



Buckeye Meat Goat Newsletter



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An educational publication of the Southern Ohio Meat Goat Task Force

Our Mission: To enhance the production and marketing of meat goats through educational and practical experiences.

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Keith L. Smith, Associate Vice President for Agricultural Administration and Director, OSU Extension TDD No. 800-589-8292 (Ohio only) or 614-292-1868

Pooled Goat Marketing

PLEASE note the upcoming sale dates for POOLED GOAT SALES at United Producers in the upcoming future. These sales are direct shipments to the east coast buyers.

The size is important: 45 pounds to 75 pounds male or female **GOAT KIDS**

Monday, May 29, 2006

Delivery of Goats can be made between **4pm and 8pm on Sunday, May 28th** or from **7am to 11am Monday, May 29th** (this is the weekly auction day at Producer's)

A reminder to all producers - Monday is the weekly auction day in Hillsboro so if you have cull goats or other market goats outside the scope for the pooled direct sale this would be a good opportunity to market them at the same time and save yourself an extra trip to another market. These extra goats will be sorted for the regular market and sold Monday morning at the weekly auction time. If you have other livestock to market as well (i.e. sheep, hogs, cattle) they too can be sold that Monday at their weekly auction. Any questions and for more details call Donnie Everetts at 937-393-3424 or 937-763-3118.

Next Sale

Saturday, November 25, 2006

Path to Success Goat Clinic

There is little doubt that meat goats are one of, if not THE, fastest-growing segments of animal agriculture today and that trend is reflected in the annual increases seen in the number of market goat projects at the county fairs throughout the Midwest.

But with that growth there is often a lack of information or knowledge on the proper care and management of these animals. This early summer clinic is designed to be a hands-on program developed around the questions and concerns of young goat-owners and their parents. Through mini-seminars we will cover management, feeding, fitting, clipping and hoof trimming, as well as conducting a mock showmanship class. For more information, contact Dallas & Cheryl Miller at (419) 352-6192 or on the Web: silverwoodfarms.net

Goat Grazing Management

Rory Lewandowski Extension Educator Athens and Hocking Counties

While interest in goat production continues to grow, so does the realization among producers that they must

develop a sound parasite management strategy if they desire to raise goats for the long term. Parasite resistance to all classes of chemical de-wormers currently in use is driving this realization. Are there grazing management strategies that can be used in goat production to decrease reliance upon chemical de-wormers? In this article I want to summarize what we know about goat grazing behavior, examine some effects of various grazing management strategies, and suggest some possible areas of experimentation on the farm.

Goats are natural browsers, meaning that their preferred diet will come mainly from brushy and woody species and that they like to feed on plants that are at head height or higher. Left to their own, in a mix of brushy species and typical pasture grasses, goats will browse on the brushy species for 60 to 70% of their total diet before turning to pasture grasses and/or forbs (weedy species, woodland understory herbaceous plants). It is because of this behavior that goats have gained a reputation for being useful in helping to convert overgrown brushy land back into pastureland. It is well documented that goats will eat a number of plant species that other grazing animals such as cattle either will not eat at all or graze on only minimally. Some of these species include multiflora rose, autumn olive, honeysuckle, poison ivy, wild brambles, green briar, sumac, ironweed, and ragweed. Goats are also adaptable to browsing in rough, broken and hilly topography. Given the acreages of land in southeastern and southern Ohio grown up into brushy cover, combined with the hilly topography, and one might think that there is nothing but smooth sailing ahead for goat production. In fact, goat production is simplified (but not necessarily simple) when there is a good percentage of brushy species (browse) in the pasture mix.

In the summer of 2004 an on-farm study examining the impact of meat goats on browse in a managed grazing system was conducted in Athens County. The study confirmed previously published literature and what a lot of experienced goat producers already knew, namely that goats are very effective at clearing land of brushy species. In fact, after just two rotations through each of 24 plots that were designated as having low, medium and high levels of browse, virtually no browse species remained. The study documented that goats are able to maintain or increase their body condition by utilizing browse in a pasture setting. The study demonstrated that goats browsing brushy species require less chemical de-worming than goats grazing in a grass pasture situation. Although this was not a planned portion of the study, it was an effect that impressed the goat producer. Most likely less parasite problems were observed because goats browsing are feeding up higher than goats on grass pasture. Parasite larvae are found primarily within the first 4 inches of grass height. The study also raised some questions about how quickly brushy species might

disappear from a pasture mix and if it might not be wise to manage in a way that keeps brushy species in the pasture.

