

Virginia Cooperative Extension

A partnership of Virginia Tech and Virginia State University



Animal & Poultry Sciences (0306)

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Livestock Update

Beef - Horse - Poultry - Sheep - Swine

June/July 2010

This LIVESTOCK UPDATE contains timely subject matter on beef cattle, horses, poultry, sheep, swine, and related junior work. Use this material as you see fit for local newspapers, radio programs, newsletters, and for the formulation of recommendations.

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Dates to Remember

BEEF

AUGUST

- 16-17 Tri-State Stocker Conference. Abingdon. Contact: Scott Greiner, (540) 231-9159,
email: sgreiner@vt.edu

GENERAL

OCTOBER

- 29 16th Annual Hokie Harvest Sale. Alphin-Stuart Arena. VA Tech Campus. Blacksburg.
Contact: Dan Eversole (540) 231-4738, email: deversol@vt.edu

HORSE

SEPTEMBER

- 16-19 State 4-H Horse and Pony Show. Virginia Horse Center. Lexington, VA
Contact: Celeste Crisman, (540) 231-9162, email: ccrisman@vt.edu or Joi Saville,
(540) 231-2257, email: joi.saville@vt.edu
- 25-26 State Fair Horse Show Competition. Doswell. Contact: Eleszabeth E. McNeel, email:
e7aquila@aol.com

SHEEP

AUGUST

- 28 Sheep Field day. Shenandoah Valley AREC. Steeles Tavern. Contact: Scott Greiner,
(540) 231-9159, email: sgreiner@vt.edu
- 28 Virginia Performance Tested Ram Lamb Sale. Shenandoah Valley AREC. Steeles Tavern.
Contact: Scott Greiner, (540) 231-9159, email: sgreiner@vt.edu

SEPTEMBER

- 4 11th Annual Virginia Tech Sheep Center Production Sale. Alphin-Stuart Arena. Contact:
Contact: Scott Greiner, (540) 231-9159, email: sgreiner@vt.edu

June Beef Management Calendar

Dr. Scott P. Greiner
Extension Animal Scientist, VA Tech

Spring Calving Herds

- Finish AI; turn out clean-up bulls
- Check bulls regularly for performance and injury
- Manage first-calf heifers separately; give them best forage and supplement
- Use 48 hour calf removal for thin cows and first-calf heifers at beginning of breeding season
- Continue feeding high magnesium minerals to prevent grass tetany; may be able to switch to high Se
- Administer mid summer deworming, and implant calves late in month or early next month
- Complete harvest of first cutting hay early in month
- Start grazing warm season grasses

Fall Calving Herds

- Body condition score cows; plan nutrition and grazing program based on BCS
- Administer mid summer deworming on replacement heifers and pregnant heifers
- Plan marketing program for calves
- Finalize calf crop marketing program
- Vaccinate, wean, and certify calves to be marketed in late summer
- Switch to high selenium trace mineral salt
- Start grazing warm season grasses

Understanding and Coping with Summer Slump

Dr. Mark A. McCann
Extension Animal Scientist, VA Tech

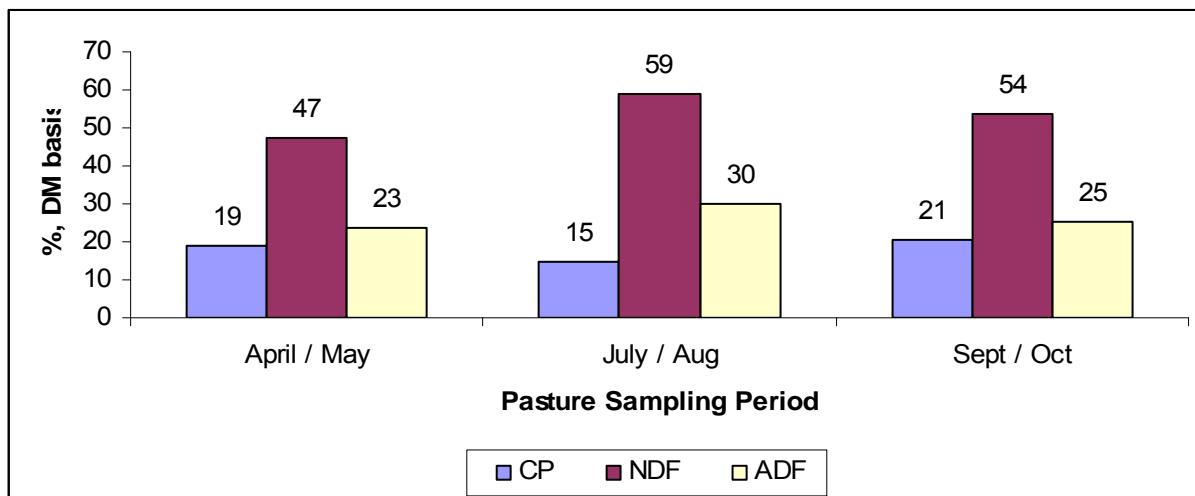
As beneficial as late spring moisture has been for Virginia pastures and cattle performance, everyone typically cringes at the thought of the heat and many times the dryness of our July and August. This seasonal decline in pasture and cattle performance during this period is usually called “summer slump”. Infected Kentucky 31 tall fescue gets most of the blame and is certainly a major contributor, but there are other factors in addition to fescue toxicity that come into play and contribute to this seasonal slump.

