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News Ewe Can Use

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WVU Research Update: Will This Pregnant Cow Calve? Will That Ewe Have Twins or a Single?

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The Reproductive Physiology Research Team of the WV Agricultural and Forestry Experiment Station is studying the problem of embryonic and fetal losses in ewes and dairy cows that present no evidence of disease. Problems were first identified in ewes in the out-of-season breeding program when the numbers of lambs born were fewer than the numbers of embryos counted by ultrasonography at day 25 to 30 post-breeding. Reports from the Midwest and Florida pointed to other such losses in dairy cows that had been diagnosed pregnant at 28 to 35 days but failed to calve.

Embryonic and fetal losses contribute to poor reproductive performance and decreased reproductive efficiency. In both sheep and cattle, losses before day 40 to 45 are considered embryonic, occurring before the placenta has completely formed and attached to the uterus. Losses that occur beyond day 45 are designated as fetal, occurring after attachment of the placenta is complete.

In the ewe, work to date has shown that losses are not limited to ewes bred out-of-season (spring bred, non-lactating when mated). Results indicate that losses occurred with about equal frequency in ewes bred during the spring and in ewes bred during the traditional fall breeding seasons. Furthermore, ewes may lose a complete pregnancy or a ewe carrying twins or triplets may maintain the pregnancy, but lose one or two embryos or fetuses of the initial two or three identified. The pattern of pregnancy failure from pregnancy diagnosis at day 25 post-breeding through parturition is presented in figure 1. Losses occurred in a fairly uniform pattern throughout pregnancy. This pattern is based on counts of numbers of embryos at 25 days gestation, fetuses at 45, 65, and 85 days gestation, and lambs born. Figure 2 shows sonograms of twin embryos at 25 and 30 days gestation in the ewe.

Data from two herds of lactating dairy cows and three groups of heifers revealed that 11% of animals pregnant at 28 to 35 days post-breeding had lost the pregnancy by 65 days post-breeding. In contrast, most losses in beef cows occur before day 30, with only 3 to 5 percent of animals diagnosed pregnant at 30 days failing to calve. The majority of late embryonic and early fetal losses in dairy cows occurred before day 45, during the period when the placenta is developing its full capacity for transferring nutrients to the embryo and the embryo is developing its vital organs and becoming a fetus. Losses were three times as great in cows that had two corpora lutea as in those with only a single ovulation (27 vs 9%). Losses increased with age, from only 2% in heifers (comparable to beef cattle), to 10% in 2- to 4-year olds and 19% in cows 5 or older. Losses were lower in cows in moderate body condition (8%) than in cows that were thinner (16%) or fatter (22%). Losses were greater in cows that had lower concentrations of progesterone in peripheral blood. The value at or below which 50% of pregnancies were lost was 2.8 ng per ml. Loss rates also varied by the sire to which the cows had been mated. Findings in this study, and data from the

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WVU Research Update: ...

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literature on abortions after day 65, establish the pattern of pregnancy failure in dairy cows also presented in figure 1.

Embryonic and fetal losses follow somewhat different patterns in lactating dairy cows and in non-lactating ewes. Future work will focus on learning how and why late embryonic and fetal deaths occur in the two species and on determining how to prevent those losses.

