West Virginia University

News Ewe Can Use

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News Ewe Should Know About Ms. Debi Marsh -

Most of us find it hard to believe that a person with so much broad knowledge of the sheep industry, marketing, diseases and parasites, reproduction and life in general as Debi Marsh, who has directed the West Virginia Sheep Management Project for the last four years, would need to go back to school. But when Dr. Wayne Purcell, of Virginia Tech, recognized her potential in marketing economics and made the offer, Debi couldn't resist. She has left the project to go to Virginia Tech and complete her doctorate degree.

Debi provided outstanding leadership to the West Virginia Sheep Management Project over the last four years. As our representative to regional and national sheep committees and organizations, she brought wide recognition to the project and the West Virginia sheep industry and brought new ideas and activities to our producers. Her contributions to the project and the West Virginia sheep industry are too many to list, but many of you have enjoyed her help relative to health issues in your flock, breeding soundness exams of your rams, pregnancy checks of your ewes, schemes for out-of-season breeding and/or new ideas for marketing your lambs more effectively. The recent increases in lamb prices should have maximized the benefit of these efforts to put more money in your pockets and stimulate economic development in West Virginia with small ruminants.

Debi has made sure everything was done correctly and that all the homework was done before we took action, so that every decision was as sound as it could possibly be. Although sometimes reluctant to take the lead on a particular issue, when faced with that task, she always excelled. She will be sorely missed in the industry, but deserves this opportunity to further her education and increase her opportunities and earning power. We offer her our **"Thanks for a job well done!"** and congratulations and best wishes for her new venture.

A search is underway to find someone to pick up where Debi left off and keep the project moving. During the interim period, Paul Lewis (304-293-2231, ext 4413; plewis@wvu.edu), Marlon Knights (ext 4412; mknight3@mail.wvu.edu) and Keith Inskeep (ext 4422;einskeep@wvu.edu) are trying to be as available as possible to answer questions (or find someone who can), help with the services the project has provided and keep the website up to date. We welcome and encourage your suggestions for future project activities .

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Address Corrections

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DRUG RESISTANT WORMS IN OHIO SHEEP FLOCKS (William P. Shulaw, Extension Veterinarian, The Ohio State University)

Drug resistance has become a serious problem in the major sheep and goat rearing areas of the world. Resistance to all the chemical classes of dewormers has been described in flocks of sheep and goats in the United States. Drug resistance in the worm develops as a genetic trait just as some production traits in sheep. Unfortunately, once resistance is detected in the flock, it will often be permanent. If resistance develops to all 3 chemical classes of dewormers, it may be very difficult to graze sheep on that property.

Resistance develops when worms are exposed frequently to the same drug, especially when there is significant pasture contamination. Although parasitologists disagree about whether drug classes should be rotated annually, continuous use of the same product usually results in resistance with enough time. Along with frequent use, an important cause of drug resistance is UNDER DOSING because this allows worms with the potential for drug resistance (for example, one copy of a resistance gene) to survive and reproduce while the fully susceptible worms are killed. Under conditions favorable to the worms, such as a switch to a clean pasture following deworming, the eggs from these resistant worms may constitute the majority and become larvae on the grass waiting for the sheep to ingest them. Once the frequency of resistance genes reaches a threshold in the flock, the producer may see failure of the dewormer and clinical disease. Underestimating the sheep's weight, incorrect calculations of the dose to be given, incorrect dilution of products that must be mixed, and improperly calibrated equipment are common causes of underdosing. Using an average weight for calculating the dose to be given to all the sheep, leads to underdosing essentially half the flock.

Once resistance to a specific dewormer is present , other drugs in that chemical class may also be less effective; this is known as side resistance. As of the present time, only 3 drugs are licensed by the FDA for use in sheep. They are Ivomec Sheep Drench® (ivermectin - the avermectin/milbemycin class), Levamisol® and Tramisol® drench and oblets (levamisole hydrochloride), and Valbazen® (albendazole - the benzimidazole class). In the past, many shepherds have used fenbendazole (Panacur®, Safeguard®) or thiabendazole (Omnizole® or Thibenzole®; these products are no longer marketed). If resistance to one of them is present, some level of resistance to albendazole (Valbazen®) may already be present in the flock. All available dewormers in the US today are members of one of these three classes of drugs. It is important for shepherds to know whether each class is effective in their flock before finding out otherwise during an episode of clinical parasitism. If the flock is large enough, it is possible to test for resistance to all three chemical classes in a summer by using groups of sheep or lambs.