Most Virginia forage programs are based on cool season perennials such as tall fescue, orchardgrass and bluegrass. These grasses are most productive at temperatures of 60-80 °F and production will decline at temperatures above 80°F, even when moisture is adequate. This depression gets worse if accompanied by low rain fall. This general response in tall fescue is related to growth habit and not endophyte status. In fact, fungus infected tall fescue has demonstrated that it is more resistant to drought than fungus-free varieties. One of the characteristics of this grouping of grasses is their lower performance and lower nutrient content during hot weather. Tall fescue quality, as measured by forage analysis, has shown a seasonal change in sugar content and digestibility. Protein content in green, leafy tall fescue leaves can be high throughout the season (Table 1). Digestibility and sugars are highest in fall, intermediate during spring, and lowest in summer. Palatability follows essentially the same trend as digestibility and sugar content (i.e., most palatable in fall, least in summer, and intermediate in spring).

Table 1. Seasonal composition and digestibility of tall fescue

	Spring	Summer	Fall
Sugars, %	9.5	8.5	19
Crude Protein, %	22	18	19
D.D.M., %*	69	66	74

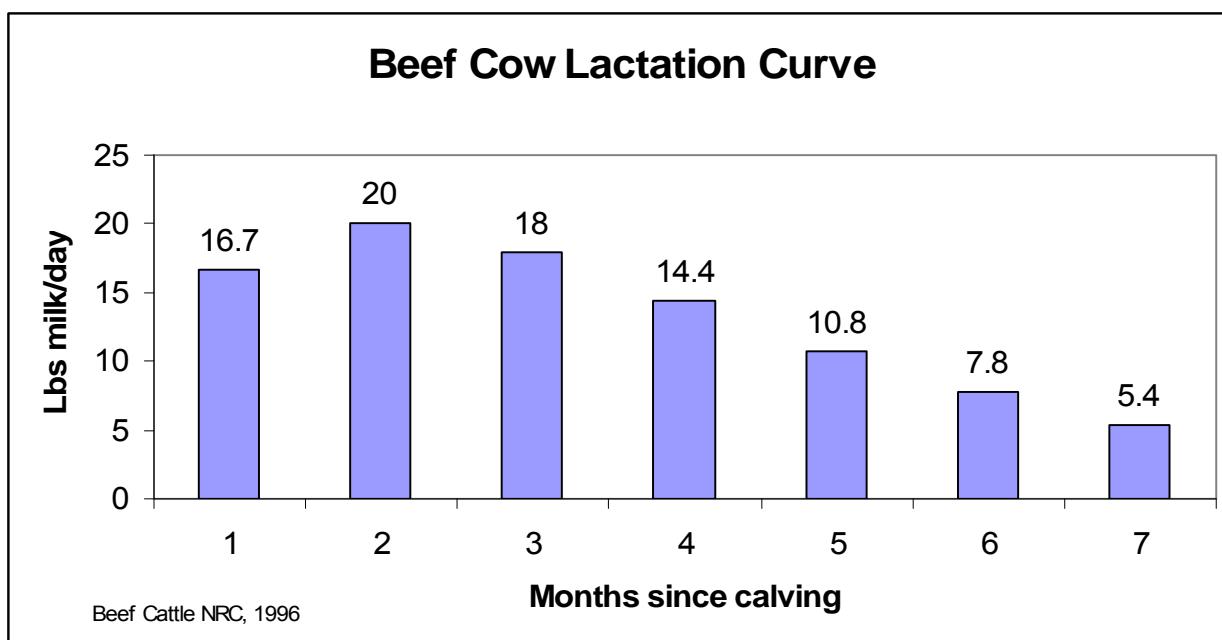
*Digestible Dry Matter. Lacefield et al., 2003



Pasture hand samples of endophyte-free fescue at the Kentland research farm during the 2009 grazing season would follow a similar pattern with the lowest crude protein and highest fiber values during the months of July and August.

