

# Goat Producer's Newsletter

Terry Hutchens Extension Associate for Goat Production UK & KSU  
Dr. Monty Chappell, Extension Small Ruminant Specialist UK  
Dr. Marion Simon, State Extension Specialist for Small Farm &  
Part-time Farmers KSU

## “Enough to Make Your Skin Crawl” Goat Skin Disease

### Bacterial Skin Diseases of the Goat

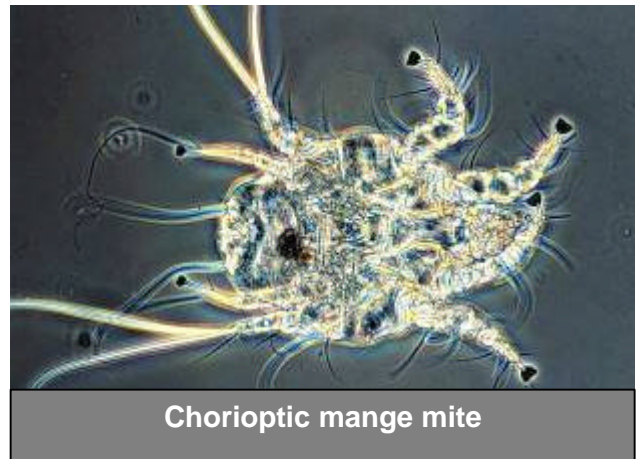
Terry Hutchens Extension Associate, UK  
and KSU

The wet weather continues, and many Kentucky goats are showing signs of skin disease. There are volumes of skin disease information therefore, we have tried to narrow the scope and describe the most common diseases being diagnosed by Kentucky veterinarians.

The skin disease most commonly seen in late winter and early spring is called **Dermatophilosis**, caused by the bacteria *Dermatophilus congolensis*. During dry weather, the organism may survive in soil or on goat hair. Any kind of injury that breaks the skin surface or causes damage to the epidermis such as external parasites, shearing or feed bunk irritation, allows the organism to penetrate and establish within the skin of the goat.

As would be expected, the bacterium remains inactive until the onset of rainy weather, humid weather conditions. Therefore, for Kentucky, the active season begins in March and perhaps ends as late as July.

Signs of the disease in the adult animal can be seen on the feet, nose, muzzle and scrotum. Kids are most often infected in the ear area. Lesions begin as raised scabs, and these infection sites may become covered with matted hair. Dry



Chorioptic mange mite

crusts, scaling and hair loss characterize healing lesions or chronically infected lesions. Secondary infections may also occur, such as the foot scald bacteria, *Fusobacterium necrophorum*, causing pain and itching on infected sites.

Diagnosis of the disease is by skin biopsy and smears from most active lesions.

### Treatment and Prevention:

1. Avoid housing in wet, muddy-crowded conditions.
2. Construct a number of three sided rain shelters rather than dependence on one housing site such as a barn. Movable shelters are ideal for small farms.
3. Gutter barns and provide well-drained lots.

4. Provide standing baths, deep enough to contact the infected areas of adult goats. Treat with iodine compounds or 2 to 5% lime sulfur, once a week for 4 weeks.
5. Where practical, groom infected goats with a brush to remove scabs. Disinfect the brush between each animal.
6. Control external parasites.
7. For animals with extreme conditions, treat with penicillin-streptomycin, or tetracycline. Contact your veterinarian for details.

A second possible skin disease is **Staphylococcal Dermatitis**. Staphylococcal skin infections are common in goats and are the result of infection and inflammation of hair follicles. The main lesions are pustules. These pustules often discharge exudates and become encrusted. Common features of the chronic or healing stage of the disease are hair loss and scaling. Many small pustules may appear on the teats, udder, perineum (inner thighs), and the under side of the tail.

In extreme cases, the infection becomes generalized resulting in infection of the skin of the abdomen, inner thighs, the back and neck areas. Localized lesions on the udder can be washed with **chlorhexidine** or an **iodine based shampoo**. Dry the area with individual paper towels and treat with an **antibiotic ointment**. Animals need to be treated for 1 to 2 weeks. Check with your veterinarian for specific antibiotic needs. Antibiotic sensitivity tests are often needed.

### Mange Mites

**Chorioptic Mange:** This mite lives on the surface of the skin of the goat. Some animals may be carriers of the mite with out showing signs of infestation. These mites can live in barns and pens for up to 10 weeks. However, cold temperatures favor

the mite with severe cases occurring in the winter.