In addition to the injectable formulation of ivermectin labeled for cattle, several other long-acting formulations of drugs in the avermectin class have been developed for use in cattle in recent years, and they have been used by some producers in sheep and goats. These include doramectin, eprinomectin, and moxidectin. They are available as pour-on products, as injectables, or both. They may provide extended protection from worm infection to grazing animals because of their persistency in the body. However, some of these formulations are likely to select for drug-resistant worms because the systemic levels decline slowly over as much as 60 to 80 days or more. These drugs may provide protection from reinfection for 21-28 days, but toward the end of the protection period, levels fall below what is needed to kill most of the worms. Consequently, those worm larvae that sheep ingest that have some capacity for drug resistance will survive to produce eggs. In contrast to the relatively short duration of action of Ivomec Sheep Drench®, these persistent drugs have a greater potential to select for a population of resistant worms, and modeling by researchers in Australia suggests that development of resistance and complete failure of ivermectin can occur in just 5 or 6 years. In 2002, we documented ivermectin resistance in Hemonchus contortus (the barber pole worm, a voracious blood feeder) in a flock where we suspect it developed as a result of the use of an injectable ivermectin product. Resistance to ivermectin appears to be inherited in Hemonchus

(Continued on page 3)

In This Issue...

TENTATIVE SCHEDULE—SHEEP SHORT COURSE AND MEETINGS OF WEST VA SHEPHERD'S FEDERATION AND WEST VA FARM BUREAU SHEEP ADVISORY COMMITTEE

8-9 AM — REGISTRATION and COFFEE

9 AM — MARKETING ALTERNATIVES FOR WEST VIRGINIA PRODUCERS - TOM McCONNELL, WVU EXTENSION FARM MANAGEMENT SPECIALIST

9:30 Discussion and Questions

9:45 MY DEWORMER ISN'T WORKING — WHAT DO I DO NOW? - JOHN B. PETERS MEMORIAL LECTURE - Dr. GIL MEYERS, KENTUCKY

10:45 Discussion and Questions

11:00 UPDATE ON PREDATOR MANAGEMENT FOR RUMINANT PRODUCERS - JOHN HOUBEN & BILL BONWELL - USDA WILDLIFE SERVICES

11:40 Discussion and Questions

12:00 LAMB SANDWICH LUNCH - WILL FEATURE THE ROAST LAMB SANDWICH SERVED AT HARPER'S OLD COUNTRY STORE.

1:15 ACTIVITIES OF THE AMERICAN LAMB BOARD - JOE HARPER

1:45 Discussion and Questions

2:00 MEETING OF THE WEST VIRGINIA SHEPHERD'S FEDERATION - RON FLETCHER, PRES.

3:00 MEETING OF THE WEST VIRGINIA FARM BUREAU SHEEP ADVISORY COMMITTEE—JOE HARPER

4:00 ADJOURN

DATE:
SATURDAY,
FEBRUARY 21, 2004

LOCATION:
CLINTON HEDRICK
CENTER RIVERTON,
WEST VIRGINIA

REGISTRATION $5.00

LUNCH $6.00

PLAN NOW TO BE THERE!

DRUG RESISTANCE (*continued from page 2*) contortus as a dominant trait; thus it can develop very quickly.

Some of these drugs might be useful for sheep in very special situations (by veterinary prescription only), but if used indiscriminately by the producer, will likely speed the development of drug-resistant parasites and create a much larger problem during subsequent seasons. In addition, reliable slaughter withdrawal times have not been developed for use of these products in animals other than cattle, and producers run the risk of creating violative drug residues in animals marketed for food. We have heard reports of the use of Cydectin® Pour-On (moxidectin) orally in sheep and goats. From information gleaned from these reports, and research data concerning tissue residues of moxidectin in lambs, it is suggested that tissue residues might persist as long as six months in some cases.

