



KIDDING in the BRUSH
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Goats Unlimited is located in the rolling hardwood hills situated in the northern middle section of Tennessee. It is advantageous as our business is service oriented toward land cleaning and enhancement, restoration of marginal lands and riparian areas and weed abatement with our KIKO meat goats. For the goats, that means year-round native vegetation is available and supplementation is kept to a minimum. We are careful in our brush management not to eradicate but to manicure the vegetation into high quality feed for the goats. This is important when using the areas for kidding season; March/April and/or October/November. The feed has to be of high quality for body condition score maintenance, milk production and at the same time "bushy" for hiding the kids. The vegetation is being managed to abate invasive plant specie encroachment into hay fields, manage beneficial insect motels through IPM (integrated pest management), eradicate noxious/poisonous plants and mitigate fire.

Our goat breed of choice is the KIKO. This breed was developed on the South Island of New Zealand and is known for its survivability and growth rate in rugged mountainous country. They are superior meat producers; extremely adaptable to diverse vegetative conditions. The does are selected for increased depth of heart girth, spring of rib, width across the withers and rump, length and width of back and loin and fullness of hindquarter. They carry their body weight on sturdy legs and solid feet. They have compact udders with two teats and milkability, twin and are superior mothers with a pleasing disposition. And important under our management conditions, they are bipedal and know how to browse.

When kidding in the brush, the above noted conformation characteristics and demeanor are extremely important. The does are expected to travel rough terrain browsing woody vegetation, carrying twin fetuses. They need excellent feet/legs, and body capacity. Not only are they carrying twins, they need lung capacity for climbing and rumen capacity. Brush vegetation is high in lignin and cellulose (fiber) which takes a lot of space in the rumen. Since this feed source is not highly digestible, it has a long retention time in the rumen.

Compact udders with high residual milk capacity are a must. Pendulous udders in the blackberry thickets, buck bush and privet have extensive damage done to them and the does do not want the kids to nurse as it is painful. Milkability and quality of colostrum and milk is important as the kids will double their birth weight in 10 to 14 days. And last, but not least is motherability with a pleasing personality/disposition.

Motherability is a genetically heritable characteristic trait, approximately 35 to 40%. It affects weaning weight and survivability of the young kids. Weaning weight is indicative of the milking ability of the doe. Survivability is a test of the doe's physical/mental ability to persevere environmental challenges/stresses.

As producers, we can accumulate an amazing amount of knowledge by observation. Make a ham and cheese on rye, situate yourself at a comfortable observation point and quietly absorb the behavioral patterns of the goats. Identify their interactions with their kids, physical surroundings, livestock guardian dogs and other goats. Make lots of mental notes if you do not have your waterproof paper notebook handy. An in-depth understanding of animal behavior is essential to be successful kidding in the brush. It is an unwritten contract between the two parties for stress free production management endeavors. Should you want to pursue an in-depth behavioral study, then charting ethograms (a precise and detailed catalogue of the responses which make up an animal's behavior) is done.

Important behavioral aspects to consider are the predator-prey response concept, your body language, and bonding (maternal labeling) necessary for survival. Eye contact is disturbing to a doe concealing herself and kids in the undergrowth. When approaching under these circumstances, do not look at the doe, use peripheral vision (do not wear sunglasses or hat brim over your eyes!). Approach in a slow yet continuous motion. Be conscious of your body profile, you are less invasive sideways. Always approach from your "disadvantage" point. In other words, let the doe have the high point and look down on you approaching. Don't make her look up as that challenges her fright/flight pattern. Bonding between dam and kid is the key to survival in the brush. They develop a communication system alerting each other to approaching danger. To enhance this bond, do not move the does with kids into a new area until they are at least 7 days old.

A prerequisite to kidding success is does with a quiet manner and presence yet very aware of their surroundings. These does are capable of finding a secluded, yet protected spot for kidding. They will "paw" out a nesting area that is away from the mob yet close by for protection. They like to have the advantage point so they will be on the highest point in the paddock that is protected from the wind and has a

southeastern exposure in the early morning and a southwestern exposure in the late afternoon. The doe usually begin preparing this area 6 to 8 hours before kidding.

Now that kidding time is close, they are very concentrated on preparing the area. From the time the KIKO doe commences kidding, to their first kid is approximately 10 to 20 minutes. They stand (or at least turn their head) immediately and clean the kid, lay down and within 7 to 10 minutes will have the second kid. The doe stands and begins cleaning the second kid while paying attention to the first kid. At the same time, the first kid is starting to nurse and within 20 minutes, both kids have an abomasum full of essential colostrum. While the kids are nursing, the doe is consuming the afterbirth - not only for vital absorbable nutrients but to eliminate smell, the attractant for predators. The doe then situates the twins into a low profile situation and begins eating nearby vegetation. The doe will stay within a 40 foot radius for the first day after kidding. After that, she will travel to water and return immediately. During the second day, her brushing radius will increase and by the third day, the kids are traveling with her. At this point in time, she keeps the kids with her as she travels to browse. They begin nibbling along side her and by the time they are 17 to 21 days of age, have a functioning rumen. They chew their cud and wander off with all of the other kids in the mob to browse on lower growing shrubs and forbs.

