SUSTAINABLE BRUSH CONTROL

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The major options that a producer has for brush control includes chemical, fire, mowing and goats. Sustainable Agriculture is a management system of farming which reduces costs of purchased inputs, minimizes the impact of the farming system on the immediate and off-farm environment, and provides a sustained level of production and profit from farming (Francis et al., 1987). Therefore, sustainable brush management requires a minimum of purchased inputs, minimal environmental pollution, and yet achieves the objectives of brush management in a cost-effective manner. Goats, if managed right, are the most sustainable option that we have for brush control. They require the least inputs-investment in animals, result in little pollution, control most brush species and actually turn a profit while converting brush to a saleable product.

Langston University has conducted a number of demonstrations over the years on the use of goats to control weeds and brush. Early work with the Forest Service in Arkansas used goats to control oak species coming up in a pine plantation. Later work, conducted near Hugo, used goats to control the understory and for farm diversification. We conducted studies at the Black Kettle National Grasslands in Cheyenne, OK using goats to control shinnery Oak. A project in Kansas used goats to control sericea lespedeza and brush in the pastures. A study with the Army Corps of Engineers at Lake Oolagah used goats to control brush and other vegetation around the lake. They are particularly interested in goats because of restrictions on using herbicides on government property. This summer, we hope to be conducting a new demonstration project on the use of goats for controlling post and blackjack oaks.

The first consideration in the use of goats for brush control is the species of brush. Ted McCollum at OSU observed that goats grazed most extensively on hackberry, elm, dogwood, redbud, greenbriars and blackberries. They moderately utilized chittim wood and sumac from which they stripped the bark. Grasses were in this second category of utilization. Species that were poorly utilized included blackjack, post oak and buckbrush. Dietary preferences will differ for goats raised in different parts of the country, time of year and other plant species available for consumption. The best way to know what goats will eat is to get some of your own.

The second question is how many goats. This is more complicated than saying how many cattle. Your objective is to basically overgraze the brush to kill it. If you stack enough goats on a pasture, they will strip it until it looks like it was mowed, but productivity will suffer as it does in overstocked cattle. A moderate stocking rate of 2-4 goats per acre of solid brush will control brush. It will take 2-3 years to control most brush at this stocking density. Goats can be sold as the brush disappears, but some goats will have to be maintained (½ to 1 goat per acre) to keep the sprouts down. Goats are very compatible grazers with cattle or horses. Goats need some grass in their diet.
but it is a minor part of their diet.

If the brush is 25 ft tall before goats are turned into the pasture, they will be slow at controlling it. They will put a browse line that is head high on the limbs, but will slowly kill the trees by barking them. Texas scientists recommend chaining or a controlled burn prior to goating to control the tall brush. Texas work has shown that shinnery oak can be eradicated by mowing followed by using goats to control the resprouting.

The three big problems that need to be addressed for the effective use of goats for brush control are fencing, internal parasites and predators. One of the greatest expenses in a goat enterprise is the cost associated with fencing. Without good fencing, goats can become a big management headache. Goats will not stay in a pasture fenced with five strands of barbed wire. However, if one adds one strand of electric fence about 8 inches in front of the fence and 14-16 inches high, goats can be kept in. The three secrets of successful electric fence use with goats are to train them to electric fence before putting them out, put up the fencing right using quality materials and check the voltage on the fence every day and maintain 4500 volts. Goats can be contained with as few as 3 electrified wires, but 4 is more secure. As long as goats have something to eat inside the fence, they don't try to escape very much except for a few individuals destined for barbecue.

Goats may be kept in using sheep and goat wire, a net wire fence that has 10 inches between the wires that run up and down to allow goats to get out of the fence when they get caught by the horns. Standard field net wire fence will catch goats by the horns and hold them there until someone gets their head out or a coyote eats them. Sheep and goat wire costs $75.00/330 ft. roll. It can be fastened to existing fence or regular posts. Some producers put a strand of barbed wire at the top and/or at the bottom of the wire to keep horses from breaking it down and predators from coming under. A five strand barbed wire fence may be modified for goats by addition of 3 strands of barbed wire at the bottom and stays every 5 ft.

Predators can destroy your goat herd in only a few nights. The most reliable method of predator control is the use of good guard dogs. Not all guard dogs are good and some have bad habits such as roaming the country. Spayed females and neutered males work best. Guard dogs are another animal to be managed. In addition to feeding, they need dewormed and vaccinated on a schedule. Sources of dogs are listed under the classified ads. The working life of a guard dog is 2-3 years. The biggest cause of death is being run over by vehicles, usually in the pasture. Two guard dogs are about the minimum and will take care of 2-300 goats.

