

Goat Producer's Newsletter

Terry Hutchens Extension Associate for Goat Production UK & KSU
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Goat Workshop

Utilization of Goats as a Vegetation Management Tool in Hardwood Forest of Kentucky Russellville KY - April 15

The University of Kentucky and Kentucky State University, as well as the board of directors for the Kentucky Goat Producers Association are offering a unique educational opportunity for Kentucky goat producers. This consortium is offering a workshop on using goats in vegetative management in forestlands. The workshop is free and includes a sponsored meal.

Registration is required.

An H. Peischel, Extension Goat Specialist from Tennessee State University, Nashville TN, will conduct the workshop. Prior to becoming a goat specialist, An operated a goat grazing company. She brings a great deal of experience and insight to this workshop.

The workshop will be held, Thursday, April 15 at the Logan County Extension Office, 121 S. Spring St., Russellville KY (270) 726-6323 and will begin at 9:00 am Central Standard Time.

Agenda:

Welcome
Why FLEP wants goats?
Overview of Vegetative Management
Brush Ecology

Livestock Behavior
Nutrition and Supplementation
Fencing and Facilities
Economics and Financial Planning
Contract Writing and Understanding

For registration contact:

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Chris Milam, Logan Co. Extension Office
270-726-6323
Terry Hutchens, UK/KSU 859-257-7533
Name(s), Address, Phone Number (with area code)
thutchen@uky.edu

Directions and Map

LOGAN COUNTY EXTENSION OFFICE
121 S. SPRING ST
RUSSELLVILLE KY 42276

From I-65 take Exit 20 onto Wm. Natcher Parkway. Take Exit 5 to 68-80 Turn left onto 68-80 and follow it in a westerly direction to Russellville. (24 miles). As you near Russellville, you will go through two traffic lights—one at Logan County High School and one at the 68-80 By-Pass intersection. Proceed 1.3 miles following 68-80 Business. When you pass the old hospital on the right 68-80 business becomes Fourth Street. Go past the Farm Bureau Office on the left and turn left onto Spring Street. (There is a Scott convenience store on one corner and a Service Auto Parts store on another.) The Extension Office is the gray building on the left. The UK Cooperative Extension sign in front of the building.

Gastro-Intestinal Parasite Survival Kit For Goats

Terry Hutchens Extension Associate for Goat Production UK & KSU
Dr. Monty Chappell, Extension Small Ruminant Specialist UK
Spring 2004

It is spring and parasite season is here. It is time to start planning for parasite management for 2004. Please note that we purposely stated “management” and not “control”. The days of adding a list of drugs to an instructional paragraph is over. By now, we have seen that dependence on one method of control (De-wormers) is quite ineffective in Kentucky. The Kentucky parasite season starts early in the year and intensifies as available moisture and seasonal temperatures progress. Furthermore, it is safe to say that there is no single element of control that can be affective in this challenge.

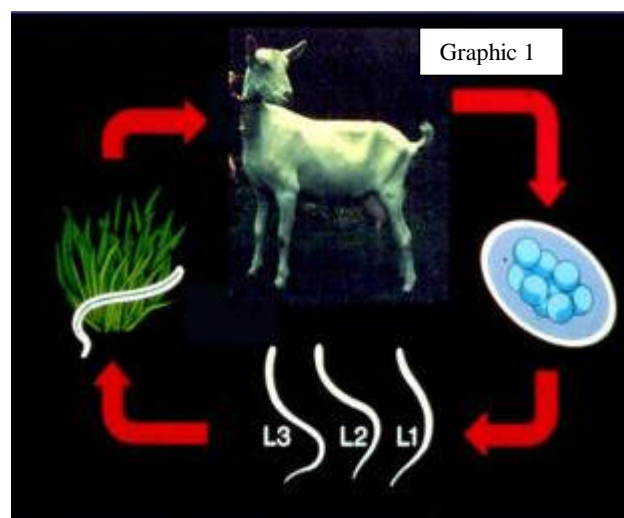
Know Your Opposition

The two parasites of primary concern are *Ostertagia* species (new name *Teladorsagia*) and *Haemonchus contortus*. Both these parasites are in the family of trichostronglodies. The primary difference between these two types is related to their temperature requirements for growth and development.

