Grazing Strategies for the Small Farm
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Outline
- Grazing vs. browsing
- Grazing systems: The players
  - Animal/plant interactions
  - Nutrient movement – uptake, excretion, volatilization
- Grazing strategies:
  - Continuous grazing
  - Rotational grazing
  - Management intensive Grazing
- Animal Units and grazing
- Year-round grazing with cover crops
- Nutrient monitoring and handling
- Weed management not weed control

Nutrients

Definition:
A substance that provides nourishment essential for growth and maintenance of an organism’s life.

Nutrients for livestock:
- Amino acids (proteins)
- Lipids (fat)
- Carbohydrates (starches)
- Vitamins
- Minerals
- Fiber
- Water

Nutrients for plants:
- Macronutrients:
  - Nitrogen
  - Phosphorus
  - Potassium
- Secondary nutrients:
  - Sulfur
  - Calcium
  - Magnesium
- Micronutrients:
  - Cu, Fe, Mn, Zn, Mo, Mg

Nutrient movement

- Uptake, excretion, volatilization
- Nutrient monitoring – measures to ensure optimal balance between livestock and plant needs.

- Excessive amounts of nutrients and ineffective forage management can result in:
  - Inadequate gains.
  - Inefficient use of resources.
  - Water pollution.

- Nutrient management = adjust animal load to nutrient uptake capacity of forage base.
A cow is a cow and a goat is a goat

- Depending on our livestock species, they will prefer to forage on specific plants.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Browse</th>
<th>Weeds</th>
<th>Grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goats</td>
<td>60%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Sheep</td>
<td>30% Weeds</td>
<td>10% Browse</td>
<td>60% Grass</td>
</tr>
<tr>
<td>Beef Cattle</td>
<td>10% Browse</td>
<td>20% Weeds</td>
<td>70% Grass</td>
</tr>
<tr>
<td>Horses</td>
<td>6% Browse</td>
<td>6% Weeds</td>
<td>90% Grass</td>
</tr>
</tbody>
</table>

Grazing vs. browsing

- Plants fix energy from the sun in the presence of water and nutrients to produce limited amounts of forage.

- Sugar storage – Bahia and bermudagrasses can store limited amount of sugars in stolons.

Grazing systems: The players

- Plants – continuous foraging can deplete plant population.

Grazing systems: The players

Livestock – They harvest forage (nutrients) and incorporate them into muscle, milk, or fiber.

- Excrete nutrients through feces and transports nutrients mostly accumulating them in congregation areas.

Proper grazing

- Enhances the competitive ability of plants like Broomsedge and Johnsongrass and improves the competitiveness of Bermudagrass, Bahiagrass and even clovers.

Improper grazing

- Can decrease the competitiveness of desirable species and encourage undesirable weedy species.
Grazing systems: The players

- Under any situation there are two types of forages: the **increasers** and the **decreasers**.
- A forage farmer needs to establish a balance between:
  - Animal load
  - Available forage
  - Desired species
  - Undesired species

Grazing systems: The players

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Grazing systems: The players

**Degrading**

- Causes:
  - Too many animal units/area.
  - Area has been allowed to be grazed for too long.

- Effects:
  - Deposition of degrader forage species.
  - Decreaser will thrive.
  - Plants will have a shallow root system.
  - Herbage quality decreases for wildlife and livestock.

Grazing systems: The players

**Undergrowing**

- Causes:
  - Lack of enough animal units/area.
  - Grazed for too little time.

- Effects:
  - Upliftment of forage plants.
  - Increase competition between degraders and increasers.
  - Plants will go to seed.

Grazing Strategies: Rotational Grazing

- Consists of a perimeter fence, water and feeding areas and sometimes holding facilities.
- Animals can roam free and choose what they want to eat.
- Feasible only in large acreages.
Grazing Strategies: Rotational Grazing

- Objective: Effective and efficient resource management.
- Control points:
  1. Grazing time
  2. Stocking rate
  3. Animal distribution

Vegetative re-growth – aids in the survival of plant populations, accompanied by adequate fertilization and access to water.
- Optimal rest period: 21-30 days. It depends on the forage base.
- Mowing – Should be used to induce grasses into the vegetative state.

Best Management Practices:

- Stocking rate:
- Suggested animal units for this farm:
- Rotation scheme for 30 days:
  - P65
  - P67
  - P68
  - P69

Tools for decision making:

- Grazing stick – measure forage height and depending on forage base, you can make a decision on when they are rotated out.
- Measure Map phone app. - lets you measure your individual paddocks.
- Calendar – short days signal forages to slow their growth.

Rotational Grazing

Stubble height recommendations:

- Recommended height at which animals need to be removed from a pasture.

<table>
<thead>
<tr>
<th>Forage</th>
<th>Start Grazing</th>
<th>Stop Grazing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fallgrasses</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Bermuda</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Perennial Rye</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Rye</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Kochia</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>Forage Ryegrass</td>
<td>24</td>
<td>12</td>
</tr>
</tbody>
</table>

- Mow if needed.
Rotational Grazing

Management intensive grazing:
- Temporary fencing – confining animals to small paddocks for short periods of time.
- Can increase forage utilization significantly.
- Time-consuming
- Can get expensive

Multi-species Grazing

- The use of several species of livestock at appropriate stocking rates and rotation schemes to maximize forage productivity (40).

What's wrong here?

Similar forage preferences
Heavy animal load.

Multi-species Grazing

Locations in the eastern U.S. where multispecies grazing management should be given priority as an alternative to existing forage/grassland systems (33).

Multi-species Grazing

Potential investments:
- Fencing:
  - Sheep and goat fencing.
  - A permanent goat fence should have four strands of electric wire.
  - Perimeter - 6 - 8 wires at least 42 in. tall.
  - Bottom wire 6 - 8 in. from the ground.
  - 6 to 12 in. spacing between wires.
  - Alternate hot and ground wires.

Multi-species Grazing

Pastured Poultry:
- Use common sense.
- Colonies or mobile chicken coops work well, but you will still have to provide feed.
- Poultry will forage approximately 13% of their dietary requirements.
- Mow before rotating poultry in a paddock.

Summary

- Understanding our forages will promote make us better grass farmers.
- Not all livestock prefer to eat grass. This can be a curse or a blessing.
- It is important to appropriately graze our pastures allowing time for our grasses to regrow.
- Watch out for over- or undergrazing. Pay close attention to the amount of time and intensity you graze your forages to ensure that our forages can come back year after year.
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