Virginia Cooperative Extension
A partnership of Virginia Tech and Virginia State University

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Livestock Update

Beef - Horse - Poultry - Sheep - Swine

January 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.

IN THIS ISSUE:

Scott P. Greiner, Extension Project Leader
Department of Animal & Poultry Sciences
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Dates to Remember

BEEF

JANUARY

14 Beef Webinar. ***Contact:*** Mark McCann, (540) 231-9153, email: mmccnn@vt.edu

FEBRUARY

11-12 VA Beef Industry Convention. Roanoke. ***Contact:*** Bill McKinnon, (540) 992-1009 email: bmckinnon@vacattlemen.org

18 Beef Webinar. ***Contact:*** Mark McCann, (540) 231-9153, email: mmccnn@vt.edu

MARCH

18 Beef Webinar. ***Contact:*** Mark McCann, (540) 231-9153, email: mmccnn@vt.edu

21 VA BCIA Southwest Bull Test Open House. Dublin. ***Contact:*** Scott Greiner, (540) 231-9159, email: sgreiner@vt.edu

27 VA BCIA Southwest Bull Test Sale. Wytheville. ***Contact:*** Scott Greiner, (540) 231-9159, email: sgreiner@vt.edu

APRIL

16-18 VA Beef Expo. Harrisonburg. ***Contact:*** Bill McKinnon, (540) 992-1009, email: bmckinnon@vacattlemen.org

HORSE

FEBRUARY

19-20 B&B Hippology Contest and Horse Judging Contest. Alphin-Stuart Arena. Blacksburg. ***Contact:*** Julia McCann, (540) 231-7384, email: jsmccann@vt.edu

APRIL

9-11 State 4H/FFA Horse Judging and 4H Hippology, Horse Bowl and Presentations. Location to be determined. ***Contact:*** Celeste Crisman, (540) 231-9162, email: ccrisman@vt.edu

SHEEP

JANUARY

8-9 VA Sheep Symposium and Sheep Management 101 Workshop. VA Tech. Blacksburg. ***Contact:*** Scott Greiner, (540) 231-9159, email: sgreiner@vt.edu

20-23 American Sheep Industry Convention. Nashville, TN. ***Contact:*** Scott Greiner, (540) 231-9159, email: sgreiner@vt.edu

January Beef Management Calendar

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

Spring Calving Herds

- Begin to gather calving supplies
- Keep late pregnant cows gaining 1.0 lbs per day
- Pregnant heifers and 3 yr olds should gain 2.0-2.5 lbs per day
- Conduct forage tests if not done earlier this year
- Keep high quality minerals available
- Review calving assistance procedures
- Stockpile a few gallons of colostrum
- Evaluate herd performance and breeding program - establish selection goals for bulls to be purchases (or AI sires)
- Soil test pastures not tested in last 3 years
- Order clover seed for frost seeding later this winter

Fall Calving Herds

- Begin/continue breeding
- Check cow and bull body condition
- Supplement energy to young bulls during breeding season
- Conduct forage tests if not done earlier this year
- Continue to check calves closely for health problems
- Re-implant September and early October born calves that were implanted at birth
- Soil test pastures not tested in last 3 years
- Order clover seed for frost seeding later this winter

Crossbreeding - Its Cool Again! Part 2

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

Note: This article is Part 2 in a three part series dealing with crossbreeding.

Part 1 of this series dealt with the fundamental principles of crossbreeding. The primary advantages of crossbreeding beef cattle are heterosis (hybrid vigor) and breed complimentarity. The power of crossbreeding results from the advantages of the crossbred cow, due to her advantages in fertility, weaning weights, and longevity. In fact, 60% of the advantage of crossbreeding is realized through the crossbred cow. In addition, individual heterosis exhibited in the calf results in increased livability coupled with an increase in growth rate. Breed complimentarity provides the opportunity to capture the strengths of various breeds, and enables selection of individual animal within those breeds for specific purposes. The key element to the success of any crossbreeding program lies in its application. This article will focus on the design and management of crossbreeding systems, with specific attention on the application for small and modest-sized herds.

