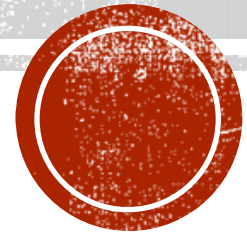


VEGETATION CONTROL WITH 4-LEGGED WEEDEATERS

All you need to know in 30 minutes or less....

Charlotte Clifford-Rathert, DVM

ccrathert@gmail.com



BIOLOGICAL CONTROL AGENTS

- “The increasing awareness of environmental concerns along with increased costs of mechanical clearing and the use of herbicides have enforced the need for alternative methods” (Luginbuhl et al., 1996)
- “Targeted grazing”
- Goats are noted for their ability to remove brush
- Sheep are more efficient at removing weeds
- The use of goats/sheep to control vegetation and provide a profit as a method of diversification on small farms was summarized by Dr. Steve Hart (2001)



BENEFITS

- The amount of fertilizers, herbicides, pesticides and feed inputs are reduced
- Soil moisture losses and erosion are reduced
- Shade/protection from the elements is provided for livestock
- Ultimately increasing net farm income from the diversified addition of new enterprises
 - Brush control services
 - Meat product
 - Leather



OBJECTIVES:

- Manage forage to meet animal nutritional needs
- Maintain pasture condition/available forage
- Manage internal parasite levels



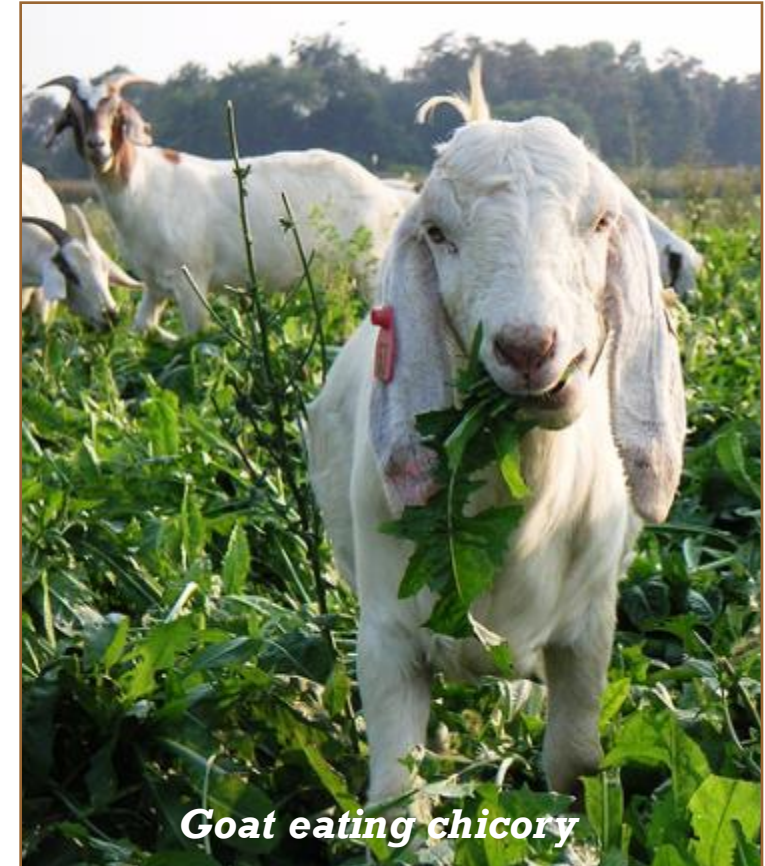
STRATEGIES:

- Utilize proper stocking rates
 - Match animal numbers to changes in carrying capacity of vegetation.
- Utilize animal grazing behavior to an advantage
 - Plants high in tannins
 - Proper grazing heights
 - Browse/ weeds



HOW MANY SHEEP/GOATS CAN YOU STOCK?

- Stocking rates vary by . .
 - Forage quality/production
 - Rainfall: amount and distribution
 - Plant species
 - Time of year/month/season
 - Soil fertility – lime, N, P, K
 - Amount of supplementation
 - Grazing management:
continuous, rotational, or intensive



Slide compliments of Mark Kennedy, USDA-NRCS



PROPER STOCKING RATE

- Balance livestock demand with forage supply
- Stocking rate: The number of animals or animal live-weight assigned to a grazing unit on a seasonal basis
- Carrying capacity: The stocking rate that provides a target level of performance while maintaining the integrity of the resource base (proper stocking rate).



