Value of Grass Mixed with Alfalfa for Dairy Cattle

A Little Grass Could be a Good Thing

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Grass feeding: Perceptions

- **Confinement dairies:**
  - Grass perceived to be too high in fiber/too low in quality for high producing dairy cows
  - Corn silage a higher yielding alternative to perennial or annual grasses
  - Pure alfalfa stands easier to manage

- **Pasture based dairies:**
  - Have challenged perceptions about grass
  - Have created research opportunities
Why incorporate some grass into dairy rations?

Agronomic

- Improve yields of seeding year stands
- Faster drying
- Less risk of winterkill
- Manure management

Nutrition

- Higher total fiber with grass/legume mixtures than alfalfa
- Higher proportion of digestible fiber than alfalfa or CS
- Possible good fit with high NFC, low fiber diets (i.e. high corn silage diets)?
Forage Quality of Alfalfa Grass Mixes

Higher NDF with grass
But higher NDFD
Forage Quality of Alfalfa Grass Mixes

![Graph showing RFV or RFQ values for different percent legume]

- RFV
- RFQ
What grass should I use?

Selection Criteria

Yield
Winterhardiness
Late maturity
Seasonal yield distribution
Rust resistance
Selecting a Good Grass Variety

Mixed with Alfalfa
Less NFC than corn silage or alfalfa

In Pastures

Greater differences exist among grass varieties than among corn hybrids and soybean varieties
Selecting Grass varieties - Yield difference among varieties in UW Trials

Annual difference between top and bottom variety

- Perennial Ryegrass
- Festulium
- Orchardgrass
- Tall fescue
- Smooth Bromegrass
- Timothy

Tons/acre

0
2
4
6

Dan Undersander-Agronomy © 2011
Selecting Grasses

- Orchardgrass and tall fescue
  - Want late maturing types

![Graph showing maturity of different orchardgrass varieties]
Seasonal variation in Tall Fescue variety yield

- Cut 1
- Cut 2
- Cut 3
- Cut 4

Percent Total Season Yield

- Low β
- Average β
- High β
Seasonal variation in Tall Fescue variety yield

\[ \beta = -7 \]
Seasonal variation in Tall Fescue variety yield

\[ \beta = -7 \]

\[ \beta = 1 \]

- low $\beta$
- average $\beta$
- high $\beta$
Quality changes in Alfalfa-Grass mixtures with Maturity - Marshfield NDF

Undersander, 2006
Selecting Grasses

Orchardgrass, Tall Fescue, and Meadow Fescue

- Want winterhardy types
- Want late maturing types
- Want good seasonal distribution of yield
- Want rust resistant types
Rust Resistance
Rust in grass trials
Select Grass Varieties for

- Yield
- Winterhardiness
- Late maturing varieties
- Consistent yield throughout season (β)
- Rust resistance (orchardgrass, tall fescue, ryegrass, festolium)
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Yield of alfalfa/grass mixtures

Yield of Alfalfa

Percent grass

Yield, t/a

Meadow Fescue
Orchardgrass
Tall Fescue

Yield of Alfalfa
Yield of alfalfa/grass mixtures

Yield, t/a

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<th>Percent grass</th>
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Yield of Alfalfa
Yield of alfalfa/grass mixtures

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Yield of Alfalfa
Seeding Alfalfa Grass mixtures
– want 30 to 40% grass (as % of DM)

- Alfalfa - orchardgrass
  - 10 lbs/a alfalfa; 4 lb/a orchardgrass

- Alfalfa – tall fescue
  - 10 lbs/a alfalfa; 6 lbs/a tall fescue

- Alfalfa – meadow fescue
  - 10 lbs/a alfalfa; 6 lbs/a meadow Fescue
Alfalfa grass mixes
Web Resources

UW Extension A1525
UW Extension Forage Resources
www.uwex.edu/ces/forage