The success of a crossbreeding program will depend on its simplicity and ease of management. There are several factors and challenges that need to be considered when evaluating choice of crossbreeding system, including:

1) Number of cows in the herd
2) Number of available breeding pastures
3) Labor and management
4) Amount and quality of feed available
5) Production and marketing system

The design of any crossbreeding program should take advantage of both heterosis and breed complimentarity. The goal of a crossbreeding program should be to 1) optimize heterosis in both the calf crop and most importantly in the cow herd heterosis), 2) utilize breeds and genetics that fit the feed resources, management, and marketing system of the operation, and 3) is easy to apply and manage, and is sustainable over time.

Two-Breed Rotational Cross

The two-breed rotational cross or criss-cross is a relatively simple and popular form of crossbreeding. In this system, two breeds are mated and the resulting female offspring are kept as replacements and mated to one of the breeds. In following generations, females are bred to the opposite breed of their sire. For example, with an Angus and Simmental were two-breed rotation, cows sired by Angus bulls would be mated to Simmental bulls and cows sired by Simmental bulls would be mated to Angus bulls. For their entire lives, females would be mated to the bull breed opposite their sire. This system would require a minimum of two breeding pastures (if only natural service is used), one for each breed of sire- and cows need to be identified by breed of sire. A critical component for this system is that the two breeds utilized must be reasonably compatible in biological type. Both breeds must be suitable as both sire and dam breeds. The two breeds utilized in this system should be similar in mature size, and individual bulls selected to avoid large differences in birth weight, milk production, and cow

size/nutritional requirements from one generation to the next (addressed in Part 3 of this series). Breed of choice when mating first-calf heifers is warranted, as calving ease needs to be a primary consideration. An advantage to this system is the use of the crossbred cow, with pounds of calf weaned per cow exposed increased approximately 15% compared to the average of the breeds used in the cross. Over several generations, 67% of the maximum amount of heterosis is realized. Additionally, there are a large number of heifers from which replacements may be selected.

The addition of a third breed as a terminal sire to a two breed rotational cross system can further enhance the system. In this rota-terminal system, approximately 50% of the cowherd is mated to the terminal sire breed (different breed than used in the two-breed rotation) with the resulting offspring all marketed (no replacement females retained from resulting mating). The other 50% of the cowherd operates as a two-breed rotation as outlined above. The two-breed rotation functions to produce all replacement females for the herd. Terminal sire breeds should be selected for calving ease, growth rate and carcass merit. Selection emphasis should concentrate on maternal performance, appropriate mature size, and longevity for the two breeds used to produce replacements. These selection criteria may simplify bull selection, and enhance the opportunity to specifically match genetics for their intended purpose. Older (> 4-5 years) and poorer producing cows are the best candidates for mating to the terminal sire. Younger cows should be genetically superior due to selection and should be used to produce the replacement females. The rota-terminal system has been shown to increase pounds of calf weaned per cow exposed by approximately 20%. Maximum heterosis is realized in the calves sired by the terminal breed, and advantages in maternal heterosis are realized as all females are crossbred. The rota-terminal system requires more management in that a minimum of three breeding pastures are required (assuming all natural service). Additionally, less selection may be practiced on potential replacements, as a larger percentage of the eligible heifers must be retained to maintain herd size. The rota-terminal system is difficult to apply herds with less than 100 cows.

Rotating Breeds of Sire

Rotating the breed of sire every three to four years may be a feasible crossbreeding option for producers who have small, single-sire herds. With this type of system two sire breeds are used in rotation by replacing sire breeds every three to four years. A greater number of breeds may be utilized over an extended period of time. In single sire herds, bulls may need to be replaced more frequently to avoid father-daughter matings. This system is relatively simple yet maintains an acceptable level of heterosis. Pounds of calf weaned per cow exposed is increased 10-15%, dependent upon the number of sire breeds used.