Infestation signs are the formation of raised pustules on the skin, crusting, hair loss, reddening of the skin and eventually ulceration. These signs are first seen on the lower limbs, scrotum, udder and between the thighs. Rubbing and scratching is common.

#### Treatment and Prevention:

1. Avoid housing in wet, muddy-crowded conditions.
2. Construct a number of three sided rain shelters rather than to depend only on one site such as a barn. Movable shelters are ideal for small farms.
3. Collect and burn all bedding
4. Store hay separate from goat housing site
5. Remove animals from the housing site and disinfect the housing
6. All goats must be treated at the same time and treatment regiment must be followed
7. Treatments: See Table 1

Table 1

Lime sulfur	4 times at weekly intervals	2.0 – 5.0% dip
coumaphos Co-Ral	2 times at 10 -14 day intervals	.25% spray .50% dust
trichlorfon Metrifonate, Neguvon and others	2 times at 10 -14 day intervals	.20 sprays and dips
amitraz Mitaban, Preventic, Tactic and others	2 times at 10 -14 day intervals	.025% - .05% spray
lindane	2 times at 10 -14 day intervals	.06% - sprays .03% dip
<ol style="list-style-type: none"> <li>1. Read and follow all label directions and restriction.</li> <li>2. Consult with your local veterinarian</li> </ol>		

regarding product and treatment.

3. **\*Note: Chorioptic mites** may be too superficial, that is, they do not feed deep within the skin of the animal and therefore **ivermectin my not be an effect treatment.**

**Sarcoptic Mange:** This disease is caused by a mite that tunnels through the skin. If the disease is diagnosed, it must be reported to government authorities. Several weeks after infection, goats develop small itchy nodules, typically on the head. In some goats, the disease may progress no further, however in others, extensive skin thickening and hair loss occurs because of scratching and mite damage. In addition, the infestation may affect the head, neck, thorax, inner thighs and udder area. A secondary bacterial infection may develop and in rare cases result in death.

**Subcutaneous ivermectin injections** may be very effective in controlling this disease. Contact your local veterinarian for assistance in diagnosis and treatment. Note: Subcutaneous injections of ivermectin have little or no effect on internal gastrointestinal parasites.

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Source: M.C. Smith, D. M. Sherman, 1994, Goat medicine, ISBN 0-8121-1478-7  
S. Mitcham, A. Mitcham, 2000, Meat goat, their history, management and diseases, ISBN 0-9664476-2-X

## “Dry Matter”

### What it is, and how to use it

The word **dry matter** seems to turn many people off. I have actually seen this in practice. When speaking to farmers about forages and grazing goats, all I need to say is the brain-deadly word, “dry matter”, and the crowd’s attention is forever lost. It is my feeling that the term dry matter brings to mind something not very pleasant. Perhaps farmers have the understanding that dry matter means something dry and dusty and sticks in your throat or clogs up your lungs. On the other hand, it may bring to mind

something indescribable or impossible to bring into the framework of volume, weight or area. I can relate to this when speaking in terms of billions of dollars or light years away.

However, if given time and practice, the use of **dry matter oriented pasture management** may very well be one of the best tool in the old-mental-tool box. First, we need to define dry matter. ***Dry matter is the percentage of plant sample, which remains after all the water, has been removed from the sample.***

Why are we concerned about removing all the water from a plant sample? The answer is, because it is difficult to describe a quantity of plant material or percent plant nutrient within a plant when plant water levels constantly change. Plant water levels are highest in wet conditions and lowest in dry or saline conditions. Water content varies from spring to summer to fall and presents a formidable challenge when trying to recommend numbers of goats to the acre, or describe the percent of protein content in alfalfa hay. Dry matter just gives a baseline for describing weight, volume, area and content of the forage.

### Use of Dry Matter Measurements to Determine Stocking Rates

How many times have you ask your self, how many goats should I put on this 5-acre field? In answering this question, you need to know, how much dry matter is in the field and how much dry matter the goats will consume each day. All these questions can be answered when forage weight, volume and consumption rates are converted to dry matter.

#### Field Assessment Method

1. What is the average weight of the goats grazing the 5-acre field? How many goats are you going to graze?  
**Example: 25 does at 125 lbs each**
2. How much dry matter will a goat eat per day? We generally allow 3.5 to 5.0% of live body weight for dry matter needs.