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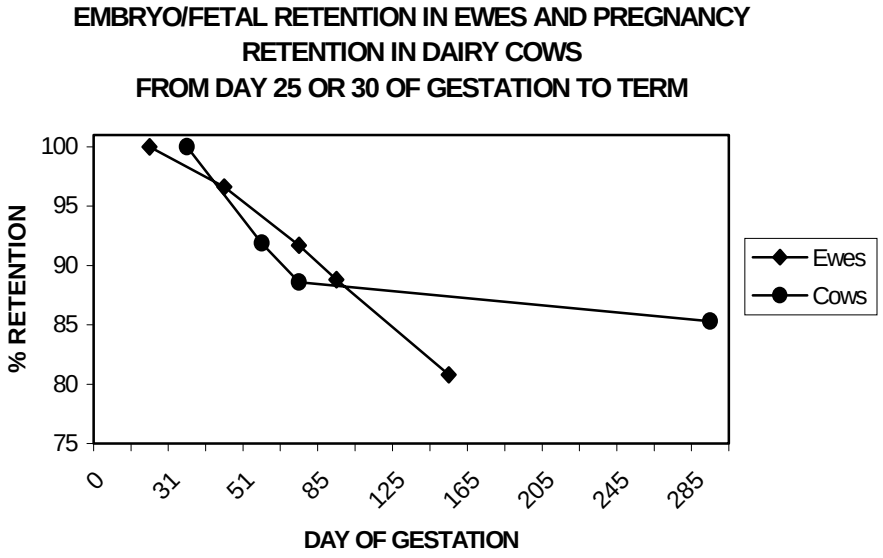

Figure 1. Patterns of decline in the proportion of viable embryos/fetuses after day 25 of gestation in the ewe and in the proportion of viable pregnancies after day 30 of gestation in the dairy cow, expressed as percent retention for each species.

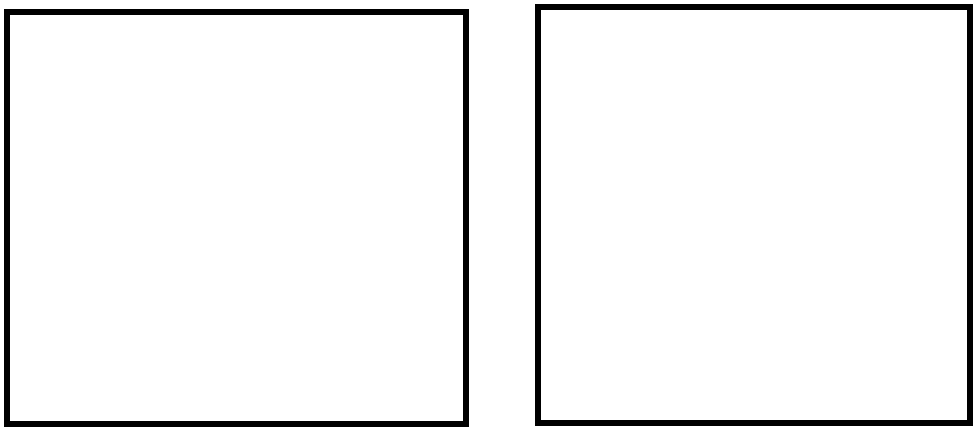

Figure 2. Sonograms of twin embryos at days 25 (left) and 30 (right) of gestation in the ewe.
E = embryo
M = membrane (amniotic vesicle)

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Soremouth

Contagious ecthyma, or soremouth, is a highly contagious disease that affects both sheep and goats.

Occurrence - Soremouth attacks sheep of all breeds and ages. However, the disease more commonly develops in lambs less than a year of age. The lower incidence in adult sheep is likely due to immunity acquired during the first two years of life, although, susceptible older animals can become infected at anytime. Geographically, the disease occurs in all parts of the US and in all countries where sheep are raised. Seasonally, most outbreaks occur during late summer, fall and early winter. Disease incidence may also be high among newborn lambs during the early spring.

Cause and Transmission - Soremouth is caused by a virus. The virus is transmitted by both direct and indirect contact. The disease develops following an abrasion, puncture, or other trauma to the skin which provides a point of entry for the virus. Dry stemmy hays and spinny plants such as thistles that abrade and puncture tissues of the lips and mouth can contribute to the spread of the disease. Following a 2 to 3 day incubation period, soremouth first appears as tiny red papules (bumps) usually around the lips. These soon develop into vesicles (blisters) which rupture, become pustular, and form scabs (figure 1). The scabs drop off and the tissues heal without scarring. The course of the disease varies typically from 2 to 4 weeks. Dried scabs can remain infective for years contaminating the environment. Contaminated equipment, vehicles, and people, can spread the virus among animals and between farms. Once the disease appears on a farm, additional cases can be expected in subsequent years. Persistent infections, especially subclinical (asymptomatic), also play an important role in propagating the disease.