Utilizing Hybrid Bulls

The use of hybrid or composite bulls is another strategy to incorporate crossbreeding. Properly designed and selected composite bulls blend the strengths of the breeds utilized to form the composite. Advances in statistical methodology allow for direct comparison of EPDs published for composite bulls with EPDs published for purebred bulls of the same breed. In other words, we have the same selection tools at hand to properly select composites just as we do purebreds. One of the challenges with the use of purebreds in a crossbreeding scheme is the fluctuation in breed percentage of the cow herd resulting from females sired by different breeds (particularly early in a crossbreeding program). Composite bulls offer the opportunity to avoid this, while potentially reaching a desired breed mix in fewer generations. For example, assume the goal is to achieve a herd with 75% British and 25% Continental genetics. Starting with a straightbred

British cow herd, achieving the desired 75:25 breed mix would require two generations with purebred bulls, and only one generation with half-blood composite bulls. Research has established that variation composite populations is not greater than that found in purebred populations. Additionally, heterosis realized through the use of composites is retained in future generations when the same composite is used over time.

A major challenge to making a crossbreeding program work is keeping the system going over time, i.e. keeping the system well-planned and systematic without sacrificing optimum levels of heterosis and breed complimentarity. Purchasing of replacement females and the incorporation of an AI program are two means to assist with these challenges and have particular application for small herds.

Purchasing Replacement Females

The simplest, most manageable crossbreeding system utilizes purchased crossbred females mated to a third terminal sire breed. All calves are marketed in the system. Optimum heterosis can be realized in the cow, as well as the calf crop. There are several advantages to this system, especially for small cow herds. First of all, management becomes simplified as heifers no longer need to be grown, developed, and bred. Bred females may be acquired, which have been confirmed pregnant to highly proven bulls for calving ease and other economically important traits. Secondly, bull selection is simplified since these terminal sires will be not be mated to heifers, and maternal traits are not of interest. Sire selection can focus specifically on acceptable calving ease, and optimum growth and carcass merit. Additionally, only one breed of sire needs to be maintained. Remember that the health program, as well as the genetic package are both acquired from the heifer supplier. Of utmost interest is the economics of raising vs. purchasing replacement heifers. For many producers, purchasing females may be cost effective, especially when the contribution of the heifers to genetic progress of the herd is considered.

Use of Artificial Insemination

The use of artificial insemination may make the application of these described crossbreeding systems more feasible provided the expertise, labor, and facilities are available to make effective use of AI. The use of AI can significantly reduce the number of breeding pastures necessary for rotational cross or rota-terminal systems. Additionally, the use of AI may significantly reduce the number of bulls (and breeds) required for natural service. As an example, in a rota-terminal system the top 50% of the cows could be mated AI for the production of replacement females. Cows that did not conceive AI as well as the other 50% of the cows could be mated naturally to the terminal sire. This would reduce the number of breeding pastures required from three to one or two (depending on cow numbers). Additionally, in any system heifers could be bred AI to calving ease sires. Another major advantage to the use of AI is genetic improvement, as semen from top bulls in any breed could be utilized.

Improved productivity and efficiency is realized in commercial herds not only through a crossbreeding program, but also through sire selection. A well-implemented crossbreeding program does not diminish the importance of sire selection. In fact, appropriate sire selection is the key to making the system sustainable. In Part 3, we will examine more closely the importance of sire selection, and describe tools to use to make both across and within-breed selections.

Calves and the Cold

Dr. W. Dee Whittier
Extension Veterinarian, Cattle
VA-MD Regional College of Veterinary Medicine, VA Tech

Calf losses due to cold can result from both severely frost bitten parts as well as from freezing to death or hypothermia. Appropriate management can help cattle producers avoid many of these losses for those operations that have calves born during the cold season.