A question I'm beginning to get from goat producers hoping to use browse as a part of their parasite control management strategy is: What can I do to insure that there still will be brushy species in my pasture mix in five years? This is an area that needs research. I've searched the literature and most of the studies concentrate on how goats can be used to remove brushy species from an area so that it can return to grass production. Very little is said about how to manage to keep a controlled, maintained percentage of brushy species in the pasture mix. In article by S.P. Hart entitled "Recent Perspectives in Using Goats for Vegetation Management in the USA" and published in the Journal of Dairy Science in 2001, there is a brief mention that the brush veldt in South Africa is being managed for the regeneration of woody species. However, no detail is given on how that is being done. So, short of recommending that goat producers plant multiflora rose and autumn olive (Note that I'm **NOT** recommending this), here are a couple of grazing management strategies that goat producers might try to keep brushy species in their pasture mix and to reduce parasite loads.

First, consider some common grazing tools, stocking rate and grazing time. In the on-farm study in Athens County where brushy species were killed or severely set back in a single grazing season, goats were stocked at either 4 or 8 head in a 75 feet by 75 feet paddock for a week. That figures out to a stocking rate of about 30 and 60 head per acre respectively. At these rates stocked for a week per paddock, we saw not only complete defoliation of brushy species but also girdling of stems of anything less than about 4 to 5 inches in diameter. In a Cornell study that examined use of goats in a woodland setting to control undesirable woody understory, it was found that the highest sapling mortality (stems < 4 inches in diameter) occurred using adult goats stocked at a rate of 20 per ¼ acre (80/acre) and moved to a new paddock every 3 to 4 days. Therefore, it seems logical that if a producer wants to keep the brushy species in the pasture mix, a low stocking rate combined with a short paddock grazing time should be utilized. The producer will need to experiment with a stocking rate and grazing period that will allow some leave area to be left on the brushy species and/or that moves the goats before stems become girdled.

Second, take advantage of the fact that goats are top down graziers and like to graze on immature seed heads. While with most species our grazing management focuses on avoiding seed heads, with goats it might be advantageous to allow their development. This allows the goat to graze up higher on the plant, avoiding the ingestion of parasite larvae. Producers might also

consider trying to add forage species to the pasture mix that contain higher percentages of tannins. There is a body of work from Africa, which while not conclusive, seems to indicate that plants high in tannins may have some anthelmintics properties and bring about a reduction in internal parasites. Plants to consider include lespedeza and birdsfoot trefoil.

Producers may want to experiment with the timing of when goats are allowed to browse brushy species as well. The idea here is to select times of the year that will allow the brushy plant to recover and build root reserves.

If we look at times when brush and trees are defoliated in nature and survive, it seems that early spring and late summer are times when this happens. I'm thinking specifically of defoliation caused by the eastern and forest tent caterpillars from mid-April through mid May, and then the defoliation in late summer by the locust leaf miners. In both cases, the trees defoliated during these time periods survive. Applying this reasoning to goat grazing management might involve a quick rotation through brushy species in mid April through mid to late May. By this time, grass pastures should be tall and heading out. Use grass pastures under a rotational grazing system until August and then switch to another quick rotation through brushy species once again until October. At this time move back to stockpiled grass for fall and winter grazing. I'll emphasize again that this is a matter of producer experimentation, since more research is needed in this area before a definitive recommendation can be made.

