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CENTRAL FLORIDA LIVESTOCK AGENTS GROUP

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
 - Line 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.

Table 1. Daily nutrient requirements for maintenance of mature lactating cows.*

Body Wt. (lb)	Crude Protein (lb)	NEL (Mcal)	TDN (lb)	Ca (lb)	Phos (lb)	- Vitamins - A D
1000	.08	7.86	7.58	.041	.029	34 14
1200	1.18	9.02	8.70	.048	.034	41 16
1400	1.37	10.12	9.78	.057	.040	48 19

*Add 20% for growth of lactating cows during first lactation.

Feeding Ewes

Nutrient Requirements 160 lb ewe

	Protein (lb)	TDN (lb)	Calcium (lb)	Phosphorus (lb)
Maintenance	0.25	1.45	2.6	2.4
Pregnant	0.36	2.32	3.7	3.2
Lactating	0.92	2.68	7.8	4.8
Lact Lact	1.00	3.17	11.0	9.1
Lact Lac	0.63	2.01	6.8	5.3
110 lb Replacement	0.55	2.5	4.8	2.4

Table 2. Dietary Protein and Energy Requirements for Goats

Age, Sex	Crude Protein (lb)	TDN (lb)
Class of Goat	2.4	2.8
Stomach empty, 45 lb*	2.9	3.3
Stomach empty, 60 lb**	4.8	5.0
1.5% 240 days	5.0	5.1
1.0% 240 days	5.3	5.3
1.0% 240 days	7.0	7.1

*Approximation based on a 10% nitrogen diet.
**Approximation based on a 12% nitrogen diet.

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Nutrients

Nutrients for livestock:

- Amino acids (proteins)
- Lipids (fat)
- Carbohydrates (sugars)
- Vitamins
- Minerals
- Fiber
- Water

Nutrients for plants:

- Macro-nutrients:
 - Nitrogen
 - Phosphorus
 - Potassium
- Secondary nutrients
 - Sulfur
 - Calcium
 - Magnesium
- Micro-nutrients:
 - Cu, Fe, Ni, Zn, Mn, Mo, Cl
- Water

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Nutrients

- 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.

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Nutrient movement

- Uptake, excretion, volatilization

Nutrient monitoring – necessary to ensure optimal balance between livestock and plant needs.

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A cow is a cow and a goat is a goat

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

Goats:
60% Browse
20% Weeds
20% Grass

Beef Cattle:
10% Browse
20% Weeds
70% Grass

Sheep:
30% Weeds
10% Browse
60% Grass

Horses:
6% Browse
4% Weeds
90% Grass

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Grazing vs. browsing

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Grazing systems: The players

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

- Sugar storage – Bahiagrass can store limited amount of sugars in stolons.

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Grazing systems: The players

Plants – continuous foraging can deplete plant population.

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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.

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Grazing systems: The players

Proper grazing

- Diminishes 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.

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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

Incr




Decreaser

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Grazing systems: The players

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Decreaser



Incr

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Grazing systems: The players


Overgrazing

Causes:

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

Effects:

- Depletion of decrease forage species → **increasers will thrive**
- Plants will have a **shallow root system** (decreases competitiveness for water and nutrients).



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Grazing systems: The players

Undergrazing

Causes:

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

Effects:

- Lignification of desired forage → **low quality forages**.
- Increase competition between decrease and increase.
 - Plants will go to seed.



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Grazing Strategies



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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 UF IFAS Extension


The design and construction and implementation of a grazing system that allows for optimal vegetative re-growth of forages and nutrient distribution of animal waste (JB).

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



Grazing Strategies: Rotational Grazing UF IFAS Extension

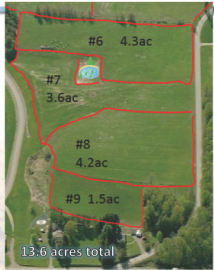
- Vegetative re-growth** – aids in the survival of plant populations, accompanied by adequate fertilization and access to water.
- Optimal rest period: 21-30 days. It depends on the forage base.
- Mowing – Should be used to induce grasses into the vegetative state.



Grazing Strategies: Rotational Grazing UF IFAS Extension

Best Management Practices:


- Stocking rate:
- Suggested Animal Units for this farm:
- Rotation scheme for 30 days:
 - P#6 -
 - P#7 -
 - P#8 -
 - P#9 -



Grazing Strategies: Rotational Grazing UF IFAS Extension

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 UF IFAS Extension

Stubble height recommendations:


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



Rotational Grazing

- Respect the stubble height.
- Mow if needed.

Forage	Start Grazing (in)	Stop Grazing (in)
Bahiagrass	6	2
Bermudagrass	6	4
Perennial Peanut	12	4
Stargrass	14	6
Pearl Millet	12	6
Hermarthria	24	10
Forage Sorghum	24	12



Rotational Grazing

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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



Milky Way Dairy, Waynesboro, GA.

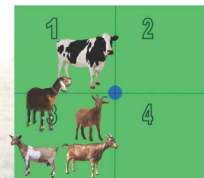
Multi-species Grazing

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- The use of several species of livestock at appropriate stocking rates and rotation schemes to maximize forage productivity (18).

What's wrong here?

- Similar forage preferences.
- Heavy animal load.



Multi-species Grazing

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Locations in the eastern U.S. where multispecies grazing management should be given priority as an alternative to existing forage/livestock systems (13).

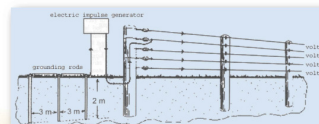
Multi-species Grazing

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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

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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

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- 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 re-grow.
- **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.

I hope they goat it man!



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