- a. **Example: 25 does x 125 lbs = 3125 lbs of body weight. 3125 lbs x .05 percent of body weight = 156 lbs of dry matter needed each day.**
3. How much dry matter is in the 5-acre field? Take a standard yardstick or meter stick, walk through the 5-acre field, and measure the height of the forage standing in the field. Do not pull or extend the tip of the blade for the measurement, or measure seed heads, but simply set the stick on the ground and read the measurement from the top-most dense area of the pasture. Check the height at 10 or more locations. The greater the number of samples, the greater the accuracy of your dry matter estimate.
- a. **Example: The average height of the tall fescue-clover pasture was found to be 12.5 inches. Using the table on page 6, (12.5 inches X 190 lbs dry matter/inch of pasture height/acre) = 2375 lbs dry matter per acre.**
4. How many days of grazing can I safely gain from 2375 lbs of dry matter/acre being grazed by 25 does?
- a. **Example: Goats cannot graze 100% of the dry**

**matter on the pasture. Therefore, a residual grazing height must be set. In this case, we have chosen to graze off 50% of the forage or graze down to 6 inches and move the goats. So (2375 lbs \* .50%) = 1188 lbs available forage/acre. So (1188 lbs of available forage/156 lbs of dry matter need each day) = 8 days of grazing for each acre.**

5. How much should I let the pasture regrow before returning to graze a pasture? Figure 1 illustrates this concept of grazing management very nicely. This figure shows that intake and digestibility decline with maturity of the pasture plants. However, dry matter production per acre increases with maturity. With these two opposing factors in mind, the solution is to make a compromise on quality, (intake and digestibility) and yield. The compromise is somewhere between boot stage of the grass and bud stage of the legume (**see crossing of the lines of the graph**) and beginning head formation and full bud. A second and third compromise can be made for lactating and

growing kids. These animals should graze to the left side of the graph juncture while mature dry pregnant does can maintain well on the right side of the juncture.

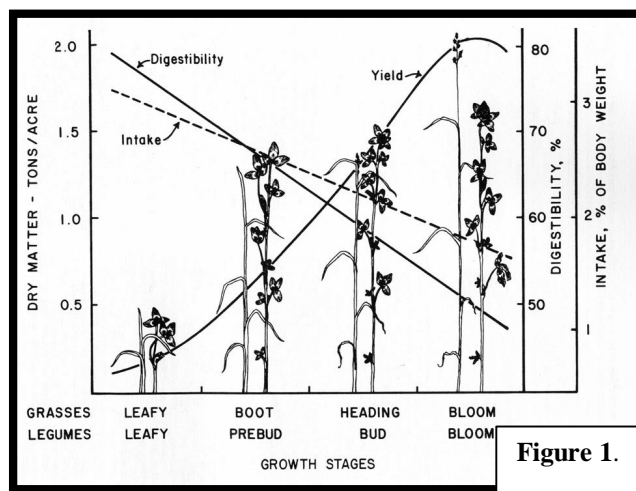


Figure 1.

# Field Dry Matter Evaluation Form

Clipboard Copy

Terry Hutchens, Extension Associate UK/KSU

Determine the area of the field	Steps the length and width of the field. Make steps three feet long and record in columns to the right.	Length X 3 ft =	Width X 3 ft =	Length in ft X Width in ft =
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Sample Height 1  -----	Sample Height 2  -----	Sample Height 3  -----	Sample Height 4  -----	Sample Height 5  -----	Sample Height 6  -----	Sample Height 7  -----	Sample Height 8  -----	Sample Height 9  -----	Sample Height 10  -----
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Sample Height 11  -----	Sample Height 12  -----	Sample Height 13  -----	Sample Height 14  -----	Sample Height 15  -----	Sample Height 16  -----	Sample Height 17  -----	Sample Height 18  -----	Sample Height 19  -----	Sample Height 20  -----
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Total height from samples 1-10 / 10  -----	Average Height from samples 1-10  -----  <b>A</b>	Total height from samples 11-20 / 10  -----	Average Height from samples 11-20  -----  <b>B</b>	Grand Average Height  ----- <b>A + B</b> ----- <b>2</b>	What is the predominant forage type?          <hr/>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-bottom: 1px solid black; padding: 5px;"><b>C</b></td> <td style="padding: 5px; text-align: center;">Average Height</td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px; text-align: center;">X</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 5px;"><b>D</b></td> <td style="padding: 5px; text-align: center;">(Lbs/acre inch)</td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">Value of forage type from table on back side =</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 5px;"><b>C X D =</b></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">( lbs of dry matter/acre)</td> </tr> </table>	<b>C</b>	Average Height		X	<b>D</b>	(Lbs/acre inch)		Value of forage type from table on back side =	<b>C X D =</b>			( lbs of dry matter/acre)
<b>C</b>	Average Height																	
	X																	
<b>D</b>	(Lbs/acre inch)																	
	Value of forage type from table on back side =																	
<b>C X D =</b>																		
	( lbs of dry matter/acre)																	