I recently heard a goat producer talk about his use of Eastern gamma grass, which is a warm season grass that will grow 6 to 8 feet tall and remain very leafy. He uses it from late June/early July through September or even into October, until weather cools down and growth stops. His experience has been that goats will utilize the Eastern gamma grass in a way similar to brushy species, eating the tall growth down and stopping at about an 18-inch height. This may be worth investigating as an alternative to brushy species, with a couple of points to keep in mind. One, there is a cost to establishing a warm season grass, both in dollars and time. Expect seed cost to be around \$10 per pound, with a seeding rate of around 15 pounds per acre recommended. Warm season grasses are slow to establish. Expect about a 2-year delay from seeding until the grass will be ready to graze. Second, warm season grasses are just that, warm season producers. They will not provide spring forage or forage for fall and winter grazing. Finally, warm season grasses must be managed to leave 12 to 18 inch residues, which seems to work fine with goats but could be a challenge with other livestock species.

Goats present the producer with some encouraging market opportunities. Unfortunately, goats also present some demanding challenges regarding parasite

management in our part of the world. Thinking through grazing management strategies in new ways may help the goat producer to meet those challenges.

New Cydectin[®] products

In the past few weeks, two new Cydectin[®] products have become available in the USA. The injectable product is labeled for use in non-lactating cattle, not including pre-ruminating calves or calves intended for veal, for the control of several internal and external parasites. The new oral formulation is labeled for the control of certain internal parasites of non-lactating sheep. These newly approved products join the Cydectin[®] pour-on product that has been available for use in cattle for some time. The active ingredient in all these products is moxidectin.

Producers are reminded that the use of any dewormer in goats, other than fenbendazole (Safe Guard[®] or Panacur[®]) or morantel tartrate (Rumatel[®] Medicated Premix), constitutes extra-label drug use. Such use is prohibited unless prescribed by a veterinarian in the context of a valid veterinarian/client/patient relationship. Because the number of pharmaceuticals and vaccines labeled for goats is very limited, producers have few choices and extra-label use frequently becomes necessary. However, there are good reasons for being very cautious about extra-label use of drugs and vaccines in goats. Goats do not absorb or metabolize (break down) some products the same as sheep or cows, and their reactions to certain vaccines are not necessarily the same either. This can lead to product ineffectiveness or total failure, development of drug resistant microbes and parasites, or prolonged (or shortened) drug residue times. This last issue is especially problematic because the marketing of animals, or their products, with violative drug residues in them can result in a loss of consumer confidence. The FDA is monitoring this potential problem sheep and goats.

There are sources of help for producers and veterinarians in determining appropriate dosages and withdrawal times when extra-label use of drugs is determined to be necessary. These include the Food Animal Residue Avoidance Database, FARAD (at <http://www.farad.org/>), and various publications such as those listed in the reference list below. FARAD maintains a wealth of information on its website concerning residue avoidance, currently available products and their use, and a library of pertinent publications. For specific questions about residues and withdrawal times, producers and veterinarians can call the FARAD staff at 1-888-USFARAD (1-888-873-2723).

Use of moxidectin in goats is concerning for several reasons, but perhaps the most important is the potential for resistance selection. Moxidectin has persistent

activity after a single dosing. This means it keeps on killing worm larvae, acquired by grazing pastures, for several days. As the concentration of drug in the gastrointestinal lining begins to fall, worms that have some resistance (genetic) to the drug may survive while fully susceptible ones are killed. This favors establishment of a more resistant population of worms in the gut that will in turn, repopulate the pastures. Research has suggested that this period of time where resistant worms may be selected is as long as 35 days. (Kaplan, 2004; Le Jambre et al, 2005) Of course, the benefit to the animal is prolonged protection from parasite infection, but it comes at the expense of selection for resistance to the drug. This effect would be expected with both injectable and oral forms of the drug because of the nature of its tissue distribution and elimination from the body. In addition, side resistance to other dewormers in this general class (ivermectin) may develop as well. Research has been conducted in the southern USA where resistance to both moxidectin and ivermectin has been documented in goats. (Mortensen, 2003) It is believed that under some management conditions, significant resistance can develop in a single grazing season. Some parasitologists are currently recommending that moxidectin not be used in sheep or goats unless evidence exists to suggest that no other FDA-approved product is effective, and then to use it in a selective deworming program, such as FAMACHA, where only a small percentage of animals in the flock is actually treated. With selective deworming, the rate of development of resistant worm populations should be significantly slowed; however, this rate will still depend on specific conditions present at the time it is used.