Legumes such as ladino clover, red clover and alfalfa are more tolerant of warm temperatures and can contribute to the forage on offer if they are present in the pasture mix. The presence of legumes or other grasses in cool season pastures can be impacted by the management of the spring flush of grass growth. Tall standing forage can shade out clovers and other contributing plants. Tall fescue is more prone to do this due to its combination of height and density. Managing this spring flush through grazing management and/or harvesting excess growth as hay is important to maintain clover stands and allow other summer grasses to contribute (crabgrass, bermudagrass, etc) to the forage mix.

For spring born calves, another potential contributing factor to a summer slump is the stage of milk production of their dam which is illustrated in the following figure.



To add further context to the lactation curve above, keep in mind that the calf receiving 20 lbs of milk/d probably weighed 150 lbs and the calf receiving a far smaller amount of milk at 6-7 should weigh 400-500 lbs. Therefore the performance of the 6-7 month old calf is much more of a reflection of the forage quality and quantity on offer than their limited milk intake. Unfortunately, for spring born calves, this corresponds to July and August summer slump in forage growth and nutrient content.

The negative impact of endophyte infected tall fescue compounds and intensifies the previously discussed forage growth and cow lactation issues. Most researchers agree that the toxins responsible for tall fescue toxicosis are ergot alkaloids, a class of compounds produced by the endophyte. Ergot alkaloids are highly concentrated in the seed, though they can be measured in the leaf and stem tissue as well. The effects of the toxins are most visible during the summer months.

Grazing activity and forage intake are depressed on endophyte infected pastures during the summer months which lead to reduced cattle performance.

Management suggestions:

- 1) The age old suggestion for diluting infected tall fescue still works. The dilution can be other grasses, legumes or even supplemental feed, anything that takes the place of infected tall fescue.
- 2) Managing pastures through clipping or grazing management to reduce seed heads and stems which contain higher toxin levels. These management practices will produce a more open forage canopy which will prevent shading of diluting forages such as clovers and warm season grasses.

Beef Cattle Reproduction Symposium Scheduled August 5 and 6 in Nashville, TN

Dr. Scott P. Greiner
Extension Animal Scientist, VA Tech

Nashville, Tennessee – Cow-calf producers find themselves challenged by rising input costs. Given the magnitude of increased expenses, producers are intently focused on the bottom line while seeking both economic and production efficiencies. In response the University of Tennessee and the Beef Reproduction Task Force is sponsoring the 2010 Applied Reproductive Strategies in Beef Cattle from August 5 and 6 in Nashville, Tennessee.

This symposium will inform producers on cutting edge reproductive strategies. The speakers will provide the knowledge needed to improve herd productivity and decrease input costs by shortening the calving and breeding season. The symposium will also help producers understand how to improve overall reproductive management through enhancement of both male and female reproduction, as well as innovations in protocols such as estrous synchronization.

The presenters represent leading educational and research institutions and will share their knowledge on the latest topics of cattle reproduction.

Program details and registration are available at <http://westcentral.unl.edu/beefrepro/>.

Contact Information

More Information is available by contacting Justin Rhinehart, University of Tennessee, (615) 835-4561, jrhinehart@utk.edu ; or Cliff Lamb, (850) 394-9124, gclamb@ufl.edu

The symposium is sponsored by the University of Tennessee and the Beef Reproduction Task Force, which is comprised of Extension animal scientists from Kansas State University, University of Nebraska, South Dakota State University, Iowa State University, University Of Idaho, University of Illinois, University of Florida and University of Missouri with support from several other industry sponsors.

Tri-State Stocker Conference To Be Hosted August 17-18

Dr. Scott P. Greiner
Extension Animal Scientist, VA Tech

A Tri-State Stocker Conference will be held at the Washington County Fairgrounds in Abingdon, Virginia on August 17-18. The two-day program will include a tour of local stocker operations on the afternoon of the Tuesday, August 17. An evening meal and speaker will immediately follow the tour. The main educational program will be on Wednesday, August 18th with sessions on Managing the Health of Purchased Stocker Calves, Cattle Market Outlook, Livestock Risk Protection Insurance, Managing Pastures for Stocker Cattle, Considerations in Buying Stocker Cattle and How to Work With an Order Buyer. As part of the program, a panel of stocker operators will share information about their enterprises. A trade show will accompany the conference, and include representatives from agribusiness firms supporting the stocker business including animal health and equipment companies, feed suppliers, marketing agencies, lending institutions and related businesses. The meeting is being sponsored by Virginia Cooperative Extension, University of Tennessee Extension and North Carolina Cooperative Extension. Registration information and complete details will be available through local County Extension Offices after July 1. Additional information can be obtained from Dr. Scott Greiner, Extension Beef Specialist, Virginia Tech, phone 540-231-9163 or email sgreiner@vt.edu.

