-

product feeds contain highly digestible fiber, which could potentially provide an alternative without the management problems associated with high-starch (high-grain) diets. Therefore, this study was conducted to compare a commercially available 16% pelleted goat ration with two farm mixed- rations composed predominately of the by-product feeds, distillers dried grains with solubles (DDGS), and soybean hulls. This research was supported by the Distillers Grains Technology Council, University of Louisville, Lutz Hall, Room 435, Louisville KY. 40292

Procedures

Sixty weanling (104 to120 days old) Boer x Kiko kids were used in a 56-day,



Charles Smith, Glasgow, KY. is seen moving goats that are on the by-product feed trial.



Walk by hand-feeding system with 12 inches of bunk space per head.

feeding study. All were weaned two to four weeks prior to the beginning of the study and were readily consuming concentrate and grass hay. These kids were produced and raised on a single farm in south central Kentucky. Kids were born during two periods, September to October 2005 and October to November 2005. The test population consisted of 35 male and 25 female kids. Body weight was measured with a Gallagher®, SmartScale 200 digital scale. Animals were randomly and equally allocated to one of three treatments based on weight, age, and sex. Treatments consisted of: 1) a commercial ration 2) a farm mixed ration containing 20% DDGS, 40% soybean hulls, and 40% whole shelled corn or 3) a farm-mixed ration containing 30% DDGS, 30% soybean hulls and 40% whole shelled corn.

Feeds were weighed with a Rapala® 50 lb digital scale and rations mixed prior to each morning and evening feeding. Each test group was fed at a rate of 3% of the test group average body weight. Groups were weighed every 14 days with ration amounts increased accordingly. Orchardgrass hay was provided in an overhead manger for free choice consumption. Hay was weighed prior to placing in hanging mangers, but no attempt to measure hay wastage was made. Intake was considered to be the weight placed in the manger.

Samples of the commercial feed, DDGS and soybean hulls were sent to Dairy One Laboratory for nutrient analysis by NIR. Samples of the orchardgrass hay were sent to the Kentucky.. Department of Agriculture for analysis by NIR. Nutrient content is shown in Table 1. Nutrient values for corn were taken from the 2000 update

of the NRC Nutrient Requirements for Beef Cattle. Nutrient content of rations (Table 2) was calculated based on the percentage of ingredients in the mixture, including hay consumed at 1.5 lbs per head daily. The rations containing 20 and 30% DDGS were balanced to be isocaloric and isonitrogenous. The commercial ration is slightly higher in Crude Protein and TDN than the two mixed rations, but nutrient values for all rations are within current recommendations for growing and finishing slaughter kids. Animals in each treatment group were provided ad libitum access to water and mineral. Barn space was provided at the rate of 25 ft² per head. Bunk space was 12 linear inches per kid. At the end of the 56-day test, all kids were consigned to and sold in a Kentucky.. Department of Agriculture sponsored graded goat sale in Bowling Green, Ky.

Statistical Analysis

Data were analyzed by the PROC GLM procedure of SAS (SAS Inst. Inc. Cary, N.C.) with dependent variables including diet, weight, age, and sex.

Results and Discussion

Body Weight and Performance of Kids

Period body weights, total pounds of gain, and overall ADG of kids on the three treatments are shown in Table 3. There was no significant ($P > .05$) effect of ration on body weight, gain or ADG for the entire trial. Kids consuming all three rations performed well. Treatment differences for ADG at different weigh periods did occur as shown in Table 4. Kids receiving the 30% DDGS gained significantly ($P = .05$) faster than kids on the 20% DDGS ration but not the control ration during the first 14 days of the trial. From day 14 to 28, kids receiving the 20% DDGS had a higher rate of gain than kids on either the control

| Feed/Ingredient | Commercial | DDGS | Soybean Hulls | Hay |
|--------------------|------------|------|---------------|------|
| Dry Matter % | 89.3 | 89.1 | 88.6 | 85.1 |
| C. Protein % | 17.8 | 30.2 | 11.0 | 10.3 |
| ADF % | 15.2 | 16.9 | 48.3 | 44.9 |
| NDF % | 31.5 | 30.2 | 72.1 | 69.8 |
| NFC ^a % | 45.7 | 29.1 | 13 | 8.6 |
| TDN % | 77 | 71 | 59 | 43.4 |

^aNonfiber carbohydrate calculated as 100 – (NDF + CP + EE + Ash)

| Ration | Commercial | 20% DDGS | 30% DDGS |
|---------------------|------------|----------|----------|
| Dry Matter % | 87.2 | 86.8 | 86.8 |
| Crude Protein % | 14.1 | 12.7 | 13.1 |
| ADF % | 30.1 | 38.6 | 37.0 |
| NDF % | 50.7 | 60.3 | 58.3 |
| NFC % | 27.2 | 18.8 | 19.6 |
| fNDF ^a % | 37.8 | 15.7 | 20.0 |
| TDN % | 60.2 | 58.2 | 58.8 |