Affected lambs are often reluctant to nurse or eat, lose weight and become weak. Infected suckling lambs contaminate the teats and udders of their dams, spreading the virus to siblings. Ewes nursing infected lambs can become infected, develop painful teat lesions, and consequently not allow their lambs to nurse. The affected udder becomes susceptible to bacterial infection, which may lead to mastitis. Occasionally, lesions also develop on the feet, causing lameness.

Treatment - Treatment of the disease is of questionable value, although antibiotics and antiseptics may help prevent and/or control secondary bacterial infection and may hasten healing by a few days.

Prevention - Both clinical disease and vaccination provide variable and incomplete immune protection. Vaccination is not recommended in closed flocks where the disease is not present because the vaccine will introduce the virus to the premises. Vaccination against the disease is actually planned infection using a live virus. Lambs are generally vaccinated at 1 to 4 weeks of age, however suckling lambs 1 to 3 days of age can be vaccinated whenever exposure is anticipated. Vaccination of naïve adults introduced to an infected premises may be advisable. Vaccination of show animals at least 6 weeks prior to the first intended show may also be advisable. If show animals are to be returned to the flock, a whole-flock vaccination program should be considered. Vaccination consists of scratching the skin in a protected area such as inside the thigh, inside the ear, or on the underside of the tail. Vaccine is applied to the scarified area causing lesions to develop in a controlled, less painful location. Vaccinating in the early stages of the disease may shorten the course of the disease and decrease the severity of the lesions. Despite a number of different strains of the virus, commercially available single-strain vaccines generally produce a fair level of immunity in all parts of the US. A "custom" vaccine can also be prepared by mixing puss or scab scrapings from an infected animal in your flock with the commercial vaccine. **WEAR GLOVES!**

Caution - This disease is transmissible to humans, and can cause painful lesions on the hands and face. In humans, the disease is referred to as "orf". *Wear gloves when handling infected sheep and when vaccinating!*

Contact your veterinarian for more information about soremouth prevention and control.

Figure 1. Soremouth lesions on a sheep.

Figure 2. Soremouth (orf) lesion on a human.

!?! Hair Sheep !?!

Sheep with hair? Sheep have wool! Sure there's fine wool, coarse wool, long wool, medium wool, white wool and colored wool. But no wool!?! A sheep without wool just isn't a sheep - or is it?

As a matter of fact, it is. All adult sheep produce three types of fibers - wool, hair, and kemp. In *very* simple terms, "wool" sheep produce more wool than hair and "hair" sheep produce more hair than wool. The early ancestors of our modern-day sheep were double-coated animals with an outer coat of coarse medulated hair, and an undercoat of soft wool. Years of selection pressure by both man and nature have helped fashion the many different types and breeds of sheep found throughout the world today. Modern breeds have developed through selection for various traits including, meat, milk, fat, wool, *and* hair. Nature too has had its hand in the selection process through environmental pressures and adaptation. But a sheep is still a sheep, even if it isn't wearing wool.

In the face of a depressed wool market and aftermath of the loss of the national wool incentive program, hair sheep are attracting more and more attention. Why? Because hair sheep shed. At a time when it has become increasingly difficult to find and hire a good shearer and at a time when the cost of shearing often exceeds income from wool sales, shedding sheep are fast becoming an appealing alternative to traditional wool breeds.

Hair sheep are also attracting attention as low-maintenance, "easy-care" sheep for a variety of reasons.