Ostertagia is a cool season parasite and is stimulated to produce eggs when temperatures reach the 40s°F. These cool season parasites are known for their ability to survive extreme winter conditions on pasture. In addition, *Ostertagia* can survive as infective larvae for 30 to 90 days during hot dry conditions. Type I infections occur in the spring when goats graze areas where overwintered infective larvae are present. Type II infections occur when arrested immature larvae located inside the host, mature and begin producing eggs during mid-winter as well as 1 week prior to and 4 weeks post kidding. On the other hand, hot dry conditions that

occur in Kentucky during July and August may kill *Ostertagia* larvae on pasture. New infections occur in the fall from parasite eggs produced from adults that emerged from arrested 4th stage larvae. The host ingested these larvae in early summer.

Arrested immature larvae or *hypobiosis* is a cessation of development of the worm within the host. Larvae in the early stages of development (early 4th stage) become metabolically inactive, they no longer feed but remain within the host in an inactive state until more favorable conditions, occur in the



host or environment for their development and the subsequent survival of their offspring.

The *Haemonchus* has a lifecycle similar to *Ostertagia* with the exception of temperature requirement.

Haemonchus is a warm season parasite and is stimulated by increases in the ambient temperature. *Haemonchus* eggs will not germinate at temperatures of 50°F or less. The optimum temperature is 86° – 95°F. The predominant method of overwintering for *Haemonchus* is in the arrested state within the animal. However, it is possible for the parasite to pass through the winter on pasture.

The importance of both these parasites is primary, when they are compared to other parasites of lesser importance who commonly take up residence within goats. The

reason for their importance is their reproductive ability. *Haemonchus* females can produce more than 5000 eggs/ female/day and it is not uncommon to have as many as 3 to 4 generations each year. A large number of deaths in goats can be attributed to *Haemonchus* infections each summer. This parasite feeds vigorously in the small intestines of both adult and young goats. High populations of *Haemonchus* can deplete as much as 1/10 of the total blood volume of an infected goat each day. *Haemonchus* is the number one cause of death in goats in Kentucky. Due to the narrow temperature requirements for *Haemonchus*, the majority of infections occur from June through September. *Haemonchus* becomes arrested in the late fall and winter.

General Lifecycle

1. Egg stage: female worms residing within the host goat release eggs. The eggs are encapsulated by the fecal pellet excrement and expelled from the infected host. The eggs germinate within 1 -2 days. The free-living L1 larvae stage readily molts into the L2 or second stage larvae. Both larvae stages feed upon bacteria from within the fecal pellet. The L1 and L2 stages are the larval feeding stages that will store energy that will be utilized by the non-feeding, L3 infective larvae.
2. Larval stage: The latter stage of larval development, the L3 is the only infective stage. The pellet must be moist (soft and pliable) for the L3 to emerge from the pellet. If the pellet dries, and becomes hard, it must become once again moistened by rainfall before emergence can occur. The L3 stage may become arrested under these conditions. The larva has the potential to wait for appropriate moisture and/or temperature before emerging from the fecal pellet. The larvae can live from 1 to 3 months in this condition. Due to the large number of eggs produced each day (5000 x each female), L3 larvae production in the spring is exponential in nature. The initial number of parasites produced in

the spring determines the future infectivity of the pasture environment.

3. **Infection stage:** Once the L3 has emerged, it climbs upon growing grass and waits to be eaten by the host. The L3 is completely encased by the skin of the L2 stage and is somewhat resistant to desiccation. However, the L3 cannot feed in this condition and must rely on energy stores from the L1 and L2 feeding stages. The length of survival is directly related to the ambient temperature and the amount of stored energy. At very high temperatures, larvae may only survive for 30 days while with more ideal temperatures 85 – 95°F, (*Haemonchus*) the larvae may survive for up to 90 days in summer and 180 days in fall and winter (*Ostertagia*). Furthermore, survival is enhanced by a slow

release of infective larvae from disintegrating fecal pellets. This permits some larvae to persist on pasture as long as 1 year.