Details Announced for 2010-11 **Virginia BCIA Central Bull Test Station Program**

Joi D. Saville
Beef Extension Associate, VA Tech

The Virginia Beef Cattle Improvement Association will begin its 53rd year of sponsoring the Virginia's Central Bull Test Station Program. Rules and regulations for the 2010-11 test and sale season are now available through Virginia BCIA. A total of three test groups of bulls will be developed and sold from the two stations located at Culpeper and in Southwest Virginia.

The Culpeper Senior test is conducted at Glenmary Farm in Rapidan, VA owned and operated by Tom and Kim Nixon. The Southwest Bull Test Station is located at Hillwinds Farm owned by Tim Sutphin of Dublin, Virginia. At the Culpeper station, a set of fall-born Senior bulls will be developed. The Southwest Test Station will develop both a set of fall-born Senior bulls, as well as spring-born Junior bulls. In addition to the traditional tests, the opportunity exists for breeders to custom feed bulls through the BCIA program so that contemporary groups may be maintained. Additionally, provisions to the program allow breeders flexibility in developing both sale-eligible and custom tests bulls. The following table provides details of age requirements, entry deadlines, and the test and sale schedule for each group of bulls.

CULPEPER SENIOR BULLS	
Birth Dates	August 15 – November 30, 2009
Entry Deadline	June 15, 2010
Delivery of Bulls	June 30, 2010
Start Test	July 12 & 13, 2010
Finish Test	November 1 & 2, 2010 (112 days)
Sale	Saturday, December 11, 2010

	SOUTHWEST SENIOR BULLS	SOUTHWEST JUNIOR BULLS
Birth Dates	September 15 – December 31, 2009	January 1 – March 31, 2010
Entry Deadline	September 10, 2010	September 10, 2010
Delivery of Bulls	October 5, 2010	October 5, 2010
Start Test	October 18 & 19, 2010	October 18 & 19, 2010
Finish Test	February 7 & 8, 2011 (112 days)	February 7 & 8, 2011 (112 days)
Sale	Saturday, March 26, 2011	Saturday, March 26, 2011

Again this year, we will feature the enhanced bull guarantee which covers fertility, structural soundness problems (including foot soundness), and other issues on all bulls sold through the program. To compliment this good-faith guarantee, fall-born senior bulls will be subject to a semen evaluation as part of breeding soundness exam required for sale eligibility. Volume discounts will be available to bull buyers purchasing three or more bulls at a BCIA bull sale.

Registered bulls of any recognized beef breed, or recorded percentage bulls of breeds which have an open herd book are eligible for the central tests. All bulls must be recorded in their respective breed

association, and have a complete performance record (including EPDs). Bulls must also meet breed-specific minimum YW EPD requirements, individual performance specifications, as well as pre-delivery health and management protocol to be eligible for the tests.

Breeders in Virginia and bordering states who are members of Virginia BCIA are eligible to consign bulls. For details and copies of the rules and regulations as well as entry information regarding the central bull tests, contact the Virginia BCIA office at 540-231-9163 or visit <http://www.bcia.apsc.vt.edu>.

Virginia BCIA Central Bull Test Program Summary 2009-10

Dr. Scott P. Greiner
Extension Animal Scientist, VA Tech

The Virginia Beef Cattle Improvement Association recently completed its 52nd year of bull development and merchandising through the state central bull test stations. The 2009-10 test and sale year included the development of 300 total bulls, with 179 bulls selling through two sales for an average price of \$2150. This compares to average prices of \$2054 and \$1994 in 2008-09 and 2007-08, respectively.

This was the 52nd consecutive year for the Culpeper station, operated by Glenmary Farm, Tom and Kim Nixon owners, of Rapidan, Virginia. In the fall-born Senior group at Culpeper, 93 bulls were tested and had an ADG of 4.13 and an adjusted yearling weight of 1205. There were not any bulls developed in the spring-born Culpeper Junior Bull Test. The Southwest Bull Test was in operation for the 31st year, with development of the bulls provided by Hillwinds Farm, Tim and Cathy Sutphin of Dublin. The bulls evaluated at the Southwest station included 102 fall-born Senior bulls and 105 spring-born Juniors. The Senior bulls recorded a test ADG of 3.33 with an adjusted yearling weight of 1123, while the Junior bulls had a 3.27 ADG and 1175 pound adjusted yearling weight. Across the two stations and three test groups ranging in length from 112 to 133 days, the 300 total bulls averaged 3.56 ADG and 1167 adjusted yearling weight. These 300 bulls included 222 Angus, 23 Purebred Simmental, 26 Simmental Hybrids, 11 Gelbvieh, 9 Gelbvieh Balancers, 7 Charolais and 2 Polled Hereford.