Donkeys are a low-input guard animal in that they eat grass. Only jennies or geldings should be used. It is best if they are bonded to the goats at an early age, but some mature animals will work well. Use only one donkey per pasture and keep others away or they will buddy up with one another and forget about the goats. Llamas can also be effective guard animals.

Internal parasites, commonly called worms are a problem of goats that is greatly affected by management and weather. Goats grazing brush require less deworming than animals grazing closer to the ground. Hot, dry weather reduces parasite problems. Grazing with cattle also reduces worm problems. Animals can be dewormed with a number of different dewormers when they become
wormy. The best way to determine the need for deworming is to count the number of worm eggs in a fecal sample. Some veterinarians will do this for you. For a sample, take three pellets from each of ten animals. We are conducting several fecal egg counting workshops to teach producers to do their own worm egg counts.

Goats need few vaccinations. Kids should be vaccinated for tetanus and enterotoxemia around weaning and four weeks later. If caseous lymphadenitis (cheesy gland) is a problem, it can be vaccinated against. Some reproductive diseases which cause abortion such as vibrio and chlamydia can be vaccinated against if necessary. Working facilities for sorting, deworming and vaccinating can be simple. Livestock panels wired to T post can be used for a corral. A working chute just a little wider than a man can be made using sheets of plywood. The chute should be no more than 15 ft long because animals will crowd and smother in longer chutes. The chute should be filled with no more than 12 goats and the animals should be worked starting from the rear of the chute.

Goats can be wintered on the same regimens as beef cattle such as baled hay and a protein cube. Some producers prefer pellets to cubes. The best way to feed hay is to roll the bale out on the ground. Goats will climb on round bales and soil them or the hay bale can fall over on them. An elevated hay feeders work well, but tend to be pricey. Some people set a round bale on end and wrap two cattle panels around it. This works well except for animals with big enough horns to get caught. Goats can eat pellets or shelled corn off the ground.

For kidding, goats do not fare well in cold rainy weather. Kidding later towards late spring reduces weather problems. Also, during lactation when goats have the greatest nutrient demand, the brush will be actively growing. If you like to kid early, goats need shelter and kidding animals need to be separated from the herd. Goats will need quite a bit of feed if pasture is not available.

There are goat auctions in Oklahoma located at Antlers, Hennesey, Jones, Muskogee, El Reno, Perry, Purcell, Sayre, Ada, Enid, Bristow, Collinsville, Meeker, Prague and Leech. A potential producer should visit a goat auction, watch a sale and talk to people about seasonality of prices, preferred class of goats and other factors that determine the price received. One can make connections with other goat producers and learn from them.

While any goat will eat brush, the Spanish goat seems to excel in this category. This is the only 'breed' of meat goat available in large quantities. Other breeds include the Tennessee stiff-legged goat (fainter goat) the hill goats from the eastern US, the Boer goat and Kiko goats. Boer crossbreds bring good prices when sold for meat and Boer bucks are readily available. The best way to buy goats is directly from a producer. Visit several producers and buy from the one that manages his animals most like you would. When you buy animals at the auction, you may be buying an animal that someone sold because they had a problem.

Attached is a general budget for a meat goat operation. While goats can be profitable, they are not the way to riches. The secret to making money with goats is to spend a minimum amount of money in producing them. Direct sales of animals can also enhance profitability.
Income
Sell 1.25 kids/doe (1.5 kidding rate -.25 for replacement)
Price $.80/lb, 50 lb., $40/kid
Income/doe (1.25 kids*$40.) $50.00
Income cull does .2 hd * $25 5.00
Weed and brush control (save in spraying) ???
Total income 55.00

Expenses
Pasture 5.00
Fencing 4.00
Health (vaccination and deworming) 4.00
Buck service 3.00
Raising replacement 10.00
Salt and water 2.00
Winter feeding 10.00
Predator control 2.00

Total expenses 40.00

Profit/doe $15.00

Sources of goat information include The E (Kika) de la Garza Institute for Goat Research at Langston University, the Oklahoma Meat Goat Association, American Meat Goat Association, Texas A & M University bulletins, goat web sites. There are several goat magazines such as the Goat Farmer, Meat Goat News, Ranch Magazine, and Goat Rancher.
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