Frostbite is the damage to body tissues that occurs when these tissues freeze. The extremities are most at risk. Frozen ears and tails result in changes of cattle appearance but do not affect cattle performance significantly. Frozen feet generally result in a calf that must be put to sleep or will die. Occasionally teats of a recently calved cow freeze resulting in mastitis and frequently loss of milk production in at least one quarter of the udder.

Newborn calves are most at risk because they are wet and because they have a large surface area in relation to their total body mass. Calves are not fully capable of maintaining temperature the first several hours of life. Newborn calves have a circulatory system that is less able to respond to cold changes as compared to more mature animals.

Weather conditions have a great effect on the risk of frostbite and hypothermia, above and beyond just creating low temperatures. Wind is often the biggest factor. The effect of wind is often referred to as wind chill and tells how living things "feel the temperature". Wind chill is often many degrees colder than the actual temperature. Humidity has a large effect on cold as well since humid air can take more warmth away from animals.

The surfaces on which cattle must rest also have a great effect on the risk of frostbite. If cattle must lie on snow ice or frozen ground they will lose much more body heat than if they can rest on dry bedding or grass. Snow or ice from freezing rain on calves dramatically increases heat loss.

Calves that freeze to death are unable to maintain a high enough body temperature to keep body processes working. Newborn calves have a special body tissue called "brown adipose tissue" that is designed to help them deal with cold temperatures. During cold temperatures this special fat is broken down and creates heat that helps the calf keep warm. However, very cold conditions can overcome this protective mechanism and calves die.

Intake of the first milk (colostrum) and physical activity help calves maintain and generate the heat they need for body process to work properly. Attentive mothers vigorously clean newborn calves and stimulate this activity and the nursing of colostrums. Inexperienced or less attentive dams may let a calf get cold enough so it is sluggish and hyperthermia results.

Recommendations for preventing frostbite and hypothermia in Virginia Cattle:

- Provide windbreaks for calving cows when wind chill temperatures are below 20º F.
- Provide bedding for calving cows when wind chill temperatures are below 10º F. Often the most convenient way to do this is to roll out a dry round bale of hay.

- House calving cows and calves less than 1 day of age when wind chills are below 10º F. and calves cannot be kept dry because of snow or rain. Remember, housing can also be a negative because organisms that cause scours and pneumonia build up in barns and stalls. Finding the right balance of protecting calves from the cold but not exposing them to sickness bugs requires special skill when weather conditions are severe during calving.

Treatment of frostbite:

- Detect frostbite early. Examine newborn calves carefully when conditions create a risk. If ear-tips are frozen there is significant risk that feet may be experiencing damage as well.
- Thaw tissues as quickly as possible. Much of the damage of frostbite occurs during the thawing process. Ice crystals form that damage all tissues. A fast thaw decreases ice-crystal time.
- Once tissues are thawed re-freezing must be prevented. This nearly always means housing with heat for several days. Because of damage to circulation from the initial freezing these tissues will re-freeze very easily.
- Tissues that will recover from freezing should stay warm. If tissues are cold to the touch the next day there has probably been enough damage so that blood supply is gone and the feet or other parts will become gangrenous.

Treatment of hyperthermia:

- Careful observation of newborn calves during cold conditions is crucial. Healthy calves stand often, nurse large amounts of colostrums and are alert as evidenced by their holding the head up and getting up when encouraged. Extremities should feel warm.
- Cold calves should be warmed and fed warm colostrums. If they do not nurse then they should be given a bottle or tubed with colostrums or a commercial colostrums substitute.
- A number of warming techniques can be successful. A few hours in the floor board of the pickup truck with the heater on high saves many calves. Hair dryers both dry and warm cold calves. Heat lamps work best if calves are already dry. Electric blankets can be very effective. Some producers have built boxes with a forced air heater that are very effective.
- Severe cases of hyperthermia require special attention. Sometimes warming the outside of the calf shunts blood from the critical organs and results in death. Warm water baths can warm a very cold calf quickly, but sometimes result in death. Warm IV solutions or warm enemas administered by veterinarians can sometimes overcome this problem.