Two sales were held for eligible bulls. The Culpeper Senior sale was held in mid-December and the Southwest sale in late March. The following table presents sale averages by breed. Of the 179 bulls sold, 157 were purchased by Virginia buyers and 22 (8.1%) sold out of state to cattlemen in Maryland, Tennessee, North Carolina, and West Virginia.

2009-2010 VA. BCIA CENTRAL BULL TEST STATION SALE AND BREED AVERAGES

	Culpeper Sr.	SW Virginia	TOTAL	
Angus	49 \$1,944	81 \$2,226	130	\$2,120
Charolais	-----	6 \$1,517	6	\$1,517
Gelbvieh	-----	4 \$1,725	4	\$1,725
Gelbvieh Bal.	3 \$2,050	4 \$2,400	7	\$2,250
P. Hereford		1 \$2,150	1	\$2,150
Simmental	-----	14 \$2,129	14	\$2,129
Simm. Hybrid	-----	17 \$2,682	17	\$2,682
2009-10 Totals	52 \$1,950	127 \$2,232	179	\$2,150
2008-09 Totals	51 \$2,061	133 \$2,125	205	\$2,054
2007-08 Totals	65 \$1,777	135 \$2,180	238	\$1,994

Average total test and sale costs for bulls fed and sold during the 2009-10 season was \$966 (all-inclusive from delivery through sale), for an average return of \$1184 per head after all expenses to the consignor. Partitioning total costs, test costs averaged \$572 (112 to 133 day feeding period) and post-test/sale costs averaged \$394 per head (sale expenses averaged 10.1% of sale price).

A total of 51 breeders participated in the Central Bull Test Station program last year. There were 41 Virginia breeders, and a total of 10 from the surrounding states of Maryland, North Carolina, Tennessee, District of Columbia and West Virginia. Several breeders participated in multiple tests and sales.

All bulls tested and sold were consigned by breeders who are members of the Virginia Beef Cattle Improvement Association. Virginia BCIA was the first state beef cattle improvement association organized in 1955. For a more detailed summary of this information or information on the upcoming Virginia BCIA Central Bull Test Station program contact the Virginia BCIA office at (540) 231-9163 or visit <http://www.bcia.apsc.vt.edu>.

2010 State Fair of Virginia Youth Market Lamb, Commercial Ewe Lamb, Youth Market Goat and Market Beef Nomination Schedule

Joi Saville
Beef Extension Associate, VA Tech

Locations for identification of lambs, goats, and market beef animals for the 2010 State Fair of Virginia Youth Shows have been set. Nominations will take place at various locations around the state in late June. All youth who plan to exhibit market lambs, commercial ewe lambs, market goats and/or market steers or market heifers at the 2010 State Fair of Virginia are required to bring their animals to one of the following sites for identification:

Date & Time	Location (for directions please call site contact person)
<u>Shenandoah Valley – Contact Person: Jason Carter, (540) 245-5750, jhcarter@vt.edu</u>	
Tuesday, June 15 3:00 – 7:00 p.m.	Virginia Tech Shenandoah Valley Ag Res. & Ext. Center Steeles Tavern, VA
Saturday, June 19 9:00 – 11:00 a.m.	Rockingham Livestock Market Harrisonburg, VA
<u>Northern Virginia – Contact Person: Corey Childs, (703) 777-0373, cchild@vt.edu</u>	
Monday, June 28 6:00 – 8:00 p.m.	Clarke County Fairgrounds Berryville, VA
<u>Central Virginia – Contact Person: Brad Jarvis, (540) 948-6881, bjarvis@vt.edu Kelly Mallory, (540) 948-6881, kemallo1@vt.edu</u>	
Monday, June 21 11:00 a.m. – 12:00 noon	Young Farmers Grounds Madison, VA
<u>Southside Virginia – Contact Person: Todd Scott, (434) 332-9538, todds08@vt.edu</u>	
Friday, June 25 (MKT BEEF CALL AHEAD) 9:00 – 11:00 a.m.	Appomattox High School Appomattox, VA
<u>Southwest Virginia – Contact Person: Matthew Miller, (276) 783-5175, mamille6@vt.edu Jason Pratt, (540) 980-7761, cipratt@vt.edu</u>	
Thursday, June 17 (MKT BEEF CALL AHEAD) 5:00 – 7:00 p.m.	Southwest Virginia 4-H Center Abingdon, VA
Thursday, June 24 6:00 – 7:00 p.m.	Virginia Tech Alphin-Stuart Livestock Arena Blacksburg, VA
Monday, June 28 (LAMBS ONLY)	In conjunction with Southwest VA Lamb Symposium New River Valley Fairgrounds, Dublin, VA
<u>Tidewater Region – Contact Person: Cynthia Gregg, (434) 848-2151, clgregg@vt.edu</u>	
Thursday, June 17 4:30 – 6:00 p.m.	Southside Livestock Market Blackstone, VA
Wednesday, June 30 (LAMBS/GOATS ONLY) 4:30 – 6:30 p.m.	Virginia Tech Tidewater Center Research Farm near Holland, VA
<u>Northern Neck Region – Contact Person: Kelly Liddington, (804) 333-3420, klidding@vt.edu</u>	
Tuesday, June 29 (<u>PLEASE CALL AHEAD</u>) 10:00 AM – 12:00 Noon	Richmond County Extension Office Warsaw, VA