STOCKING RATE GUIDELINES

Pasture Type	Cows	Sheep	Goats	Cows + Goats
Excellent Pasture	1	5 - 6	6 - 8	1 + 1 - 2
Brushy Pasture	1	6 - 7	9 - 11	1 + 2 - 4
Brush Eradication			8 - 12 / ac	.5 + 6 - 8/ac
Sustainable browse mgmt.			1 - 3 / ac	

Kennedy - 2002



WHAT AFFECTS WHAT AN ANIMAL WILL CONSUME?

- Availability of other plant species (diversity)
- Season
- Presence of other grazing animals
- What species of plants animals were exposed to as juveniles (young learn from their mothers what to eat)
- Breed/species



Slide compliments of Mark Kennedy, USDA-NRCS



DIET SELECTION ON MIXED PASTURE/RANGE

Animal Species	Type of Diet		
	Grasses	Broadleaf weeds and legumes	Browse ¹
Cattle	65 – 75	20 – 30	5 – 10
Horses	70 – 80	15 – 25	0 – 5
Sheep	45 – 55	30 – 40	10 - 20
Goats	20 – 30	10 – 30	40 – 60

¹ Shrubs or trees

SOURCE: D. Forbes and G.W. Evers, Texas A&M Univ.; D.I. Bransby, Auburn Univ.; M.A. McCann, Virginia Tech Univ.; and W>R> Getz, Fort Valley State Univ. IN Southern Forages 3rd Edition



FORAGING BEHAVIOR OF GOATS

Browse => Forbs => Grass



“Clean-up Artists”

- Opportunistic grazers.
- Browsers - prefer woody plants, shrubs, and vines.
- Do not like clover, but will eat it.
- Do not like to graze close to soil surface.
- Inclined to graze higher, drier areas.
- Tolerance for tannins and bitter compounds and fewer problems with plant toxicities.



FORAGING BEHAVIOR OF SHEEP

Forbs => Grass => Browse

- Prefer forbs (weeds)
- Eat grass and browse
- Like clover
- Graze close to the ground
- Inclined to graze higher, drier areas.
- Can tolerate salty compounds.



Good “second grazers”



TO CONTROL BRUSH AND WEEDS

- Graze early
- Defoliate every 6 weeks or less
- Defoliate late fall
- Ask yourself:
 - What are we going to graze after the brush and weeds are gone?
 - What type of stock will be needed?



TO MANAGE BRUSH AS A RENEWABLE RESOURCE

- Start grazing later in the spring
- Longer rotation > 8 wks rest
- Do not defoliate late in the fall



COMMON WEED AND UNDERSTORY PLANTS FOR GRAZING GOATS & SHEEP

- Multiflora rose
- Buckhorn plantain
- Blackberry
- Cocklebur
- Honeysuckle
- Kudzu
- Ironweed
- Poison Ivy
- Sumac
- Oak spp.
- Hawthorne
- Green Briar
- Elm
- Locust (Honey & Black)
- Dogwood
- Privet
- Mulberry
- Sweet Gum
- Poplar
- Eastern Red Cedar
- Russian Olive



PLANTS TO CAUTION

- Forbs/ Shrubs

- Perilla mint
- Cockle burr
- Poke weed

- Trees

- Stone fruit trees
 - Wild cherries, plums, peach

- Grasses

- Fescue
- Johnson grass
- Yellow foxtail



OTHER CONSIDERATIONS

- Facilities
- Fencing
- Predators
- Parasites
- Management
 - Low-input
 - Lambing/Kidding



MAKE IT A BUSINESS

- Check local government regulations about livestock
 - Special permits
- Check with other producers that are utilizing small ruminants leased to clean up properties (see next slide)
- Devise a business plan
- Schedule checking on animals daily, water, adequate feed, moving fence
 - Is there a water source close by
 - Shelter for animals to get out of weather/ overnight
- Consider cost to transport animals
- Time to set up fence
- Fees
- Liability insurance in case they get out



TARGETED GRAZING AFFILIATIONS

- Iowa www.goatsonthego.com
- Washington State www.healinghooves.com
- WA, TX, TN, LA www.rentaruminant.com
- CA www.werentgoats.com
www.brushgoats4hire.com
www.rentagoat.com
- MD, VA, DC www.browsinggreengoats.com
- Wisconsin www.munchbunchgoats.com



RESOURCES

- Appropriate Technology Transfer for Rural Areas (ATTRA) www.attra.org
- Langston University www.luresext.edu/goats/training/vegetation
- American Consortium Small Ruminant Parasite Control (ACSRPC) www.acsrpc.org
- eXtension Goat Industry CoP www.extension.org/goats
eXtension Sheep Industry CoP www.extension.org/sheep
- Maryland Small Ruminant Page www.sheepandgoat.com
- Toxic Plant Websites:
 - <http://www.library.illinois.edu/vex/toxic/scilist.htm>
 - <http://www.ansci.cornell.edu/plants/plants.html>