Pour-on formulations were devised for cattle skin and are not appreciably absorbed across the skin of other ruminants such as sheep, goats and llamas. These topical formulations are easy to apply, but that does not mean they are effective in sheep as they would be in cattle. As an example, a study of drug absorption in llamas and alpacas showed that systemic concentrations of some of these drugs did not reach reliable levels for parasite control. This would indicate that use of such formulations is both a waste of the producer's money as well as contributing to poor parasite control and development of drug resistance. Sheep producers and veterinarians should carefully weigh the risks posed by using any dewormers not specifically labeled for sheep.

It is interesting to note that the development of drug resistant parasites in sheep has many similarities to concerns now arising about the development of glyphosate (Roundup® and others) resistance in certain weeds. Weed scientists and crop management specialists are recommending that producers know how herbicides work and develop management strategies that delay the onset of resistance. This is good advice for sheep producers seeking to control internal parasites. (*Continued page 4*)

Notes from Ron Fletcher on Wool Activities: A Plea for Getting Involved

Today is the 9th of December. I just went to the bank and withdrew all but $50.00 of our savings from the WV Shepherds Federation account. That $50.00 will prevent that account being charged a service fee. I then wrote a check for $50.00 from my personal account and deposited it in the WVSF checking account to keep a check written to pay a bill from bouncing.

The reason? We have only 19 shepherds out of almost 1000 who feel it is important to support the American Sheep Industry. What is the American Sheep Industry? Who is the American Sheep Industry? Folks, it is us, both those of us who support it and those who do not. Raising sheep is a business that helps support some of us and entertains others. Even if it only entertains you, paying for it is a necessity and good lamb and wool prices help.

Being able to sell your purebred stock at sales depends on a healthy commercial sheep industry. The WVSF has solicited $2586.80 in Wool Trust monies over the last 3 years. We have spent $3261.46 in support of our Wool Pool here in the state. We are again asking for another $850.00 to spend on our Wool Pool for 2004.

We have one of the best wool marketing programs in this country. If not, why are so many people from surrounding states selling with WV Wool? I'll tell you why. We receive more than twice what many other people are getting when they sell their wool. We can get these monies only if we are members in good standing with our national organization. Our national organization can function only if its state entities are healthy and thriving. You can be represented only if you contribute or ride on the coat-tails of those who do, and 19 coat-tails will not carry the other 900 sheep producers, not to mention those shepherds who raise goats. There is much to do, but it takes a little commitment from you, to keep ASI working for you.

We have spent our wool monies the following way:

2001	$ 886.80	wool scale
2002	$ 899.66	wool sampling equipment
2003	$ 100.00	wool baler repair
2003	$1375.00	wool scale

We could use more wool scales around the state, and soliciting these monies keeps your wool money in your pocket and not deducted for buying and moving equipment. Surely you can afford $40.00 per year in support of your industry.

Ron Fletcher
President/WVSF

DRUG RESISTANCE (*continued from page 3*) Strategies that don't rely on chemicals alone to control worms include the use of clean pastures; grazing pastures with alternate species, such as cattle or horses; the use of protein and energy supplements at strategic times; and the use of resistant breeds of sheep. Some of these strategies will be discussed in future newsletters. Producers interested in a discussion of the basic biology and control of internal parasites in sheep may wish to read Bulletin #883, "Parasite control in sheep: Biologic control for the new millennium" available through Ohio Extension offices or online at: http://ohioline.osu.edu/b883/pdf/0883.pdf . Portions of this article were taken from this bulletin by Drs. Shulaw and Monahan.
Excerpted from: OSU Sheep Team Newsletter, April, 2003, with permission from Dr. William Shulaw. See page 5 for a further update from Dr. Shulaw.

New Bulletin Available

The West Virginia Agricultural and Forestry Experiment Station has just published a bulletin "Reproductive Management in the Ewe Flock by Induction or Synchronization of Estrus", by Marlon Knights and others. Copies are available by contacting the Station at PO Box 6108, Morgantown WV 26506 or from the Sheep Management Project office.

DEWORMERS APPROVED FOR USE IN SHEEP
(Dr. William P. Shulaw, Extension Veterinarian, The Ohio State University)

In the April issue of the Sheep Team newsletter, we discussed drug resistant worms and the selection process that creates them in our sheep flocks. In that article we stressed the importance of knowing whether the products you are using are working for you and of monitoring the success of your program with quantitative fecal egg counting techniques. Since that article was published, I have become aware of three additional sheep flocks in which ivermectin resistance is suspected. In one of these, we suspect that the source of resistant worms was goats that were purchased and commingled with the sheep flock. In August, 2003, the Journal of the AVMA published an article by Dr. Ray Kaplan of Georgia in which he described ivermectin resistance in 17 of 18 goat flocks in Georgia. In three of these flocks, moxidectin resistance has also been detected. Anthelmintic resistance, including resistance to ivermectin, in goats from the south may be widespread.