^afNDF= NDF from hay

| | Commercial | 20 % DDGS | 30 % DDGS |
|----------------------|-------------------|-------------------|-------------------|
| Weight lbs, Day Zero | 40.1 ^a | 41.2 ^a | 40.3 ^a |
| Day 14 | 42.9 ^a | 43.0 ^a | 45.4 ^a |
| Day 28 | 48.5 ^a | 52.4 ^b | 51.3 ^a |
| Day 42 | 57.7 ^a | 59.3 ^a | 59.2 ^a |
| Day 56 | 64.8 ^a | 66.0 ^a | 63.6 ^a |
| Total Gain, lbs | 24.7 ^a | 24.8 ^a | 23.3 ^a |
| ADG, lbs | .44 ^a | .44 ^a | .41 ^a |

Least Square Means, means in the same row with differing superscripts differ significantly, P < .10

or 30% DDGS rations, ($P < .001$). From day 28 to 42, kids receiving the commercial ration gained more rapidly than kids receiving the 20% DDGS ration ($P < .01$) or the 30% DDGS ration ($P < .10$). No differences were observed from days 42 through 56 ($P > .10$). An explanation for this variability in period gain is not readily apparent because all kids were being limit fed the concentrate rations and all feed was readily consumed.

Fiber and starch components of the feeds

Goats have evolved as browsing ruminants. Rations high in starch containing grains may create an acidotic condition in the rumen, predisposing the goat to over-eating disease caused by *Clostridium perfringens* as well as other disorders associated with low rumen pH. In addition, fiber digestion may be decreased resulting in reduced animal performance as is seen in cattle.

While starch was not directly measured for the rations, NFC (non-fiber carbohydrates) is a reflection of the ration starch and rapidly fermentable sugar content. The commercial ration contained much greater levels of NFC than the two DDGS-based rations (Table 2). In theory, this level of starch fermentation in the rumen should have reduced fiber digestibility, thus total nutrient intake and performance of these kids. However, there was no effect of ration on gain (Table 3). Explanations for this finding exist. Starch fermentation in the rumen of the goat may not affect fiber digestibility as it does in cattle or fermentation of the DDGS rations was sufficiently rapid to produce total rumen VFA levels, thus pH similar to the commercial ration treatment. Any

effect on fiber digestibility would be similar in the latter case. In addition, the DDGS-based rations also contained 40% corn. This is likely a high enough level to interfere with fiber digestion and, if it occurred, create a situation similar to the commercial ration. Additional research is needed to determine the true effect of starch on fiber digestibility in goats.

Weight gain of intact males vs. females:

Intact males gained more ($P < .05$) weight overall (Graph 1) than females and they had a greater ($P < .05$) average daily gain (Graph 2) than females. Differences in total weight gained began to narrow the last 14 days of the study, perhaps suggesting that intact males were fatter and more near their desired slaughter weight than the females. Likewise, average daily gain was not different ($P > .1$) from day 42 to 56, again most likely reflecting differences in body fat between the sexes. Furthermore, males were approaching 180 days of age and, therefore, at the onset of puberty. Furthermore, average weight differences, 12.7 lbs between males vs. females may have been less in a single sex feeding trial.

Age effect on gain

Birth group or age of animals had no effect ($P > .10$) on overall weight gain or average daily gain of the goats.



Charles Smith walks through meat goat processing and weighing facility.

Economic Impact of By-Product Feed

The economics of using by-product-based rations for growing goats are shown in Table 3. All animals averaged 110.8 lbs of concentrate intake for the trial. Cost per pound of the two by-product based rations was less than 50% of the commercial ration. Total cost per head including hay was \$20.78 for the commercial ration and \$10.37 and \$10.70 for the 20% and 30% DDGS rations respectively.

This resulted in a total cost per pound of gain of \$0.84 for the commercial ration and \$0.42 for the 20% and \$0.46 for the 30% DDGS ration. Goats consuming all three rations were profitable due to an average selling price

of \$1.51 per pound. Profitability is expressed as returns to capital, land, and management. Goats fed the two DDGS-based rations had increased returns compared to the commercial ration fed goats.

Goats fed either a commercial or DDGS-based by-product ration gained similarly during this 56-day trial. Because the by-product-based rations cost much less than the commercial ration, returns were increased by 15.8% and 10.7% for the 20% and 30% DDGS rations respectively compared to the commercial ration. Using by-product-based rations will increase producer profitability when feeding growing and finishing goat kids.