Extra-label use of moxidectin can also result in very prolonged milk residues in animals producing milk. (see Carceles, 2001; Imperiale et al. 2004a; and Imperiale et al., 2004b) Although this issue may not be a concern in meat goats, significant uptake of moxidectin by kids nursing treated females could occur. To this author's knowledge the potential for residues in those kids, if they were harvested for meat at a young age, has not been reported but is a possibility.

Alternatives to the traditional "drench everybody" approach, at scheduled times of the year, are available. These include the FAMACHA system, protein and energy supplementation, alternate species grazing, the selective use of certain plants in a rotational grazing system, and others. Producers who intend to remain in business for the next several years should begin to acquaint themselves with these alternatives as opposed to reaching for the next "new" drug to control parasites.

Selected References:

http://www.fda.gov/ora/compliance_ref/cpg/cpgvet/cpg615-200.html - FDA's policy on "Proper Drug Use and

Residue Avoidance by Non-Veterinarians”

http://www.fda.gov/ora/compliance_ref/cpg/cpgvet/cpg615-115.html - FDA's policy for “Extra-label Use of Medicated Feeds for Minor Species” (such as sheep and goats)

Baynes RE, et al. Extra-label use of ivermectin and moxidectin in food animals.

J Am Vet Med Assoc. 2000 Sep 1;217(5):668-71.

Carceles CM et al. Milk kinetics of moxidectin and doramectin in goats. *Res Vet Sci.* 2001 Jun;70(3):227-31.

Escudero E, et al. Pharmacokinetics of moxidectin and doramectin in goats. *Res Vet Sci.* 1999 Oct;67(2):177-81.

Imperiale FA et al. Milk excretion of ivermectin and moxidectin in dairy sheep: Assessment of drug residues during cheese elaboration and ripening period. *J Agric Food Chem.* 2004a Oct 6;52(20):6205-11.

Imperiale F, et al. Comparative depletion of ivermectin and moxidectin milk residues in dairy sheep after oral and subcutaneous administration. *J Dairy Res.* 2004b Nov;71(4):427-33.

Kaplan RM. Responding To The Emergence of Multiple-Drug Resistant *Haemonchus contortus*: Smart Drenching and FAMACHA© Proceedings of the Georgia Veterinary Medical Association 2004 Food Animal Conference, Irwinville, Georgia, March 6 - 7, 2004.

Le Jambre LF et al. Characterization of moxidectin resistant *Trichostrongylus colubriformis* and *Haemonchus contortus*. *Vet Parasitol.* 2005 Mar 10;128(1-2):83-90.

Mortensen LL et al. Evaluation of prevalence and clinical implications of anthelmintic resistance in gastrointestinal nematodes in goats. *J Am Vet Med Assoc.* 2003 Aug 15;223(4):495-500.

Scrapie in Goats

by Maggie M. O'Brien, DVM, USDA APHIS Veterinary Services, Designated Scrapie Epidemiologist, OH/WV Area

I have gathered some information together about scrapie in goats and included some sheep info for your reference, as there are some differences between the species, which tend to lead to misconceptions and confusion.

Scrapie is a fatal, degenerative disease affecting the central nervous system of sheep and goats. It is among a number of diseases classified as transmissible spongiform encephalopathies (TSE). Infected flocks that contain a high percentage of susceptible animals can

experience significant production losses. Over a period of several years the number of infected animals increases, and the age at onset of clinical signs decreases making these flocks economically unviable. Animals sold from infected flocks spread scrapie to other flocks. The presence of scrapie in the United States also prevents the export of breeding stock, semen, and embryos to many other countries.

Regarding testing, unfortunately at this time there is no live-animal testing available for use in goats, and the only option is post-mortem testing of the brain, tonsillar, and lymph node tissue of suspect goats or goats exposed to infected goats or sheep. In certain sheep (QQ genotype), the lymphoid tissue of the third eyelid can be biopsied (live animal test) with an approximately 80% sensitivity - meaning that in approximately 80% of positive QQ sheep tested at least 14 months after exposure the third eyelid test will be positive (provided sufficient follicular tissue is present to test). Unfortunately, the third eyelid test does not seem to be an effective test in goats, or even in sheep of genotypes other than QQ.