How many grazing days are available in this field?	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-bottom: 1px solid black; width: 20%;"></td> <td style="border-bottom: 1px solid black; width: 20%;"></td> <td style="border-bottom: 1px solid black; width: 20%;"></td> <td style="border-bottom: 1px solid black; width: 20%;"></td> <td style="border-bottom: 1px solid black; width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Number of Animals</td> <td style="text-align: center;">X</td> <td style="text-align: center;">Average Wt.</td> <td style="text-align: center;">X</td> <td style="text-align: center;">0.05% Live weight</td> </tr> <tr> <td style="border-bottom: 1px solid black; text-align: center;">.50</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td style="text-align: center;">----- (50%)</td> <td style="text-align: center;">X</td> <td style="text-align: center;">-----</td> <td style="text-align: center;">X</td> <td style="text-align: center;">-----</td> </tr> <tr> <td style="text-align: center;">% Residual</td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;">lbs Dry Matter/Acre</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;">= Grazing Days/Acre</td> </tr> </table>						Number of Animals	X	Average Wt.	X	0.05% Live weight	.50					----- (50%)	X	-----	X	-----	% Residual				lbs Dry Matter/Acre					= Grazing Days/Acre
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				= Grazing Days/Acre																											

<p align="center"><b>Dry Matter Estimates</b></p> <p align="center"><b>In pounds/inch of pasture height/acre<sup>3</sup></b></p>		
<b>Species</b>	<b>Average<sup>1</sup></b>	<b>Range<sup>2</sup></b>
Alfalfa/Alfalfa and Grass	225	75-400
Bermudagrass	260	150-500
Caucasian bluestem	180	75-350
Kentucky bluegrass	160	100-175
Native warm season grasses	100	50-250
Orchardgrass	180	75-300
Orchardgrass and clover	200	100-325
Red Clover	220	100-300
Annual Ryegrass	250	75-400
Oats, rye, wheat (annual cereals)	150	75-250
Tall Fescue	210	100-350
Tall Fescue and clover	190	80-325
<p><sup>1</sup> The values should only be used as a guide. These estimates assume thick, well-fertilized, actively growing stands.</p> <p><sup>2</sup> Range covers thin, non-fertilized, often unmanaged stands to the high end, which represents thick stands with rapid growth and high yields.</p> <p><sup>3</sup>Source: D. M. Ball, C.S. Hoveland, and G. D. Lacefield, 2000:Forage Crop Pocket Guide, Item # 32-0001, Reference # 20064</p>		

### **2002 Census of Agriculture is out**

The 2002 meat goat inventory, according to the 2002 Census of Agriculture is 61618 head of goats found on 2979 farmers in Kentucky. If you compare the 2002 number to the 1997 inventory of 13037 head on 1712 farms, there is a 79% increase in inventory since the last census. This is an impressive increase however; my personal feeling is that we were much larger than this number. For 2002, Kentucky was assisted as being third in the nation in numbers of goats marketed 42,923 and fifth in inventor. However, a 2003 market potential study assisted Kentucky to be third in the nation in goat numbers that may approach 100,000 head.

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Terry Hutchens  
Extension Associate Specialist for Goat  
Production  
Animal Sciences  
615 W.P. Garrigus Building  
Lexington KY, 40546-1027  
University of Kentucky /  
Kentucky State University  
Phone 859-257-2465  
Fax 859-323-1027  
[thutchen@uky.edu](mailto:thutchen@uky.edu)  
[http://www.uky.edu/Agriculture/Animal  
Sciences/goat/goats.html](http://www.uky.edu/Agriculture/AnimalSciences/goat/goats.html)

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