4. **Sexual reproduction stage:** Under ideal environmental conditions, and upon entering into the host, the L3 will molt into the 4th stage larvae followed by a 5th molt into an adult. The male and female copulate and the female produces eggs in abundance. Egg production occurs in 14 to 20 days following ingestion of L3 larvae. If conditions are not favorable, the L4 can become arrested and wait for more favorable conditions. Factors that stimulate the molt from L4 into adulthood are greening of grass, temperature moderation, rain following a drought and increases of estrogen levels within the host at kidding.

Managing the Parasite Population Reduce-Avoid-Rotate-Educate

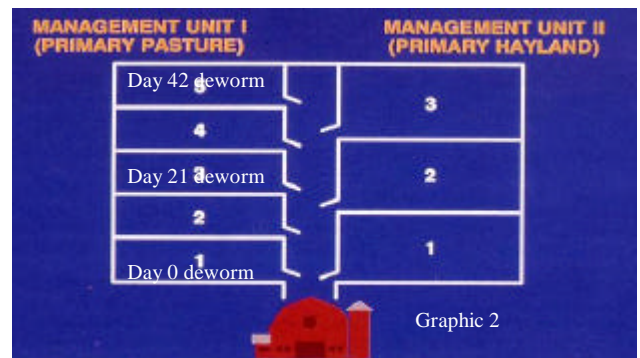
- ? **Reduce** parasite dewormer resistance on KY farms
 - Quarantine all new additions to the herd
 - Deworm on arrival with a dewormer containing 2 class of anthelmintic
 - Conduct a fecal egg count before and after deworming and look for at least a 95% reduction in egg count and, if egg reduction is less than 95%, change dewormer(s)
- ? **Reduce** parasite worm eggs on pastures
 - Keep worm eggs off pastures
 - Infective L3 stage larvae develops exponentially in the spring (Graphic 1)
 - Deworm before going on pasture and every 3rd week, 3 consecutive times (Graphic 2)
 - Deworm prior to breeding
 - Deworm 2 weeks before or within 1 week after kidding
 - Avoid total herd deworming when it is not necessary; deworm those animals having high egg counts or pale membrane color of the lower eyelids. (100 or more

eggs/gram of feces for the direct count method)

- Observe goats at least monthly during parasite infection season and identify chronic parasite carriers by the pale-pink to gray color of the membrane of the lower eyelids. Slowly eliminate these animals from the herd and develop more genetic resistance within the herd.
 - Use fecal egg counts to confirm membrane color diagnosis
 - Dry lot goats for 48 hours during deworming
 - ✍ Fast goats for the first 12-24 hours
 - ✍ Deworm and maintain in dry lot for 8-12 hours (this process keeps eggs off pasture and increases contact time between parasite and dewormer)
 - Deworm all goats 3 weeks after a rain event following a period of dry weather (See lifecycle).
- ? **Rotate** pastures for optimum production, intake and parasite avoidance.
- Subdivide large fields into small fields, graze goats for 7 to 14 days and move forward, away from fecal matter and parasite eggs (Diagram 2).
 - Do not regraze these fields again for 90 days in the summer or 180 days in the fall and winter unless there is a hay making operation or co-grazers, such as

cows, steers, and horses cleaning up the pasture behind the goats (See comments in lifecycle):

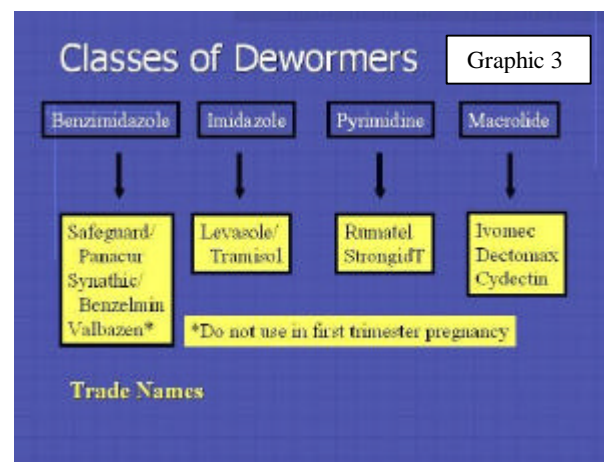
- ✍ Steers, horses or cows need to graze the regrowth down to 2 inches behind grazing goats
- Avoid grazing goats close to the ground
- Take advantage of the high quality growth of the cool



season pastures April 15 – July 1. July through September is the peak *Haemonchus* season, move goats off perennial pasture.