Nomination procedures:

- 1) Lambs/goats will be ear tagged and weighed, cattle will be ear tagged (weighing is optional for cattle only). Nomination forms will be completed by exhibitors.
- 2) Exhibitors may take lambs, goats and/or cattle to any nomination location. Exhibitors must take all of their animals of the same species to the same nomination location.

- 3) A maximum of 12 lambs may be nominated per exhibitor (wethers or ewes, to be shown as either market lambs or commercial ewe lambs- no designation required at time of nomination). A maximum of 8 goats may be nominated per exhibitor (wethers or does, to be shown as market goats). No maximum for number of market steers or market heifers nominated per exhibitor.
- 4) Lambs, goats and cattle must also be properly entered for the State Fair. Entries are due August 15. State Fair entry and competition guides may be accessed on-line at www.statefair.com. **All State Fair entries must be completed on-line.** Weighing and identification at these locations does not constitute final entry for State Fair.

For further information:

Youth Sheep Show contact Dr. Scott Greiner, Virginia Tech, phone 540-231-9159, e-mail sgreiner@vt.edu

Youth Beef Show contact Dr. Mark Wahlberg, Virginia Tech, phone 540-231-9161, e-mail wahlberg@vt.edu

Youth Goat Show contact Mike Holland, Youth Goat Superintendent, phone 757-373-3348, e-mail HollandFrm@aol.com

Managing Internal Parasites

Dr. Scott P. Greiner
Extension Animal Scientist, VA Tech

A significant health issue faced by sheep producers in the Mid-Atlantic region is internal parasites. As the level of parasite drug resistance increases, control programs based solely on anthelmintic drugs are becoming less effective. The prevalence of drug resistant worms is increasing, and new drug products to control worms are generally not available.

The most important worm parasites reside in the stomach and intestine. They are nematodes and belong to a family called trichostrongyles. Throughout the U.S., and especially in the mid Atlantic and southern states, the most important member of this family is the barber pole worm (*Haemonchus contortus*). The barber pole worm is a bloodsucking parasite that causes anemia, leading to poor performance and frequently death. Bottle jaw is a result of *H. contortus* infection, but unlike other parasites *H. contortus* does not usually cause diarrhea.

In order to effectively control parasites, it is important to understand the life cycle of the parasite. Adult female worms produce eggs that are passed in manure. Larvae hatch, and go through several stages of development in the environment before they infect the next host. During the warm months of the year enormous numbers of larvae can build up on pastures. Virtually all worms need pasture for successful development; as they do not survive well on dirt lots or in the barn. The success of larvae outside the host depends on the climate. Moisture and warmth are necessary for development and survival. Dry weather is very hard on these larvae once they are out on the grass. *Haemonchus* larvae also undergo a process called *arrested development* where they sit quietly in the stomach following infection and don't develop into adults until several months later. This is an important adaptation for keeping the worm population viable through cold winters when eggs and larvae don't survive well on pasture. The worms that became arrested in the fall resume development in the spring and reproduce. Parasites are an animal health issue accompany raising sheep. Since we cannot eradicate them completely, the goal is to maintain the parasites at a level that will not produce significant illness or economic loss.

Drug resistant *Haemonchus* are widespread throughout the world in sheep and goats and the problem has increased in the U.S. Drug resistance in parasites has been demonstrated to be passed from one generation of worms to the next. As the proportion of resistant worms increases generation after generation, effectiveness of drug for treatment is likewise reduced. Continuous exposure of a population of worms to the same drug has also been demonstrated to hasten resistance. Drug resistance is not easily diagnosed in a flock, since drug ineffectiveness is also caused by such factors as under dosing, using expired drugs, inappropriate administration, and very high levels of parasitism (fast reinfection due to high worm loads on pastures). Often, resistance is not readily obvious until a drug is virtually ineffective and significant losses in production or even deaths occur.

