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## **FORAGE: AN ECONOMIC NECESSITY**

By

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### **Present Approach to Goat Feed Economics:**

Today's meat goat market is called a "*breeder's market*". That is to say, there is a high demand for animals for breeding purposes. Many Kentuckians are looking for alternatives to traditional agricultural enterprises. Among these alternatives is the production of goat for meat to accommodate the needs of the ethnic populations within the US.

Therefore the South African Boer goat is highly sought after in Kentucky and throughout the southeast. Almost any goat brandishing a red head and a white body has been earning top dollar for the seller.

### **Importance of Feed Costs:**

For the most part, Kentucky producers have raised the Boer goat as a penned animal. The majority of the diet has been made-up of commercially prepared complete feeds. To date consideration of feed cost has been secondary to producing desirable animals (usually maintained in high body fat conditions) for the breeding stock market.

However, once breeding stock numbers come into equilibrium with the market demand for breeding animals, pen feeding of most goats will be far too costly for industry profitability. When meat becomes the primary source of income effective use of browse plants and forage will be the key to industry profit.

All breeds of goats are rumen animals. Ruminants use microorganisms to convert digestible plant materials to fatty acids, which are then converted to nutritive compounds. Notwithstanding, the goat is a very effective forager of plant parts when compared to other ruminants competing for feed in the same grazing environments. The goat's ability to consume a wide variety of plant species as well as having the ability to select the most nutritious portions of the plant allows the goat to survive in harsh feed limited situations.

Goats have a physical advantage over traditional farm animals due to the narrow mouth, mobile upper lip and highly dexterous tongue. The tongue, in conjunction with the upper lip can move in between plant parts and harvest the most desirable portions of the plant. In addition, the hind leg of the goat allows the animal to reach high into trees and shrubby plants and select nutrient rich plant parts.

As in other domestic ruminants, goats need protein; for tissue growth, energy; for driving the metabolic activities, minerals, vitamins and water to engage absorption, transportation and necessary biochemical activities. In most cases all of these nutrient components can be derived from Kentucky's abundance of forage plants.

### **Forage Resource Development Plan:**

Each Kentucky goat and/or ruminant livestock farm should identify forage as a major focal point for farm development. Farm *forage resource development* should reflect soil capabilities, topography of the farm as well as desired management intensity of the farm manager.

The first step is to find the farm maps, dust them off and use this information to identify blocks within the farm offering various potentials for forage production. The following lists of forage blocks may assist in identifying potential resources.

1. *Block 1 – winter annuals* – Winter annuals are cultivated crops planted in the fall and harvested by grazing in the spring. Winter annuals can support does that have kidded and are lactating. If body condition drops more than 1-point (on a 1 – 5 scale) additional grain (energy), .5 to 1 lb/head/day should be fed. Ideal body condition for lactating does should be 2.5 – 3.0. Energy supplementation becomes more important with multiple births. Some examples of winter annuals for Kentucky are small grain pastures of oat, wheat and rye.
2. *Block 2 – brows plants* - Goats by nature are browsing animals. Goats would prefer browsing to grazing. Many Kentucky farms have become overgrown with small trees, brambles, brush and assorted woody plants. Such conditions are often found where mowing is difficult due to slope and rock outcrops. Goats can be moved from small grain pastures into brows areas as soon as full foliage has accumulated on the woody plants. If only 1/3 to 1/2 of the foliage is removed during a single grazing season, the plant will respond with abundant re-growth the following year. On the other hand continuous defoliation and de-barking will eliminate these plants. As the goats establish grazing boundaries and allies between woody plants, grasses will return to these area and cattle, sheep and goats can effectively utilize these areas.
3. *Block 3 – perennial cool season pasture grasses, tall fescue, orchardgrass, Kentucky bluegrass* – Parasite egg and larva loads are generally high on perennial pasture grasses during the spring of the year. While goats are grazing winter annuals and/or brows plants, cattle can graze the spring pasture. Secondly, hay can be harvested from perennial pasture thus eliminating the majority of parasites prior to grazing by susceptible goats. Ideally grazing should be controlled allowing at least a 30-day or longer rest period between grazings. A 30 day rest and regrowth period facilitates the management of the grazing height well above the primary parasite infection zone located below the 3-4 inch grazing level. Summer pastures (July, August, and September) may be adequate for dry does but growing animals should be supplemented with an energy and protein source.
4. *Block 4 – summer annuals* – Summer annual crops are planted in the spring and can be harvested by grazing or by making hay. Soybean, corn, sunflower, pearl millet and Sorghum Sudan hybrids are all potential choices. Annual crops are more expensive to establish therefore they should be heavily stocked with dry does and/or market animals. Taller crops like corn or Sorghum Sudan should be allowed to get twelve inches above the heads of withers or doelings before grazing. Once grazed to desirable height, grazers should be rotated forward allowing 7 to 20 days for regrowth. Leaving a 6 to 8 inch stubble height will

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- promote rapid regrowth and reduce parasite infections by using the grazing height as a management technique.
5. Block 5 – perennial legumes – Perennial legume crops can be harvest two, three sometimes four times per season. Legumes like alfalfa and Sericea lespedeza can be used effectively within a goat-grazing plan. Alfalfa, a cool season legume is earlier than Lespedeza therefore spring born nursing kids can graze ahead of their mothers by passing through creep gates into fresh alfalfa. Lactating does have limited access by keep does behind electric fence and are forcing them to clean up the alfalfa. Alfalfa stands can be thinned if the crop is not harvest to crown level. The next growth can be harvested for hay followed by a second grazing period for the weanling market animals and replacement doelings. It is important to note that dry does or bucks should be used only as clean up grazers otherwise they will become fat resulting in reproductive health problems.

Sericea lespedeza is a warm season legume with a high potential for goat production. Sericea can be grazed and/or harvested for hay. Harvest should begin once the crop has reached 15 to 20 inches in height. A 4-inch stubble should be left to insure proper re-growth. Sericea can be harvest 2-3 times within a season. Winter annual cereals, clovers and vetch can be over-seed into the crop in the fall for early spring grazing. Sericea can also be used for interseeding into standing perennial cool season grass pastures. Sericea Lespedeza can be established on soils and slopes known to be undesirable for clovers and alfalfa.

For additional information relating to forage establishment and selection contact your local University of Kentucky, Cooperative Extension Office.