In general:

- ✔ Hair sheep do not require shearing.
- ✔ Hair sheep do not require docking.
- ✔ Hair sheep exhibit natural parasite
- ✔ resistance/tolerance.
- ✔ Hair sheep are good maternal sheep.
- ✔ Hair sheep are hardy and adapt well to a range of environmental conditions.
- ✔ Hair sheep are good foragers.

The down side? Hair sheep tend to be smaller-framed, finer-boned, lighter-muscled, and generally grow slower than their wooly counterparts - particularly pure hair sheep. The Barbados Blackbelly and the St. Croix are considered "purebred" hair sheep, while the Katahdin and the Dorper are considered "improved" hair sheep. The Katahdin and the Dorper are composite breeds developed to "improve" size, muscling and carcass acceptability .

The ancestors of the hair sheep found in the US today are of African origin. Tropical west African hair sheep evolved under extreme conditions - hot temperatures, high humidity, low-quality forages, parasites. Today, hair sheep comprise about 10% of the world sheep population and are located predominately in the tropical regions of Africa, South America, and the Caribbean. The Barbados Blackbelly was developed on the Caribbean Island of Barbados. The St. Croix is found primarily on the US and British Virgin Islands. Both breeds are believed to have descended from the hair sheep of west Africa. The Katahdin was developed in the US during the late 1950's crossing African hair sheep (St. Croix) with several purebred meat-type breeds and then back-crossing the hybrids in “all conceivable combinations”. The Dorper, a South African mutton breed, was developed in the late 1930's crossing the Dorset Horn with the Blackheaded Persian.

Katahdin ewe with twin lambs. Note ewe is shedding haircoat.

Hair sheep grow and fatten differently from wool sheep. Hair sheep grow slower, finish at lighter weights, and produce a lighter carcass with smaller cuts than do typical US wool sheep. Hair sheep have a lower percentage of subcutaneous fat (backfat) and seam fat but have a higher percentage of internal fat (fat around the organs) when compared to wool sheep. Hair sheep are also said to produce a milder flavored meat. While hair sheep typically do not produce the type of fast growing, heavy-muscled slaughter lamb preferred by the US mainstream market, they do appear to be well-suited to produce lambs for those ethnic markets that prefer a leaner, lighter carcass.

Hair sheep also merit consideration as maternal breeds in cross-breeding systems. Hair sheep ewes crossed on a meat-type wool ram, such as a Suffolk or Hampshire, can produce a very acceptable market lamb for either traditional mainstream or niche markets. As a bonus, only the ram requires shearing. The Dorper is also being promoted as a terminal sire breed. In this system, even the ram does not need to be shorn.

Mature ewe body weights of hair sheep in the US vary. They range from 65 - 95 lbs for the Barbados Blackbelly, 80 - 120 lbs for the St. Croix, 120 - 160 lbs for the Katahdin, and 170 - 200 lbs for the Dorper. Prolificacy (lambs born/ewe lambing) has been reported ranging from 147 - 181% in the Barbados Blackbelly, 150 - 212% in the St. Croix, 159 - 167% in the Katahdin, and 100 - 150% in the Dorper.

Parasite resistance in composite breeds

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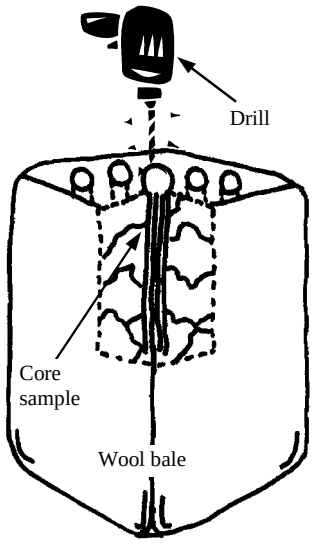
WV Wool Pool Purchases Wool Sampling Equipment

Many of you are familiar with the WV Wool Pool because that's how you market your wool. The Wool Pool recently purchased wool coring equipment that will allow the Pool to sample its baled wool so that average fiber diameter and yield can be analyzed prior to delivery to the processing plant. Sampling and analysis prior to delivery should make it possible for producers to receive payment for their wool much faster than in previous years. The new equipment, which includes a ¾" DeWalt drill and coring tools, was purchased using an $800 grant received by the WV Shepherd's Federation from the 2002 Wool Outreach Program sponsored by the American Sheep Industry Association's Wool Council.

