

Alfalfa and Alfalfa-Grass: Obstacles and Opportunities

Ev Thomas
Oak Point Agronomics
Hammond, NY



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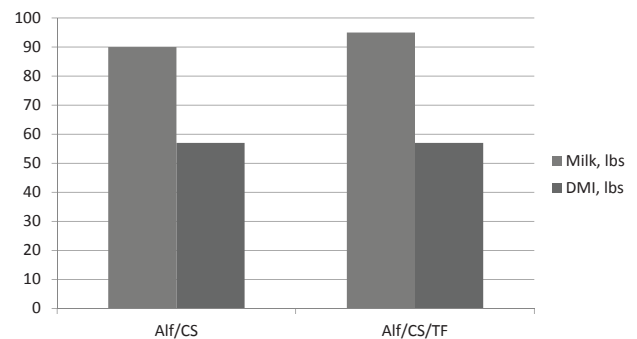
Rations: Alfalfa vs. alfalfa + grass

Feed	% of total ration	
	Alfalfa /Corn silage	Alfalfa/Corn silage/Tall fescue
Corn silage	26	17
Alfalfa silage	26	17
Tall fescue silage	0	17
High moisture corn	26	25
Protein/minerals	22	24

Different strokes for different folks

- Only about 10% of alfalfa in the U.S. is seeded with a forage grass.
- However, about 85% of alfalfa in N.Y. is seeded with a cool-season forage grass, and a similar % in New England and Eastern Canada.
- Tall fescue is used in 20-30% of alfalfa-grass seedings but meadow fescue may be a better choice—higher quality.

Milk production and dry matter intake



Why is the Northeast different?

1. More variable soils than the Midwest due in part to glacial activity. Within-field variability in drainage, pH, fertility, etc. favors alfalfa-grass.
2. Very cold winters affect alfalfa more than it does most grass species.
3. Tradition: Farmers in the Northeast have seeded alfalfa-grass for generations.

Grass is different

- Grass harvested at the boot stage has much higher digestibility than conventional alfalfa varieties harvested at the late bud stage.
- However, grass digestibility declines twice as fast. Therefore, timing is everything! "When you see the head, quality is dead."
- Big differences in heading date between grass species, and between varieties within some species.



Changing times

- Two factors have influenced grass species selection:
 1. 1. An increased knowledge of (and focus on) grass fiber digestibility. Shift from timothy to reed canarygrass to tall fescue, recently to meadow fescue.
 2. 2. More intensive management of alfalfa-grass stands: Some grass species (smooth brome) don't tolerate today's 30-day harvest intervals.

Grass is boring

- Grasses are generally ignored by most major seed companies (Pioneer, DeKalb, Mycogen).
- Farmers often buy whatever grass seed is cheap, often whatever the dealer has in stock.
- Where alfalfa will do best, *perhaps* grow straight alfalfa. But where field conditions aren't ideal for alfalfa, consider alfalfa-grass.

Alfalfa grass ups and downs

Alfalfa-grass almost always yields more than straight alfalfa, seeding year and in established stands.

A major challenge is getting the right % of grass in the stand. Often this depends on the weather soon after seeding. More rain = more grass.

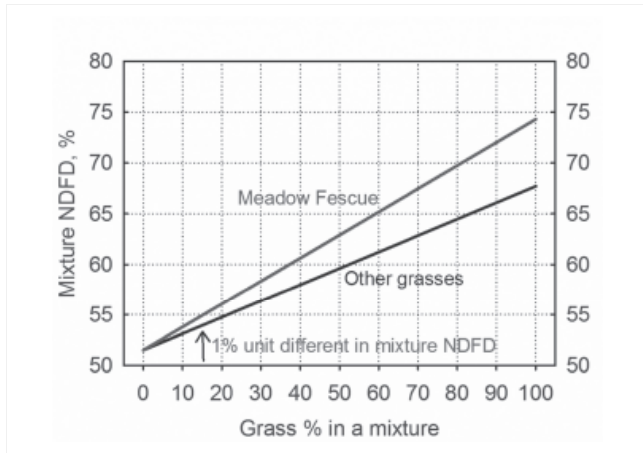
Recent Cornell research suggests that even 1 pound per acre of orchardgrass may be too much!

What's new? Meadow fescue

- Meadow fescue is the top choice for alfalfa-grass seedings.
- Cornell University research: 10% higher digestibility than any other forage grass at a wide range of maturity.
- Liherold, Pradel and BAR FPF32 all appear to be good varieties, Liherold isn't new but as good as any.

The real vs. the ideal

- The ideal alfalfa-grass stand is 2/3 alfalfa and 1/3 grass. Alfalfa provides N to the grass.
- However, may be better to start with a bit less than 1/3 grass as the stand ages the % grass will increase.
- The grass species is critical: As little as 10% meadow fescue in the stand is enough to make a significant quality difference.



An example from Miner Institute

- Leased field, seeded to alfalfa-reed canarygrass. Alfalfa died, canarygrass grew very well.
- 2008 Cornell University soil test K = 0!
- Confirmed to be close to zero by a second sample.
- Third cut grass, harvested a week before the soil sample was taken: Grass K = 2.65% = normal!
- Where did the grass find the potassium? It just did!

Notable quotes from Jerry Cherney, Cornell University

- *"I have tried making the case that reduced-lignin alfalfa was really invented for alfalfa-grass people, but the alfalfa group outside of NY still does not know what alfalfa-grass is, they just have a puzzled look."*
- *"Switching from a lower quality grass to a higher quality grass such as meadow fescue can impact forage quality as much as a switch from an average alfalfa to a higher quality reduced-lignin alfalfa."*

Therefore...

- Do not seed grass with alfalfa if soil test K is low or medium-low.
- The alfalfa may grow well at first...but only until the grass root system becomes well-established.
- Then the alfalfa will start to disappear, *even with the recommended K fertilizer application rates.*
- Increase soil test K to medium-high or high before seeding to alfalfa-grass.

Alfalfa vs. grass: There is a difference!

- Alfalfa tap roots reach deep into the soil profile, while grasses have dense, relatively shallow root systems.
- Grasses are much more efficient than alfalfa in nutrient uptake. This can be a plus or a minus.
- Grasses will thrive and accumulate ~2.5% K at soil potassium levels that are low enough to starve alfalfa to death.

Alfalfa and grass nutrition: There's a big difference

- Alfalfa stores nutrients in its taproot. Soon after mowing the stubble dies, regrowth is from crown buds.
- Grass stores nutrients in the bottom 3-4" of the above-ground portion of the plant, regrows from the cut stems.
- Mowing at 2" stubble height has no effect on alfalfa nutrient status, but reduces grass nutrient reserves.

Summary:

- => Huge differences in alfalfa seeding practices in the Northeastern U.S. and Eastern Canada vs. the rest of North America.
- => In cool-season areas alfalfa-grass yields more than alfalfa, and milk production is higher.
- => Choosing the right grass species and getting the right alfalfa-grass ratio are critical.
- => So is cutting height and maintaining adequate soil potassium levels, both during and after seeding.