Careful attention and appropriate treatments during cold weather calving can save calves' lives and improve profitability in tough cattle economic times.

What Kind of Year Did You Have?

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

As 2009 comes to a close, it is always an excellent time to reflect on the kind of year you experienced with your cattle enterprise. As you review receipts and bills it important to keep the big picture in focus as you assess the details. The profitability formula is the same for everyone:

Profit (loss) = income-costs
And can be described for a cow-calf enterprise as:

[(Calf Crop % x Weaning Weight) x Price] – Costs

This can also be expressed on a breakeven basis:

$$\textbf{Break even price} = \frac{\textbf{Annual Cow Cost}}{\textbf{Average Weaning Weight x Calf Crop \%}}$$

$$\textbf{Break even price} = \frac{\textbf{\$ 450}}{\textbf{550 lb x 85 \%}} = \textbf{\$96.26/cwt}$$

The key to making significant changes is identifying the weaknesses in important areas which have a major impact on the bottomline and addressing the ones which will have the largest impact. The following table shows the relative impact of a 10% change in several factors and the resulting change in breakeven price and return/cow.

Impact of Changes in Key Production Variables on Breakeven Price and Return/Cow

Factor	Change	Decrease in Breakeven Price ($/cwt)	Increase in Return ($/cow)
Total feed cost	**-10%**	**$4.61**	**$23.30**
Weaned calf crop	**+10%**	**$10.27**	**$51.91**
Weaning weight	**+10%**	**$8.57**	**$43.35**
Calf price	**+10%**	**$8.57**	**$43.35**
Interest cost	**-10%**	**$0.18**	**$0.90**
Cull cow weight	**+10%**	**$1.37**	**$6.93**
Cull cow price	**+10%**	**$1.37**	**$6.93**
All combined	**10%**	**$34.94**	**$176.67**

CattleFax, 2008 Cattlemen's College

This is a useful guide to gauge the priority of variables which need to be examined. However, enterprise records are needed to determine where your largest result can be realized. While many times cost-cutting is an important focus; strategic and small investments of additional expense can be justified if it addresses key areas. An example could be if calf crop % needs to be increased, then pre and post-partum nutrition are likely areas of focus with intent to calve cows in better condition either by using higher quality forages or supplementation. If calf crop

% is not an area of weakness but weaning weights are, then an examination of sire genetics and management are in order.

Production and economic records are the necessary tools to begin the identification of the variables where the smallest change will have the greatest impact on your profitability. The toughness of margins in the cow-calf business has increased interest in value added programs where genetics, health, and age and source verification are rewarded. The same records used to analyze your operation are the foundation to participation and rewards in these premium programs.

A few other keys to remember as you review your records and formulate a strategy:

- Income is a function of production level, but costs generally determine profitability

- Feed costs are a major cash expense and generally account for over half of the variability in profitability across herds

If you have not done so already, 2010 will be an excellent year to start keeping the necessary production and economic records. Your local county Extension office is a good place to start for publications and forms related to records. Extension enterprise budgets are also available on-line at http://pubs.ext.vt.edu/446/446-048/446-048.html .

Lawrence Featured Speaker for VT Beef Webinar January 14

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

Dr. John Lawrence from Iowa State University will be the featured speaker for the second Beef Webinar sponsored by Virginia Cooperative Extension and scheduled for 6:30 p.m., Thursday, January 14th. Lawrence is a nationally-recognized livestock economist, and is director of the Iowa Beef Center. Dr. Lawrence will be providing a beef industry outlook with discussion on cattle markets and factors driving economics of the cow-calf sector. Participants in the on-line meeting will have the opportunity to ask questions through an on-line chat box or over the telephone using a number provided during the program.