All wool is marketed or traded using objective measurements. These measurements are usually taken at the processing plant where each bale of wool is core sampled and the samples analyzed to determine fiber diameter and yield. When processing plants must spend extra time sampling and analyzing the wool they buy, it takes longer for the processor to issue payments. To eliminate the "wool sampling middleman" and speed up payment to the producer, core sampling will now be done at each of the WV Wool Pool sites.

After the raw wool is mixed and baled, four core samples will be taken from each bale in cross sections of ½". The samples will be shipped overnight to Yokum-McColl Testing Laboratories, Inc. in Denver, CO for analysis. Once the average fiber diameter and yield of the wool from a Pool is determined, the results will be shipped with the baled wool to the processing plant. Since the processor already knows the average fiber diameter and yield of each WV Wool Pool shipment upon arrival, they can automatically send payment for the wool. If no other delays occur, a producer can expect to receive payment from the WV Wool Pool about 2-3 weeks after the wool has been shipped to the processor. As an added bonus, producers participating in the new USDA marketing assistance loan program (see page 7), will have yield and fiber diameter information available when applying to the program.



Hair Sheep

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and crossbreds is somewhat less than is expressed by purebreds such as the St. Croix and Barbados Blackbelly. Of composite breeds, the Katahdin - with its tropical St. Croix foundation genetics - expresses greater parasite resistance/tolerance than does the Dorper, which was developed under arid conditions. Studies also indicate that for crossbreds, fecal egg counts following a parasite challenge - an indicator of parasite load (resistance) - tend to be intermediate between purebred hair sheep and purebred wool sheep. However, packed cell volume following a parasite challenge - an indicator of anemia (tolerance) - tends to recover more quickly in crossbred lambs. Thus, crossbred lambs may benefit from hair sheep genetics in that they are both more resistant and more resilient to the effects of parasitism than are pure wool lambs, while also expressing more acceptable growth rates and muscling than do pure hair lambs.

Because hair sheep replacement ewes have been in relatively short supply, some producers are "upgrading" their existing base ewe flock by breeding wool ewes to hair rams. It generally takes 1 to 3 generations to "take the wool off" and produce a shedding sheep from a shearing sheep. Although upgrading has been considered a cost-effective means of transitioning from wool sheep to hair sheep, a word of caution is in order. Single-trait selection, with selection pressure placed on an individual trait such as shedding, does not guarantee that other desirable attributes of a particular hair sheep breed, such as parasite resistance and maternal fitness, will be expressed in the upgrades. It is also important to do your homework when choosing a hair sheep breed. Different breeds of hair sheep, like different breeds of wool sheep, have different strengths and different weaknesses.

With the growing interest in hair sheep, a variety of research projects are currently underway at a number of universities and USDA/ARS experiment stations. These studies should provide information that will help determine the appropriate role of hair sheep genetics in US production systems, for US markets, and maybe even if hair sheep are right for you!

Online Hair Sheep Resources

OK State Breeds Directory
www.ansi.okstate.edu/breeds/sheep

Maryland Small Ruminant Page
www.sheepandgoat.com

Katahdin Hair Sheep International
www.khsi.org

DorperAmerica
www.dorperamerica.org

National News

Ewe Lamb Payment

On March 26, 2002, the US Department of Agriculture published a new rule in the Federal Register that extends the Lamb Meat Adjustment Assistance Program (LMAAP) for an additional year. Year four of the program will run August 1, 2002 through July 31, 2003. The new rule also includes provisions for a replacement ewe lamb incentive payment for LMAAP years three and four (August 1, 2001 through July 31, 2003).