In the newsletter article (http://knox.osu.edu/ag/archieve/archieve.html), I also highlighted the importance of being extremely careful of use of the avermectin/milbemycin class of dewormers (ivermectin, doramectin, eprinomectin) and moxidectin. With the exception of Ivomec Sheep Drench®, not only are these compounds NOT approved by the FDA for use in sheep, they are more persistent in the body. This includes ivermectin injection (approved for cattle). This characteristic has the potential to cause selection for resistance to develop, perhaps rather quickly. This is especially true for Hemonchus contortus, the blood-feeding worm that causes most losses in Ohio *(and West Virginia)* sheep. Once ivermectin resistance is present, the situation is set for moxidectin resistance as well (if it is used) because we believe that resistance to both compounds is by the same general mechanism in resistant worms. Unfortunately, once resistance to a chemical class is present, it is likely to be permanent.

Currently, the FDA has approved only three drugs for use in sheep. They are Ivomec Sheep Drench® (active ingredient is ivermectin - the avermectin/milbemycin class); Levasole® and Tramisol® soluble drench powder, and oblets, and PROHIBIT Soluble Drench Powder® (active ingredient is levamisole hydrochloride); and Valbazen® (active ingredient is albendazole - the benzimidazole class). This summer, some producers found it very difficult to obtain Levasole® and Tramisol® soluble drench powder (made by the same company). It appears that these two products may continue to be difficult to obtain for the foreseeable future. However, PROHIBIT Soluble Drench Powder contains the same active ingredient, levamisole hydrochloride, and is available from several suppliers in Ohio.

Although levamisole has been available as a sheep dewormer for a long time, it remains effective in many flocks. Research suggests that only H. contortus worms that are homozygous recessive for levamisole resistance are resistant. This is analogous to the spider lamb syndrome where mating of two carriers of the recessive gene results in spider lambs only one-fourth of the time and mating of a carrier with a normal animal results in 50% of the progeny being carriers but no spider lambs are produced. This may at least partially explain the reason that levamisole appears to remain effective in many flocks.

This is unlike the situation with ivermectin (and its chemical relatives) where we believe that resistance in H. contortus is expressed as a dominant trait making a worm with only one copy of the gene effectively resistant to ivermectin. In this situation, a mating between a resistant worm, with only one copy of the resistance gene, with a non-resistant worm still results in 50% of the progeny being effectively resistant to ivermectin. All progeny of a male or female worm homozygous for the resistance gene will be resistant. Australian researchers speculated as early as 1996 that resistance of H. contortus to ivermectin might become common rather quickly as a result of this mechanism of inheritance. Our observations in sheep and goats now seem to bear this observation out, and we must ask ourselves here in the USA to what extent the extra label use of this class of compounds has contributed to this problem.

It remains important for producers to know the compounds that they are using are effective. Currently, this can only be determined by using quantitative egg counting techniques and comparing the egg count reduction observed 10-14 days post-deworming with the level of shedding at the time of treatment. (see http://ohioline.osu.edu/b883/pdf/0883.pdf) In addition, they should be very cautious about using dewormers in an extra label fashion; not only because of the potential for drug residues but also because of the potential for selection of worms for resistance. *Excerpted from: OSU Sheep Team Newsletter, October, 2003, with permission from Dr. William Shulaw.*

Market Access – The New Holland Experience

Tom McConnell- WVU Extension Specialist

Never have West Virginia Shepherds enjoyed a better market than now. But not everyone has received all these higher prices. There is much inefficiency in the marketing chain. Too many people haul too many lambs too far. This has left many producers frustrated with their lamb prices. And they have begun to look for a new marketing strategy.

There are many options for marketing lambs. Recent interest has been placed on two of these options. First – to breed for "out-of-season" lambs and pursue the market for lambs and kids to satisfy many of the religious holidays like Eid al-Adha, Easter, or Ramadan. Second – to move the lambs nearer to the lamb eating population, such as the New Holland Market.

