Spring Green Up

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Common Questions for Spring for Pasture Management

1. When should I turn the cows out?
2. Should I apply nitrogen to my pastures?
3. What should I plant in my pasture?
4. What is the value of pasture?

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What is the effect of early spring grazing when the grass is still short

- An acre of grass is nothing more than a solar panel, converting solar radiation into energy (Carbohydrates).
- Bare ground (no solar panel) represents a lost opportunity to convert sunshine into something saleable.
- We need to understand plant physiology in order to grow and manage a better solar panel.

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What is the effect of early spring grazing when the grass is still short

- Grasses and forages grow roots and tillers from carbohydrates
  - New carbohydrates – Photosynthesis
  - Old carbohydrates – stored sugars in basal stem/crown
- In Spring, plants ONLY have stored carbohydrates

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Dairy Forage Research Center Study

- What is the effect of early spring grazing when grass is still short?
- Spring Grazing was initiated at 3-4" height
- Compared with 12" initial height
  - Yield during treatment
  - Yield for the rest of the season

Table 4. *Timing of grazing effects on annual pasture production.*

Treatment Period	Yield Loss During Treatment (lb/ac)	Does 500 pounds matter? If your growing 5000 lbs DM/ acre = 10% more grass If you have 100 acres of pasture = 25 tons What is that value?		
May (early spring)	400	100	500	$140
July (summer drought)	200	600	800	$225
October (late fall)	0	0	0	0

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Early Spring Grazing

- Directly impacts yield
- Plants catch up, some. . . but not entirely
- Economic decision – cost/value of alternative feed

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Dairy Forage Research Center

- What is the effect of grazing grass that is still growing late in Fall?
- What we do in one season impacts the next season.
  - Spring Green up is impacted by Fall management

Table 2. *Economic value of residue management.*

Residue Height (in.)	Annual Yield (lb/ac)	Yield Value as Hay ($/ac)	Yield Value as Milk ($/ac)	Date Grass Reached 12" in Following Year
6	4500	$270	$1270	April 28
3	5400	$325	$1520	May 4
1.5	5000	$300	$1410	May 11

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Hay = $100/ton; Milk = $18.80/cwt. (Dec. 2010 price).
Sample calculation of value: (4500 lb/ac)/(150 days/ac) x (45 lb milk/day) = 6750 lb milk/ac
(67.5 cwt milk/ac) x ($18.80/cwt milk) = $1270/ac

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Transitioning to Spring Grass

- Manure Scoring

Photo: Noble Foundation

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Transition to Spring Grass

- Cows will tell you if they have adequate fiber
  - Manure
  - Behaviour
- May need a supplemental fiber source
  - Hay
  - Taller Fall stockpiled forage (dead grass)

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Should I apply Nitrogen to my Spring pastures?

- Spring N "may" result in more pounds of forage
  - IF we have taller growing species
    - Orchardgrass, Meadow Fescue, Bromegrass, etc
  - Unlikely to get an economic response on bluegrass
  - Economic decision is the value of the production greater than the cost of the alternative - hay
- Do we need more grass in Spring?
- Do we have a plan and an the ability to harvest extra grass?

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Should I Apply Nitrogen to my Spring pastures?

- Role and value of Clover in a pasture sward

Location/Years/Type of Cattle	Treatment	Average Daily Gain, pounds/day	Gain/Acre, pounds
Lancaster, 1998-2000, Holstein stocker steers[1]	Kura clover + grass	2.66	909
	Red clover + grass	2.18	713
Arlington, 2010 – 2012, Beef crossbred stocker steers[2]	Grass (tall or meadow fescue) + nitrogen	1.85	607
	Grass (tall or meadow fescue) + white clover	2.16	696

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Economic analysis, 2010-2012 grazing seasons

Year	Item	Tall fescue	Meadow fescue	Tall and clover	Meadow and clover
2010	ADG	1.40	1.78	2.03	2.34
	SR	2.69	2.21	2.29	2.21
	Gain/Acre	678	708	837	931
	NIBT	$ (202.69)	$ (56.58)	$ 27.68	$ 126.20
2011	ADG	1.70	1.98	2.00	2.20
	SR	2.55	1.94	2.20	2.02
	Gain/Acre	594	526	603	609
	NIBT	$ (71.87)	$ (8.71)	$ 10.33	$ 59.84
2012	ADG	1.85	2.44	2	2.46
	SR	2.23	1.67	2.1	1.77
	Gain/Acre	544	537	554	574
	NIBT	$ (30.17)	$ 85.09	$ 3.04	$ 102.51
3 yr Avg.	NIBT	($101.58)	$6.60	$13.68	$96.18

- Gain per acre is not profitability
- MF and white clover pastures were more profitable (GIVEN SIMILAR MANAGEMENT)

Mitch Schaefer, 2013

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Clover and Legumes in Pasture

- Captures atmospheric nitrogen and improves grass production
- Improve digestibility of forage by increasing rate of gain especially in summer
- Evens out forage supply throughout the season
- Improves pasture resilience in drought
- Improves profit
- Provides pollinator habitat

- Nitrogen is antagonistic to legumes

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If we manage for Clover (legumes) in pasture

- 30-50% legume content goal
  - Evaluate Summer/Fall before
- Methods of establishment
  - No till drill
  - Frost seeding
  - Broadcast and trample
  - Feeding to livestock

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What should I plant in my pasture?

- Sort of answered that question with Clovers.
  - Alfalfa/trefoil, less competitive and not very successful
- Grasses?
  - "maybe" ryegrasses, annual/perennial

- Any Exceptions?
  - Heavily damage/pugged up winter areas, without much grass

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What should I plant in my pasture?

You cannot manage something if you can't control it.

Control of grazing results in plant species diversity.

"Cool season pastures averaged 32 species per 1000m^2, with a range of 7-73 species, dominated by a handful of cool season grasses and legumes" M.A. Sanderson

Photo : On Pasture

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Questions

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