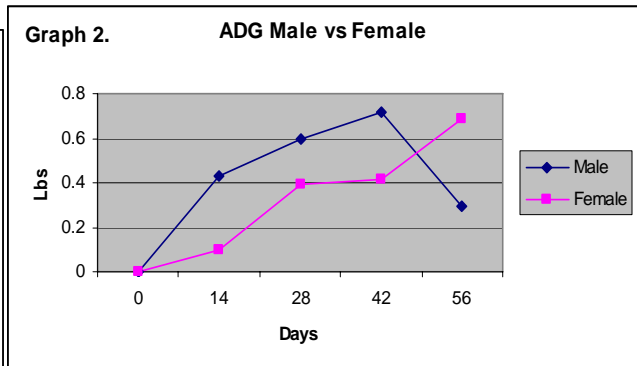
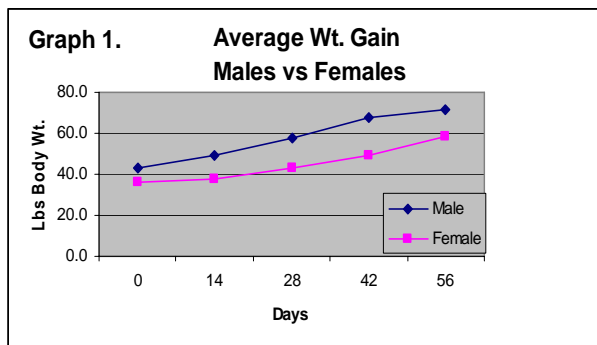


Table 4.
Period ADG, lbs of Kids Fed a Commercial or Commodity Based Ration.

| Ration | Commercial | 20 % DDGS | 30 % DDGS |
|----------|------------------|--------------------|------------------|
| Period 1 | .20 ^a | .13 ^b | .37 ^a |
| Period 2 | .40 ^c | .67 ^d | .42 ^c |
| Period 3 | .65 ^e | .49 ^{f,g} | .56 ^g |
| Period 4 | .51 ^h | .48 ^h | .31 ^h |

Least Square Means, means in the same row with differing superscripts differ significantly, ^{a,b}P = .05, ^{c,d}P < .001, ^{e,f}P < .01, ^{e,g}P < .10.

| Ration | Commercial | 20% DDGS | 30% DDGS |
|--|------------|----------|----------|
| Lbs feed/head | 110.8 | 110.8 | 110.8 |
| Cost/lb, \$ | 0.16 | 0.06 | 0.07 |
| Cost/head, \$ | 17.51 | 7.10 | 7.43 |
| Hay cost/head, \$ | 3.27 | 3.27 | 3.27 |
| Total cost/head, \$ | 20.78 | 10.37 | 10.70 |
| Total lbs of gain | 24.7 | 24.8 | 23.3 |
| Cost/lb of gain, \$ | .84 | .418 | .459 |
| Gross \$/head | 97.84 | 99.66 | 96.03 |
| Return to Capital, Land & Management/head | \$77.07 | \$89.29 | \$85.33 |

Don't Miss the 2006 Kentucky.. Buck Performance Test Sale

The 2006 Kentucky.. Buck Performance Test Sale is scheduled for Friday, August 4, 2006. If you are a goat producer looking for a quality buck to improve your goat herd, you will want to mark this date on your calendar.

In the absence of EPD information, Kentucky.. goat producers have historically relied on visual appraisal and pedigree information when selecting a buck for their herds. A buck performance test gives producers the opportunity to purchase bucks not only on these traits, but on how fast he grew which provides some insight on how fast his kids are likely to grow. As a meat goat producer, your goal is to get 50 to 65 pound kids to market as quickly and efficiently as possible. Knowing you have a herd sire with the genetic potential to produce fast growing kids is one step in reaching this goal.

This year, there will be an exciting new twist to the sale, in that paternal half sisters to the tested bucks will also be offered for sale. Producers with top performing bucks will be allowed to enter a doe kid out of the same sire as their buck. Kentucky.. producers that are not in the market for a buck at this time will still have an by adding a quality doe kid to their herd.

The sale will be held at the L.D. Brown Agriculture Expo Center in Bowling Green on August 4th at 6:30 p.m. CST. Bucks and doe kids will be available for viewing after 2:00 p.m. so come early and pick out your favorites. Complete pedigree information and to date performance data will be available in mid-July by contacting Tess Caudill at (502) 564-4983 or Tess.Caudill@KY.gov. Don't miss this exciting event!

Terry K. Hutchens

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