Check with your Extension Agent about accessing the program at your local office. Producers with high speed internet service can access the meeting at home. The web address to join the meeting is http://connect.extension.iastate.edu/beefcattlewebinar/ . Alternatively, webinar information and meeting links are also available on the VT Beef Extension webpage http://www.vtbeef.apsc.vt.edu/ . From the VT Beef Extension site, you can click on the meeting link and go directly to the meeting.

A recording of the December Beef Webinar on Cow Nutrition can be accessed through the VT Beef Extension page. In addition to the January 14th meeting, future webinars are scheduled for February 18 and March 18. If you have questions please contact Mark McCann at 540-231-9153.

2009 Culpeper Senior BCIA Bull Sale Results

Dr. Scott Greiner
Extension Animal Scientist, VA Tech

The Virginia Beef Cattle Improvement Association hosted the 52nd Annual Culpeper Senior Bull Sale on Saturday, December 12, 2009 at Culpeper Agricultural Enterprises near Culpeper, Virginia. Fifty-two fall-born bulls representing the top end of the 93 bulls tested sold for an average price of $1,950. The sale included 49 Angus bulls which averaged $1,944 and 3 Gelbvieh Balancer bulls at $2,050.

The top selling bull went to Walter Robinson of Glade Spring, Virginia and Glenn Wheeler of Atkins, Virginia for $3900. Angus lot 75 is a September 2008 son of GAR Yield Grade and was bred by Echo Ridge Farm of Atkins, Virginia. He had a test YW of 1509, ratio 126, and test ADG ratio 125 along with +9 CE EPD, +114 YW EPD, IMF ratio 98, and REA ratio of 117. This was also the high-indexing bull of the test.

Angus lot 49, consigned by Quaker Hill Farm of Louisa, VA sold to C. H. Morris and Sons of Appomattox, Virginia for $3800. This low birth weight bull is a son of HA Rainmaker 6780 and had a CED EPD +15, BW EPD -2.8, WW EPD +51 and YW EPD +98, as well as a marbling ratio of 147, MB EPD +0.67, and +58 $B.

Lot 74 was another high selling Angus lot consigned by Echo Ridge Farm. This son of GAR Predestined was sold to Hollow Hill Farm of Doe Hill, Virginia for $3300. This bull set an all-time test record with 5.89 ADG, along with a yearling weight of 1330 and ratio of 111. This bull also posts WW EPD +53 and YW EPD +99, as well as a $B value of $+58.

The breeder group award was presented to Soldiers' Hill Angus Farm of Warrenton, Virginia for their consignment of Angus bulls. Lot 16 led the Soldiers' Hill consignment, selling to B. A. Tignor of Milford, Virginia for $2100. This son of SAV 8180 Traveler 004 had test yearling weight ratio of 110 and test ADG ratio 127, along with EPDs of +57 WW, +93 YW, +8 CEM, +27 Milk, and +31 $W. Lot 15, also from Soldiers' Hill, sold for $2000 to Linda Seay of Warrenton, VA. This high maternal ability is also a son of SAV 8180 Traveler 004 had a CEM EPD of +9, milk EPD of +27 and a test ADG ratio of 115.

Hickory Hill Farm of Blacksburg, Virginia consigned the Gelbvieh Balancer bulls. Lot 602, a black, polled son of S A V Net Worth 4200 sold for $2400 to Glenmary Farms of Rapidan, Virginia. This bull had a test ADG of 3.84, WW EPD +50, YW EPD +100 and FM value of 34.86. Another member of the Hickory Hill consignment, Lot 601, commanded $1900 from L. K. Crossman of Culpeper, Virginia. This homozygous black, polled son of DCSF Post Rock Granite 200P2 had a WW EPD of +45 and YW EPD +89.

Another high selling bull was lot 79. This Angus bull was consigned by Mullins Angus Farm of Clintwood, Virginia and sold for $2900 to Whitman Farm of Wytheville, VA. This bull had a Test YW and ADG ratio of 121 and 114, as well as WW EPD +65 and YW EPD +110, and was sired by Quaker Hill Objective 3J15.