Regarding genotyping for scrapie susceptibility (not for the scrapie agent itself), again this is currently a viable option only for sheep. Sheep that are QQ at codon 171 are the most susceptible, and those that are RR are most resistant (there have been a handful of RR positives in other countries, but none known so far in the U.S.)

Those that are QR tend to be less susceptible than the QQs but more susceptible than the RRs. In goats there is some preliminary evidence that a K (lysine) instead of a Q (glutamine) at codon 222 may provide some protective value, but this data is still under study, and as yet the K at 222 appears to be fairly uncommon in U.S. goats. Part of the problem is that there has been a relatively small sample size of positive goats, so it is hard to extrapolate the data to the population as a whole. Research continues to be ongoing, however, and the National Scrapie Eradication Program does adapt to take into account advances in research when sufficient supporting evidence exists.

Identification requirements are the same for goats as for sheep, but some options may be more likely to work better in goats and some to work better in sheep, simply based on differences in the industry, management styles, and temperament of the animals (for example, goats seem to be more interested in each other's tags than sheep are!).

Another source of confusion regarding ID has been the fact that there are layers of regulations. I work for the USDA, which sets the federal regulations. In Ohio, our office works closely with the State Department of Agriculture, which places its own regulations on top of the federal regulations (a state can be more restrictive than

federal regulations, but never more lenient). And finally, fairs, shows and exhibitions are free to have their own rules as well, which can be more restrictive yet if they so desire (but again, they cannot relax the state or federal regulations). A couple of years ago the Ohio State Fair ruled that all sheep and goats coming onto the fairgrounds must have official scrapie ID (regardless of age or sex), and many of the county fairs have followed suit - mostly for ease of tracking, I believe. We always encourage callers or attendees at our outreach meetings to contact the fair/show/exhibition in which they will be participating to determine ahead of time whether there are any additional regulations specific to that exhibition.

Official scrapie ID can take a number of forms. It can be a plastic or metal tag with a unique serial number, or with a flock number and a unique individual animal number on it, and can be obtained free through our office (plain white) or purchased (if colors or additional print are desired) - the producer must first contact our office to register their herd/flock in the National Scrapie Database. There are also provisions for ear, flank, or tail-web tattooing as Official Scrapie ID - the procedure is a bit different depending on whether or not the animal is registered and traveling with its original registration certificate. Microchips can be used IF the animal is registered (or enrolled in the Voluntary Scrapie Flock Certification Program, an extra level beyond simply calling our office to get a herd/flock number) and traveling with the registry certificate on which the microchip number is referenced and traveling with a microchip reader provided by the owner. Not very many people elect to use microchips, but it is an option. As with ordering tags, the producer should really contact our office first to ensure he or she is tattooing or microchipping "legally" rather than finding out after the fact at an inopportune time (at the show!).

As far as which animals are required to have Official Scrapie ID, all sexually intact goats and sheep over 18 months of age must be officially identified to herd/flock of birth at change of ownership or at the time of commingling with other animals at a point of interstate commerce (most fairs/shows/exhibitions, etc). Additionally, unless they are moving in slaughter channels, sexually intact goats and sheep under 18 months of age must also be officially identified to herd/flock of birth at change of ownership or at the time of commingling with other animals at a point of interstate commerce. This is a common source of confusion with regards to fair animals, as most fairs are not truly terminal shows/sales (more than once animals have been peeled off the truck before entering the slaughter facility).

Owners must keep records of the date the animals were officially identified, the official ID numbers applied, and the name and address of the owner of flock of birth (if not

already identified to flock of birth). Upon transfer of ownership they must also record number of animals acquired or sold/disposed of, date of acquisition or disposition, name and address of person from whom the animals were acquired, name and address of buyer or recipient of animals, species and breed, and (when required) certificate of veterinary inspection/health certificate. Records must be kept for 5 years following the sale/disposition of the animal.

For more information or to order tags contact the USDA-APHIS office in Ohio at (614) 469 - 5602 or toll Free in OH/WV: (866) USDA – TAG

For more information on scrapie, go to: <http://www.aphis.usda.gov/vs/naahps/scrapie/>

Editor - Jeff Fisher

fisher.7@osu.edu