- July 1 move goats to browse areas facilitating consuming plant material above parasite infection level
- Or onto perennial pastures such as alfalfa, lespedeza or upright warm season grasses
- Or summer annuals such as sorghum sudangrass, soybean, or millet
- Graze these areas for 60 to 90 days before returning to the perennial pasture

- Apply 50 lbs N on perennial cool season pasture in August
 - Bring goats back to perennial cool season pasture in October – December.
- ? **Educated** goat farmers are informed and skilled
- In order to prevent build up of a dewormer resistant parasite population, treatments must be based on knowledge of parasite infection level
 - Goat producers must learn to do fecal egg counts
 - Or obtain training in FAMACHA, a method of assessing anemia in goats which can be related to the need for deworming
 - Indiscriminant or scheduled deworming is a prescription for disaster
 - Use a deworming product for 1 year or until it stops working. Frequent rotations have resulted in multiple resistance among the parasite population for a number of dewormers
 - Use the fecal egg count (FEC) reduction test for determination of parasite resistance to a drug. (Obtain a FEC, deworm the animals and obtain a second FEC sample in 10 days. There should be a 95% reduction in egg numbers per gram of feces. If not, there is possibility of resistance occurring on your farm.
- Avoid terminal use of Cydectin due to the fact that it is effective and may soon be the only effective product remaining on the market
- ? Anthelmintic product use
- Rates are 2 times the cow dosage per unit body weight for all products except Lavisol at 1.5 times the cow rate.
 - Progression of off label use:
 - ✍ Off label use must be overseen by your veterinarian
 - Progression of use:
 - ✍ 1st Sheep products,
 - ✍ 2nd cattle products and
 - ✍ 3rd horse products
 - All dewormers should be administered by mouth only
 - Make dewormer treatments based on the heaviest animal within an animal class



What is the Impact of Management on Goat Value?

Terry Hutchens UK/KSU, Dr. Monty Chappell UK

The University of Kentucky, Kentucky State University and Kentucky Department of Agriculture have joined hands in offering meat goat marketing workshops in 5 locations in the eastern part of Kentucky. Plans are to continue this same topic and progress across the state to central and western Kentucky. Stay tuned to this channel for time and location of these workshops.

For the most part, these meetings are design to stimulate thought on the business aspect of goat production. It is easy to get involved in the day-to-day activities of keeping things going and ignore the truth of the business.

Questions to ask while trimming feet:

1. How do my management decisions influence the value of my goats?
2. Do my choices have a positive or negative affect on value?
3. Do I know the difference at this point?

If your answers are like mine, they would be, I don't know, I don't know and No. The answer to these questions are not in the hard work of doing, but in the hard work of evaluation of management decision and this takes time, diligence and most of all record keeping.

As an example, is castration a good or bad management decision? Early castration, in the first 1st to 2nd a week of life reduces stress on the animal when compared to 10th or 12th week of life. The later the castration date, the greater the probability of secondary infection, fly strikes, reduced weight gain and increased cost of managing the situation. On the other hand, early castration has shown to have a predisposing affect on castrated males for urinary calculi. Early castration reduces the bore size of the urethra. There are many factors related to the disease. A few are genetic tendencies of the buck, feeding concentrates, feeding pelleted feeds, poor water sources, soil chemistry and urinary infections.

No castration has two sides to the coin as well, if meat quality and better taste is a value to a particular market then the

little bucks need to be castrated. However, most graded and/or tel-o-auction sales held in KY (2002-2003) do not discriminate between castrates and non-castrates. Six-month-old males coming into puberty may lose weight due to sexual tension and furthermore they can impregnate doe kids at 6 months of age.