The quantitative method of determining resistance is to perform a Fecal Egg Count Reduction Test. This process involves collection of initial fecal samples from approximately 10 sheep. The sheep are then dewormed, and 7-10 days later a second fecal sample is collected from the same sheep. Some untreated sheep should also be sampled at the same times. The number of parasite eggs is

counted in each set of fecal samples and the percentage reduction after treatment is determined. Fecal egg counts are currently not performed by the state labs. The parasitology lab at the Virginia-Maryland Regional College of Veterinary Medicine can assist producers with these tests (contact Dr. Anne Zajac, 540-231-7017, azajac@vt.edu).

Given the widespread development of resistance, steps should be taken to minimize and delay the onset of parasite resistance. The following procedures are important in minimizing and slowing down the development of parasite resistance:

- 1) Reduce the number of deworming treatments (see below).
- 2) Use the correct dose according to label directions and do not under dose. Divide sheep into weight categories, dose for the heaviest animal in each category.
- 3) Use a product that is fully effective. All of the available modern dewormers fall into 3 major groups of drugs- Benzimidazoles (BZD), Macrolides (also called macrocyclic lactones) and a third group referred to as nicotinic agents. Recognize which products are in each group because once worms become resistant to one member of the group, they will be resistant to the other members of the group.

Chemical Name	Family	Approved for Use in Sheep?	Trade Name
Fenbendazole	BZD	No	Safeguard
Albendazole	BZD	Yes (not first 30 days pregnancy)	Valbazen
Levamisole	Nicotinic	Yes	Tramisol
Pyrantel	Nicotinic	No	Strongid T
Ivermectin	Macrolide	Yes (drench only)	Ivomec
Doramectin	Macrolide	No	Dectomax
Moxidectin	Macrolide	Yes (drench)	Cydectin

Note: Some of the drugs listed here are not FDA approved for use in sheep and, as such, can only be used following consultation with your veterinarian with appropriate consideration of withdrawal times.

- 4) Administer dewormers carefully and be certain the animal ingests the product fully.
- 5) Hold sheep off feed or pasture for 12 to 24 hours before treatment (do not hold off water, only feed). By doing so, the drugs will not pass so quickly through the GI tract, and active levels will be maintained in the body longer.
- 6) Rotate dewormers on an annual basis. To reduce the selection for resistance it is best not to use any single drug group for too long.
- 7) Avoid bringing resistance on your farm through new sheep that are purchased. Always quarantine new animals and immediately deworm them with at least 2 drug classes. Keep them separated, preferably away from any pasture, for a week until no further eggs would be passed in the manure from imported drug resistant parasites.

As suggested earlier, an important step in controlling the development of resistance is to reduce the number of deworming treatments. By reducing the number of treatments, the goal is to reduce the number of worms that are exposed to the drug and reduce their selection for resistance. One method of reducing the number of dewormings is to monitor eye color. Infection with the blood-

sucking results in anemia which can be diagnosed by pale mucous membranes around the eye. A South African researcher has produced an eye color chart, called the FAMACHA system, in which sheep are checked on a regular basis and the color of the mucous membranes is checked against a chart that then directs which sheep should be treated. This system has attained popularity in the U.S. Secondly, reducing stocking density will likely reduce the number of dewormings since the parasites will effectively be spread over a larger area. Thirdly, research has demonstrated that animals on a high nutritional plane are more resistant to the adverse effects of parasites than those on marginal diets. Protein and minerals, as well as energy, are important in resisting the effects of barber pole worm because new red blood cells must be generated to replace those lost to the parasites. Using the sheep's natural immunity to parasites will also be beneficial. Levels of resistance vary with age and reproductive condition, with lambs the most susceptible and ewes in early lactation generally more susceptible than dry ewes. Concentrate worm control efforts on the sheep that need it the most (lambs). The pasture with the lowest number of parasite larvae should be used for ewes and lambs, not for rams or dry ewes. Similarly, pasture management will reduce parasite loads. Rested pastures and pastures that have been recently cut for hay generally have fewer parasites. The most susceptible animals should graze these pastures first. Grazing with cattle or horses also can be effective; as most parasites are species-specific will not infect other animal species. Lastly, consider genetic selection as a component of the parasite control program. In any population of sheep there will be some highly resistant sheep and some very susceptible sheep, which is likely related to the immune response of the animal. You should eliminate the highly susceptible animals from your flock (sheep that always develops bottle jaw before the others). Some sheep breeds, especially the Caribbean hair sheep breeds, exhibit natural resistance to gastrointestinal nematodes.