The LMAAP is designed to, *"help restore purchasing power and enable producers to make significant changes in production practices to adjust to import competition by providing financial assistance to sheep and lamb producers who have recently experienced low prices and poor market conditions."* The intent of the LMAAP replacement ewe lamb program is intended to provide an incentive for producers to expand their flocks through retaining or purchasing ewe lambs for breeding stock, and thereby, increase the available supply of domestic lamb meat.

Sign-up for the program began Monday, April 8, 2002. The payment rate is $18 per eligible ewe lamb retained or purchased for breeding purposes during the period August 15, 2001 through July 31, 2003 (LMAAP years 3 & 4). The application (form FSA-383) is an updated version of the same form used for feeder and slaughter lamb payments, but includes an additional section for self-certification of replacement ewe lambs. All information submitted is subject to FSA verification. Applications are available from your county USDA/FSA office or can be downloaded via the internet at www.sc.egov.usda.gov/FormSearch.asp (type **FSA-383** in the Form Number box). Applications must be submitted to the FSA county office serving the county where the sheep and lamb operation is located by close of business August 15, 2002 for year three benefits and by close of business August 15, 2003 for year four benefits.

For more information, contact your county FSA office or visit the USDA/FSA web site at www.fsa.usda.gov (type **LMAAP** in the Quick Search box).

Ewe Lamb Payment
Eligibility Requirements

- Applicant must be engaged in the business of producing and marketing agricultural products at the time of filing the application.
- Producer must certify that the ewe lamb:
  - is not older than 18 months of age
  - has not produced an offspring
  - does not possess the characteristics of parrot mouth or foot rot
- Producer must be in compliance with all federal and state requirements relating to Scrapie.
- Producer must certify the qualifying ewe lamb will be maintained in the flock for one complete lambing cycle.
- Producer must agree to allow an AMS agent to verify that the ewe lambs meet qualifying characteristics.

Lamb Check-off

The USDA Agricultural Marketing Service has issued a final rule establishing a national, industry-funded, Lamb Promotion, Research, and Information program. The Order was published in the April 11, 2002 Federal Register. The new check-off program is expected to raise in excess of $3 million per year to fund research, promotion, and information programs designed to increase demand for lamb and lamb products. July 1, 2002 is the target date for check-off collections to begin.

The Order provides for an industry-funded promotion, research, and information program for lamb and lamb products - including pelts, but excluding wool and wool products. The program applies to all sales of sheep and lambs. Under the new program, U.S. lamb producers, seedstock producers, feeders, and exporters will pay an assessment of one-half cent ($.005) per pound when live lambs are sold. The first handler, primarily lamb packers, will pay an additional 30 cents ($.30) per carcass. The order calls for a deduction at sale, however, remittance will occur at the slaughter level for most transactions. Lamb imports will not be assessed under the order. The order also calls for a delayed referendum to be conducted no later than three years after assessments begin and contains provisions that will allow refund requests to be made prior to the announcement of the referendum results.

The Order also establishes a 13-member Board of Directors to be appointed by the Secretary of Agriculture from nominees submitted by certified organizations and associations. The Board will represent the interests of commercial producers, seedstock producers, feeders and packers and will determine and administer specific programs designed to develop, maintain and expand domestic and foreign markets and uses for lamb and lamb products. The Board will consist of six producers and three feeders representing regions east and west of the Mississippi River, one seedstock producer, and three packers.

National News

2002 Farm Bill

The 2002 Farm Bill was signed by President Bush, Monday, May 13, 2002. The Bill passed the House of Representatives May 1 with a vote of 280 to 141 and the Senate May 8 with a vote of 64 to 35. The Bill, officially titled the Farm Security and Rural Investment Act of 2002, includes a nonrecourse marketing assistance loan program for wool and mohair. This marks the first time that a Farm Bill has included a marketing program for wool.