Treatment	# Hd	Initial Wt. Lbs	Gain Lbs	BCS	Price/Hd (1984) \$
Intact Males	46	43.3	16.1	3.5	15.75
Castrated Knife	46	42.5	15.1	3.9	17.00
Castrated Burdizzo	48	42.6	14.8	3.9	18.00

Table 1

Shelton, Snowden and Figueiredo, 1984 TA&M

Table 1 shows some relationship between castrated and non-castrated meat goat kids, their rate of gain as well as body condition and value of product sold. Intact males gained slightly more weight than castrates, but the castrates show a greater amount of fat cover over the muscle, indicated by the body condition score (BCS). Furthermore, the buyers at this market (circa 1984) paid more money for the castrates indicating perhaps an increase in grade and quality.

In conclusion, we can make the following statements about castrating male goats.

1. Castration has no influence on prices in graded sales at young ages
2. Castration has an affect on desirability for the direct market, most direct market buyers want intact males
3. Castration may be an advantages practice to improve the grade on thin framed kids due to the additional fat development on top of the muscle
4. Time of castration may affect the health and stress level on kids

5. No castration may increase the rate of gain, but may well have a negative impact on meat quality and grade
6. No castration may also have a negative affect on older kids (6 months and older) due to puberty and unwanted pregnancies

In order to evaluate the affect of castration on goat value, each producer must consider both the positive and negative side of the issue and select one that is most beneficial to the production system. Secondly, evaluate the process continuously until the appropriate method is determined.

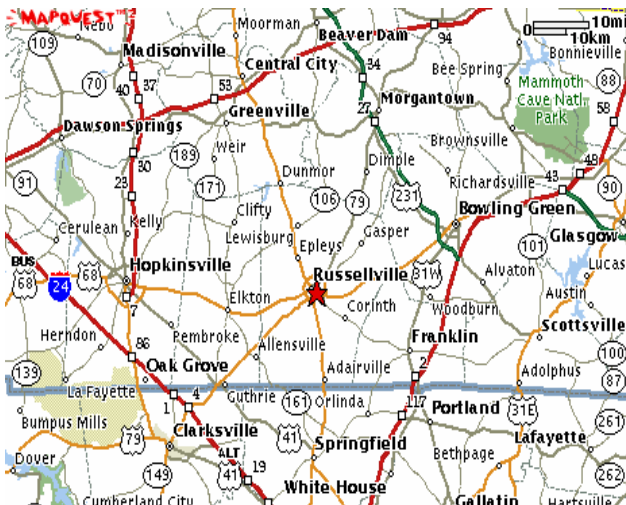
Apr. 1- Kentucky Goat and Sheep Tel-O-Auction, Consign by 4:30 pm March 31, Deliver Sat. April 3, 8:00 am – 11:00am EST at United Producers Irvington

May 6 - Kentucky Goat and Sheep Tel-O-Auction, Consign by 4:30 pm, May 5, Will have two delivery points

1. Sat. May 8, 8:00 – 11:00 am CST, Mayfield Auction Barn, Mayfield KY
2. Wed, May 12, 8:00 am -12:00 pm, EST United Producers Paris Stockyards. This delivery will also serve as the Central Kentucky Lamb and Goat Pen Show and Sale

Extension Activities March - April

1. **March 30-**Goat Nutrition and Parasite Management, Greenup Co. Extension Office, Main St. Greenup KY, 606-473-9881
2. **April 19-20: Bi-State Goat Meeting, Cayuga, IN 4-H grounds.** It is on IN Hwy 63, and is about 30 miles north of Terre Haute, IN. contact: Lisa Ellis, University of Illinois Extension, 210 W. Washington Street Paris, IL 217/465-8585
3. **April 1: Goat Marketing Workshop,** Morehead State University Farm, 7:00 pm EST, Contact Bob Marsh UK-CES, 606-784-5457
4. **April 5: Goat Marketing Workshop,** Irvine KY, 7:00 pm EST, Contact Eric L. Baker, CES 606-723-4557



Goat Workshop

Utilization of Goats as a Vegetation Management Tool in Hardwood Forest of Kentucky Russellville KY - April 15

Map to Russellville KY

2004 Tel-O-Auction Dates
Contact: Tess Caudill KDA (502-564-4983)

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