Many reading this have already trucked lambs to the Market in New Holland and many are still trying to make that decision. Two groups of extension agents and producers visited the New Holland Livestock Stables this past year. Our goals were to observe the market and decide if and how we could access that market. The decision was made to send some lambs to New Holland and document the experience to share with other shepherds. This discussion is about what we observed on two visits to New Holland and then our experiences when we accessed that market.

Buyer presence: The first thing we saw at New Holland was there was great demand and active bidding for lambs and kids. It was estimated that sometimes as many as 15 buyers were bidding on one lot of lambs. The demand for slaughter ewes and goats was similar to that for the lambs and kids. In fact, age didn't seem to be a deterrent for active bidding for mature goats. When we sent lambs, both hair and wooled, many different buyers bid on them too. The check from 5 lots totaling 55 lambs that sold in late December revealed just as many different buyers – five .

Quality consideration: It has been suggested that quality is not an issue for buyers in New Holland. This point needs closer observation and study, but initially I suggest that although there is a brisk demand for all lambs, the better the lamb the higher the price. Our experience is that some under condition lambs brought a high price because they were light weight, but some heavy lambs brought a high price because they were very good lambs. Clean lambs seemed to attract more attention than soiled lambs with manure tags. Our marketing experience has included very few intact males or long tailed lambs. So we didn't feel we should comment on that aspect of the market as it relates to ethnic preference. We did observe there was enough buyer pressure to compensate for some "off" lambs or those that didn't fit a specific religious need.

Expense and Shrink: Sending lambs to market far away from home is a big decision and many people assume it is too expensive. The marketing expenses at New Holland were comparable to any other nearby marketing facility. The shrink is also a concern. There is very little information "out there" to help us understand or predict shrink. A load in November recorded a weight difference between a West Virginia loading weight and a New Holland sale weight of about 5%. Lambs shrink on their way to any market. New Holland sells on an out weight basis West Virginia Markets sell "in-weight". The barn also provides hay and water pens (25 cents per head per day) to accommodate bringing lambs in on the Saturday or Sunday before. So the West Virginia experience includes not just shrink, but shrink and then re-fill on hay and water. There is much to be learned about shrink and its effect on this marketing scheme. Getting the lambs to New Holland can be very expensive, as well. Careful planning and coordination can reduce the trucking cost. One split load from two counties, leaving from Jackson County, had over 400 lambs and cost the shepherds less than $2.50 per head. A 20 ft. gooseneck trailer load from Preston County with 55 lambs cost 8$ per head.

Price: The prices received for the lambs were noteworthy and the buyers were satisfied. It is impossible to compare lamb prices considering the differences in quality, weight, distance, date, and "whatever". But we conducted a quick price spot to attempt a price comparison. We chose five dates in 2003 and averaged all West Virginia Markets against all the New Holland Market prices for that day. The benefit from marketing at New Holland is found on the far right column in the table below. The question is, "Can you operate within this advantage and can you determine your own local marketing expenses to compare?"

There is much to learn about price differences and this example is just a snapshot. We suggest that you study the market yourself. New Holland and West Virginia market reports can be found on the WVU Extension Website at http://www.wvu.edu/~agexten/ . Those attending the visits were satisfied that the Market reports found on the website did reflect the actual prices reported from the Markets. The New Holland management has been very accessible and agreeable.

	Weight	**Local**	**N Holland**	**Advantage**
Jan 03	90-100	$96.43	$111.89	$15.46
	100-125	$90.56	$106.17	$15.61
Mar 03	90-100	$87.00	$114.25	$27.25
	100-125	$89.75	$106.10	$16.35
May 03	90-100	$103.12	$121.25	$18.13
	100-125	$104.60	$113.94	$ 9.34

	Weight	**Local**	**N Holland**	**Advantage**
June 03	90-100	$95.10	$115.63	$20.53
	100-125	$93.70	$113.20	$19.50
Sept 03	90-100	$86.17	$108.50	$22.33
	100-125	$84.10	$109.00	$24.90
	100-125	$84.10	$109.00	$24.90

4-H AND FFA SHEEP PROJECT
TAIL DOCKING LENGTH FOR YOUTH SHOWS

Brad Smith, Extension Agent, Grant County

West Virginia 4-H and FFA sheep projects and the youth livestock shows have had their share of heated debates over the infamous tail docking issue. This rule which basically states, lambs should not be docked shorter than the level of the distal end of the caudal tail fold, has been enforced throughout the state the past two years. How it has been enforced has undergone some changes each year and will once again be changed for 2004.