Sheep Update
Dr. Scott P. Greiner
Extension Animal Scientist, VA Tech

2010 Virginia Ram Lamb Performance Test

A total of 50 rams were delivered May 5 to the Virginia Sheep Evaluation Station located at the Shenandoah Valley Agricultural Research and Extension Center near Steeles Tavern, VA. Consignment numbers and breeds of rams consigned include: 29 Winter Suffolk, 6 Fall Dorset, 4 Winter Dorset, 6 Winter Hampshire, and 5 Winter Katahdin. The rams began the 63-day test period on May 19, which will conclude July 21. At the completion of the test, rams will be evaluated for reproductive and structural soundness. Eligible rams will sell at the station on Saturday, August 28. Complete performance information will be available on all rams, including measures of growth performance, ultrasonic estimates of carcass merit, and scrapie resistance genotypes. For information, please contact Dr. Scott Greiner, phone 540-231-9163 or email sgreiner@vt.edu.

Sheep Field Day and Ewe Lamb Sale to be Hosted at Shenandoah Valley AREC

An educational field day will be hosted at the Virginia Sheep Evaluation Station located on the Virginia Tech Shenandoah Valley AREC on Saturday, August 28. The field day will accompany the annual performance tested ram lamb sale. In addition, a consignment ewe lamb sale will be held in conjunction with the ram sale. Approximately 50 ewe lambs will be offered along with the performance tested rams. Producers interested in consigning ewe lambs or wanting further information on the field day or ram and ewe sale can contact Dr. Scott Greiner, phone 540-231-9163 or email sgreiner@vt.edu.

2010 Virginia-North Carolina Wool Pool

Producers in Virginia and North Carolina interested in marketing their wool through local wool pools will have the opportunity to do so through Mid-States Wool Growers Cooperative Association based in Canal Winchester, Ohio. Producers are encouraged to package, handle and store their wool in an appropriate manner in order to maximize the value of their wool clip. Wool should be packaged by type and grade (ewe vs. lamb wool, long staple vs. short wools, fine vs. medium wools) in plastic bags, and be clean, dry, and have foreign material (straw, mud, manure) removed prior to packaging. Following is a list of local pool delivery dates, and locations where wool will be picked up:

July 1	Orange, VA
July 1	Rice, VA
July 6	Albemarle, NC
July 7	Asheville & Williamston, NC
July 8	Sparta, NC
July 14	Wytheville, VA
July 15	Christiansburg, VA
July 19	Russell Co., VA
July 20	Tazewell Co., VA
July 22	Clarke Co., VA
July 23	Augusta Co., VA

To confirm the above dates, and for more information regarding specific times and locations, contact your local Virginia Cooperative Extension Office.

Proper Wool Handling

Proper harvesting, packaging, and storage of the wool is important to realize the full value of the wool clip. Since wool sales represent a very small portion of the gross returns for most sheep enterprise, wholesale changes to the genetics of the flock to improve fiber diameter and fleece weight are likely not justified for most Mid-Atlantic producers. However, there are several important steps that should be considered to maximize the value of the wool clip:

A. Minimize Contamination:

1. Keep shearing area clean and free of straw/hay and other potential sources of contamination.
2. Avoid use of plastic baler twine in sheep operation that may contaminate fleeces (this contamination occurs throughout the year, not just at shearing time).

B. Use Proper Packaging Material:

1. Do not use plastic feed sacks to store or package wool.
2. Plastic film bags are available and preferred. Points to consider with plastic film bags:
 - a. Sheep need to be dry when sheared. Plastic bags will not breathe as well as jute bags (more possibility for wool to mold and rot).
 - b. Plastic film bags will tear easier when handled.
 - c. Tie plastic film bags shut in similar manner to jute bags.
3. Store wool in dry place, avoid cement or dirt floors to prevent moisture uptake.

C. Sort Wool at Shearing Time:

1. Shear white-face sheep first, blackface sheep last to avoid contamination of white-faced wool with black fibers.
2. Package lamb and ewe wool separate.
3. Remove tags at shearing and discard.
4. Sort belly wool and bag separately. Also sort wool caps and leg wool out if justified.
5. Off-type fleeces (black, high vegetable matter, etc.) as well as belly wool should be packaged first in a small plastic garbage bag or paper sack. The small bag may then be added to the large polyethylene film bag. The small bag serves to keep these wools separate and prevents them from contaminating other fleeces already packaged, and results in a more uniform lot of wool.
6. Do not tie wool with paper twine.