All bulls in the test and sale were consigned by members of the Virginia Beef Cattle Improvement Association. Bulls were tested at the Culpeper bull test station operated by Glenmary Farm, owned by Tom and Kim Nixon of Rapidan, Virginia. The sale was managed by Virginia BCIA and the Virginia Cattlemen's Association, and the auctioneer was Mike Jones.

Sheep Update

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

2009 Virginia Fall Bred Ewe Sale Results

The 2009 Virginia Sheep Producer's Association Fall Bred Ewe Sale was held Saturday, December 5 at the Rockingham County Fairgrounds in Harrisonburg. A total of 43 females sold for an average price of $256. Ultrasonic pregnancy diagnosis was conducted on all ewes immediately prior to the sale, with 38 of 43 ewes confirmed pregnant. A new sale feature was the addition of Boer goats. Sale results by breed and age were as follows:

	Ewe Lambs		Yearling Ewes		Mature Ewes		All	
Wether Dams								
Suffolk	3	$317	3	$300			6	$308
Crossbred	20	$252	4	$300	3	$307	27	$265
Katahdin	6	$160					6	$160
Commercial	4	$265					4	$265
All Breeds	33	$242	7	$300	3	$307	43	$256
Boer Goat Does	5	$215					5	$215

Virginia-North Carolina Shepherds' Symposium - January 8-9, 2010

Alphin-Stuart Livestock Arena, Virginia Tech, Blacksburg, VA

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

Program Overview:

Friday, January 8

9:00 am **Sheep Management 101 Workshop**

5:00 pm *All day workshop for beginning shepherds covering topics related to basic sheep production and lambing management. Workshop will include hands-on activities with sheep. (*additional registration fee, limited to first 30 participants registered)*

4:00 pm **Virginia Sheep Industry Board Meeting (open to public)**
Alphin-Stuart Livestock Arena

6:00 **Virginia Sheep Producers Association Board Meeting (open to public)**
Alphin-Stuart Livestock Arena

Saturday, January 9- *all activities at Alphin-Stuart Livestock Arena*

8:00 am **Registration & Commercial Exhibits**

9:00 **"Keys To A Successful Lambing Season"**
Dr. Dee Whittier, Virginia-Maryland Regional College of Veterinary Medicine

10:00 **"Strategies for Genetic Improvement of Parasite Resistance in Sheep"**
Dr. Dave Notter, Department of Animal & Poultry Sciences, Virginia Tech

11:00 **"Practical Solutions for On-Farm Mortality Disposal"**
Dr. Allen Harper, Tidewater AREC, Virginia Tech

11:30 ***Roy Meek Outstanding Sheep Producer Award Presentation***
Sheep Industry Virginia Livestock Hall of Fame Recognition
Virginia Sheep Producers Association Annual Meeting

12:15 **Lunch**
Updates from American Sheep Industry Association & American Lamb Board

1:30 **"Making the Most of Lamb Marketing"**
Mr. Mike Carpenter, VDACS Livestock Marketing & producer panel

1:30 pm *Concurrent youth educational session*

2:00 **"Ewe Nutrition and Management - Do's and Don'ts"**
Dr. Mark McCann, Department of Animal & Poultry Sciences, Virginia Tech

2:50 **Break - Commercial Exhibits**

3:15 **"Your Lambs and the Products They Produce" Lamb Carcass Fabrication Demonstration**
Dr. Scott Greiner, Department of Animal & Poultry Sciences, Virginia Tech
Mr. Mark Stevenson, Department of Animal & Poultry Sciences, Virginia Tech

Early Registration Deadline: January 2, 2010 (registrations taken on-site day of program)
For registration information contact:

Dr. Scott Greiner, Department of Animal & Poultry Sciences, Virginia Tech
Phone: (540) 231-9163 Fax: (540) 231-3713 Email: sgreiner@vt.edu