The problem in implementing this rule consistently and objectively has been that while the distal end of the caudal tail fold provides an excellent visual landmark for the site of the tail docking procedure to occur, once the procedure is carried out , this landmark is destroyed. In short, the distal end of the caudal fold is useless when it comes to enforcement of the rule at fairs and shows.

A multi-state (ID, TX,WV,AZ,OH,WA) research project has been conducted to measure the normal distribution of lamb's tails (by linear measurement) that have been docked at the distal end of the caudal tail fold and to develop a measurement device (Detail Device) that can be used to more accurately and consistently measure lambs tails. Results of this study are being prepared for submission to the Journal of Animal Science and have been adopted for use in the enforcement of the WV 4-H and FFA tail docking policy. The study found that virtually all lambs docked at the distal end of the caudal fold, as recommended by industry organizations, would measure 0.7 inch or longer at weaning or market as measured with Detail Device.

The West Virginia 4-H Program and the West Virginia Association of Agricultural Educators Program Policy Committee of the FFA have amended the tail-docking policy that will apply to all 4-H and FFA youth exhibitors in WV. The policy stated for the youth sheep projects (both breeding sheep and market lambs) and for exhibition of animals by youth at fairs and shows in West Virginia is:

"**Lambs born after January 1, 2002 will be accepted for exhibition only if tails are not docked shorter than the level of the distal end of the caudal tail fold. Lambs that are properly docked will have a minimum tail length of .7 inches at show, measured by the approved measurement device, which will be placed against the base of the tail and pinbones."**

It is strongly recommended that tails should be at least 1.5 inches in length at weaning. This recommendation is based on the average length at weaning, of tails docked at the distal end of the caudal fold, as determined by the research project. This recommendation will encourage youth to select lambs that were docked appropriately. The 0.7 inch is a minimum, if you try to dock at that length or select lambs with that short of a tail, you will be taking a chance that the youth showing those animals will be disqualified and not allowed to show. When lambs are docked appropriately at the distal end of the caudal fold, there won't be any question or problem and this will become a non-issue in WV. USDA Extension is beginning to discuss this issue with other states that, unlike West Virginia, have not been on the leading edge. Hopefully a national policy will be adopted within a few years, so that sheep producers trying to market animals out of state will not be discriminated against.

Whether or not you personally agree with the recommendation of the many national and state industry organizations that have adopted this policy, there is sound evidence that short docking increases the incidence of rectal prolapse in sheep. The ethical treatment of animals and the elimination of unethical practices in the show ring are important to our youth programs. As organizations that promote educational programming with life skills attainment, it is prudent to exemplify ethical treatment of animals and utilize quality management practices. Those of us involved with youth livestock shows must be, and must teach our youth to be, responsible stewards of livestock and remember that the focus of these programs is our youth.

If you are raising and/or selling lambs or breeding sheep that will be shown by youth exhibitors in WV, you should follow these guidelines so that the sheep will not be disqualified. The measurement device (Detail Device) is being manufactured and plans are to have at least one in each WVU County Extension Office this spring.

News Ewe Can Use

WV Sheep Management Project
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Mark Your Calendars!!!

February 21—Sheep Short Course and meeting of WV Shepherd's Federation and WV Farm Bureau Sheep Advisory Committee, Clinton Hedrick Center, Riverton WV, 9 AM to 4:15 PM.

May 1 and 2— Maryland Sheep and Wool Festival (31st Annual), Howard County Fairgrounds, West Friendship, MD. For more information, call 410-531-3647 or visit the website at www.sheepandwool.org

June 4 and 5—WV Purebred Sheep Breeder's Assoc. Show and Sale (54th Annual); Club Lamb and Breeding Sheep Show and Sale—4th, Junior Judg ing Contest, Lamb Barbecue and Sale—5th; Tri-County Fair grounds, Petersburg WV; For more information, complete schedule and sale catalogs, contact Sandy Smith at 304-257-4372.

August 28—WV-Ohio Sheep and Wool Festival, Jackson County Fairgrounds, (11th Annual) Cottageville, WV