VEGETATION CONTROL WITH 4-LEGGED WEEDEATERS

All you need to know in 30 minutes or less…

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“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

<table>
<thead>
<tr>
<th>Pasture Type</th>
<th>Cows</th>
<th>Sheep</th>
<th>Goats</th>
<th>Cows + Goats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent Pasture</td>
<td>1</td>
<td>5 - 6</td>
<td>6 - 8</td>
<td>1 + 1 – 2</td>
</tr>
<tr>
<td>Brushy Pasture</td>
<td>1</td>
<td>6 - 7</td>
<td>9 - 11</td>
<td>1 + 2 - 4</td>
</tr>
<tr>
<td>Brush Eradication</td>
<td></td>
<td></td>
<td>8 – 12/ac</td>
<td>.5 + 6 – 8/ac</td>
</tr>
<tr>
<td>Sustainable browse mgmt.</td>
<td></td>
<td></td>
<td>1 – 3/ac</td>
<td></td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Animal Species</th>
<th>Type of Diet</th>
<th>Grasses</th>
<th>Broadleaf weeds and legumes</th>
<th>Browse $^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td></td>
<td>65 – 75</td>
<td>20 – 30</td>
<td>5 – 10</td>
</tr>
<tr>
<td>Horses</td>
<td></td>
<td>70 – 80</td>
<td>15 – 25</td>
<td>0 – 5</td>
</tr>
<tr>
<td>Sheep</td>
<td></td>
<td>45 – 55</td>
<td>30 – 40</td>
<td>10 – 20</td>
</tr>
<tr>
<td>Goats</td>
<td></td>
<td>20 – 30</td>
<td>10 – 30</td>
<td>40 – 60</td>
</tr>
</tbody>
</table>

$^1$ Shrubs or trees

FORAGING BEHAVIOR OF GOATS

Browse => Forbs => Grass

- 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.

“Clean-up Artists”

Slide compliments of Mark Kennedy, USDA-NRCS
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”

Slide compliments of Mark Kennedy, USDA-NRCS
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

- **Grasses**
  - Fescue
  - Johnson grass
  - Yellow foxtail

- **Trees**
  - Stone fruit trees
    - Wild cherries, plums, peach
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