The Farm Bill wool program will be effective for crop years 2002 through 2007. The bill includes language that will allow wool producers to participate in the program, even if they market their 2002 wool before the program rules and applications are available next fall. Producers who have already marketed their 2002 wool clip or will market it before the program is announced should keep their sales receipts, indicating pounds sold and date, in order to be eligible for the program. The program also includes a payment for wool on pelts at the slaughter lamb stage per the request of the Colorado and Montana Wool Growers Associations.

The Farm Bill also provides support for the sheep industry through an increase in funding for the USDA's Foreign Agricultural Service international marketing programs and through language that provides eventual country of origin labeling.

Learn more about the 2002 Farm Bill and about the new wool and mohair program at www.usda.gov/farmbill. Click on **Commodity Programs**, then on **Wool and Mohair**.

The following Q&A is excerpted from the USDA Farm Bill web site:

Question: *How will the wool and mohair loan programs work?*
Answer: The new farm legislation establishes a nonrecourse loan program for wool and mohair, with loan rates of $1.00 and $4.20 per pound (greasy basis), respectively. Producers may choose to place their wool and mohair under loan and receive the established loan rate, or they may forego putting their wool and mohair under loan and receive a loan deficiency payment (LDP) equal to the difference between the loan rate and the prevailing repayment rate. USDA plans to periodically announce repayment rates, adjusted for current market conditions. Producers who place their wool and mohair under loan have the option of either repaying the loan at the prevailing repayment rate, or, if market conditions warrant, forfeiting the wool and mohair pledged as collateral as full repayment of the loan. The Commodity Credit Corporation must accept the forfeited collateral as full repayment for the loan, hence the term "nonrecourse" loan.

Question: *I produce wool and mohair and have already sold my 2002 marketing year production. Can I still participate in the new wool and mohair marketing assistance loan program for the 2002 marketing year, or do I have to wait for next year's production to get any benefit?*
Answer: You may get program benefits on your 2002 production. For the 2002 crop only, producers who have already sold their production, (i.e., lost beneficial interest in it) may apply for a loan deficiency payment in lieu of a marketing loan on that 2002 production. Once regulations have been published, the 2002 loan deficiency payment rate will be determined as of the date beneficial interest was lost by the producer.

Question: *For my small flock, the requirement of a core test in order to put my wool under loan is prohibitively expensive. Can I get any benefit from the new nonrecourse marketing loan program for wool?*
Answer: Yes. A loan may be based on the rate for ungraded wool.

Question: *I will be marketing my 2002 wool clip soon. Will I lose any benefits under the new nonrecourse marketing loan program for wool and mohair if I sell my 2002 wool clip now?*
Answer: You may receive a loan deficiency payment for your 2002 crop of wool even though you may have already sold the wool before the regulations are published. The rate will be based on the rate in effect at the time you lost beneficial interest, or the date you request payment, which ever comes first. After the regulations are published, you must request an LDP on your wool before you lose beneficial interest or you will not be eligible for an LDP.

NOTE: The WV Wool Pool 2002 clip has been sold at a guaranteed price of $0.60 /lb, clean and delivered. With the purchase of new sampling equipment by the WV Shepherd's Federation (see article page 3), it is anticipated that producers participating in the 2002 WV Wool Pool can submit the Pool average fiber diameter and yield when applying to the new program. Producers can also have their clip individually tested or accept the rate for ungraded wool ($0.40/lb). Core sampling for individual producers will not be available at the WV Pools.

News Ewe Can Use

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Mark Your Calendars!!!

West Virginia & Ohio Sheep Producers Association
9th Annual Sheep and Wool Festival
Saturday, June 15
Jackson County Fair Grounds
Cottageville, WV

State Fair of West Virginia
Friday, August 9 - Saturday, August 17
State Fair Grounds
Fairlea, WV

Congratulations to the
WV Purebred Sheep Breeders Association
on another successful Show and Sale!