Paddock size during kidding will range from 35 acres to larger acreage parcels (depending on the number of does kidding). It is much easier to manage and check a smaller area of brush during kidding (set stocking). Because we have a purebred registered mob of KIKO meat goat breeding stock our management practices require more time. As the kids are born, they are imprinted, weighed, ear tagged, and navel trimmed to about an inch with drops of triiodine placed in the navel and at the base. All data is recorded on the kid as is body condition score of the doe (scaled as 1, very thin through 9, very fat) and motherability is ranked from 1 (super great) to 10 (cull). Other data collected on the doe is udder conformation (milkability), attitude and condition of the feet. Because all of this data is collected out in the brush - whether it is a nice sunny day or weather for rain gear - it is at this point in time that imprinting pays off. Imprinting is a form of modified animal behavior at birth that continues throughout the life span of the goat. The does are quiet, calm and trusting which makes associating with them during a kidding an unstressful event.

Because of our hot synchronization program of both does and bucks before breeding, 80% of our kids are born during the first 7 to 10 days of scheduled kidding. Then there is 5 to 6 day interval when no kids are born and then the last 20% are kidded. During the lull of kidding, the does without kids are sorted off from the main mob and moved into a different but previously brushed area to kid. This greatly simplifies and expedites the kidding process as now only the does expected to kid are together. The previously kidded does with kids will be allowed to move into an adjoining area with fresh vegetation; a parcel that was previously brushed and is now high quality regrowth.

To accomplish the moves quietly so that the kids stay with their moms, we associate the kids to our herding dogs (Border Collies and Huntaways) when the average age of kids in the mob is about 7 to 14 days. The kids know that their dam is the safest place to be in early "kidhood". As the herding dogs walk slowly around and through the brush with us, the kids are familiarized with the working (herding) dogs. The kids are accustomed to dogs ranging freely because of their livestock guardian dogs (Akbash/Anatolian/Kangal). Slowly start moving the does tighter together a little each day. Give the does plenty of time to keep their twins together and get them moving. After 4 or 5 times of quiet gathering, then leading or driving the mob is much easier. Practice and patience is the key for successful mobbing and herding (mustering). Once the mob has been moved several times, the kids are ready to go and rambunctious. After accomplishing successful moves, and the other 20% of the does have kidded, the mobs are combined (amalgamated). Then all are moved onto a new brush/forested area for land enhancement. Or, it is at this point in vegetation management when riparian areas can be cleaned and enhanced. The kids do a great job of getting undergrowth, especially blackberry thickets and honey suckle. As the quality of vegetation decreases, it may be advantageous to create 'creep' supplement areas for the kids.

Portable solar powered electric fence is an element for success that cannot be overlooked. It makes an operation flexible both in acreage and time with the opportunities for adjoining properties unlimited. Depending upon the landowner, predators, or class of goat will determine whether 3 or 4 strand polywire or electroneeting is used with a solar energizer. During kidding, it is important to maintain the fence so that the kids are introduced to a "shock" at an early age. Once they have been educated, they will not challenge the fence. Should problems arise, be sure they are not predator induced, be it four or two-legged intruders.

A chelated mineral/vitamin supplement is always offered free choice. Mineral deficiencies occur with variation in soil types, vegetative cover, climate and the class of goat. Before the goats enter an area, soil and plant nutrient analysis are completed. The doe mob has had a blood profile completed on them for over the past 30+ years. Therefore, a base line has been established on the goats. The information is graphed and the base mineral/vitamin mix "added to" depending upon deficiencies or excesses. In the present

vegetation composition, soil type and climatic conditions, we are deficient in copper, selenium and zinc. Therefore, these elements are "added to" the base mix in chelated form. Three weeks before kidding we will add organic iodine and continue that through to the weanoff mob. The goats are always offered sea kelp free choice. Therefore, have a quality base mineral/vitamin mix built/formulated by a dependable company.

The health program that we follow before and during kidding is based upon regional history and that we do supply meat to restaurants and niche markets with some purchasing organic products. The doe mob is vaccinated three weeks before breeding for leptospirosis and three weeks before kidding with clostridium perfringens B,C, and D with tetanus (BCDT). At six to eight weeks of age the female kids receive their first BCDT vaccination. At twelve weeks of age, they receive their second BCDT and first leptospirosis vaccines. The males are castrated at eight to ten weeks of age. The kids are weaned at three to three and a half months of age with the doelings receiving their second leptospirosis vaccination, tattoo, and blood test (caseous lymphadenitis/Johne's disease/caprine arthritis encephalitis). Any males put into the buck replacement program begin their vaccinations at this time. The wethers (and obviously "to be culled" doelings) receive no vaccinations.

Depending upon type of predation problems, topography and number of does kidding, the number of livestock guardian dogs used varies. But there are never less than three mature dogs and one yearling pup for a mob of 200 does. The density of the brush in some areas used for kidding cannot be traversed by crawling and therefore requires more livestock guardian dog power (double the number of mature dogs).

Mother nature can change rapidly and this could mean kidding under adverse weather conditions. In the brush, the does easily find protection for themselves and their kids. They find rock ledges and outcroppings, downed timber and even dig out under shrubs, securing the kids underneath or even putting them in old stumps and hollowed out logs. They will crowd together in groups (extended family members) to maintain warmth. If all else fails, the doe places the kids under her and uses her body as cover for the kids. But, if the weather becomes extreme - several days of continuous torrential non-intermittent rain - or the area is extensively brushed-out decreasing number of secluded hiding spots, portable shelter is provided. The type selected will vary upon geographic differences. Portable cover can range from a lean-to braced by trees (shrubs), light weight aluminum frames easily transported and erected with lightweight tarp coverings, or 16 foot welded-wire panels half hooped with tarps draped as covers. Secure flapping tarps and remember that goats see shades of grey so brown/green coverings are less intrusive.

It takes creative ingenuity and time to input energies insuring successful kidding in the brush. It is economically feasible, environmentally sound and the neighbors for whom Goats Unlimited mitigates vegetation enjoy the antics of inquisitive, capricious kids.