**MSU Forage Research Update -2014**

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**2013 Forage Variety Testing**

- Entries doubled from 2012, even with increased entry fee
- Report format being updated for 2013

**Alfalfa**
- New tests initiated in East Lansing, Lake City, and Chatham
- New test for Roundup Ready varieties (all three sites)

**Perennial cool-season grass**
- New test initiated in East Lansing
- No entries for Lake City or Chatham

**Grazing tolerance – Horse pastures**

**2014 test plans**
- Conventional and RR alfalfa
- Perennial cool season grass
- Annual grasses

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**Forage Research 2013**

**Completed**
1) N replacement value of white clover (Dr. Leep)
2) N fertilizer rates for alfalfa-grass mixtures (Dr. Min)
3) Switchgrass N response trial in the UP (Dr. Min)
4) Intermediate wheatgrass as an alternative forage (Dr. Culman)
5) Birdfoot trefoil – environmental variation in tannin (MI, MI, UT, WV)

**Ongoing**
4) Native warm-season grass germplasm evaluation (Dr. Min, CentUS)
5) Yellowjacket: Falcata alfalfa breeder seed increase (SD, MI, Rose Lake PMC)

**Initiated**
6) Mixed wheat/rye for emergency early season forage
7) Regrowth potential of forage brassicas
8) RR alfalfa - Best management practices (OH, MI, MN, PA, WI)
9) RR alfalfa - Establishment of grass alfalfa mixtures (OH, MI, PA, WI)
10) Fall N fertilization of alfalfa
11) Sorghum-soybean mixtures as summer sheep pasture (Dr. Ehhrhardt)

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**Why Brassicas?**

- Extremely frost tolerant
- Hold nutritive quality well, even under snow
- Highly preferred by animals
- 60 days from planting to grazing fits short windows of opportunity
- Resulting spring seeding is ideal for new seeding
- High energy content supports animal performance
- Can they support tall finishing gains in grass-fed beef systems?

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**Nitrogen replacement value of white clover in tall fescue**

**Fig. 1. Percent white clover in 3rd cut.**

**Fig. 2. Total forage DMY in 3 cuts.**

#1 – no advantage to planting more than 2 lb/A white clover
#2 – potential 1-yr delay in N availability to grass?
#3 – grass can’t access clover N without water!

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**4 wk after planting, East Lansing**
1 wk regrowth, East Lansing

2 wk regrowth, East Lansing

4 wk regrowth, East Lansing

Dry matter yield of Brassica and Oats in two cuts

EL, good rainfall, cut 41 DAP

LC, very dry, cut 45 DAP

Site*cut interaction: EL had greater yield gap between cuts

Mean dry matter yield of Brassica varieties and Oats in two cuts averaged across sites

Barsica > Appin in cut 1

NSD among varieties in cut 2

New Research Funded for 2014

High-tannin Birdsfoot Trefoil Breeding Project

- Multi-state collaboration (AL, WI, UT, KY, MO, WV, WY)
- Selection for persistence and tannin content in mixture with tall fescue
- Effect of plant tannin on soil N cycling
Pasture-finished beef project
- High energy forages for fall-finishing
  (Rowntree, Cassida, Schwohofer, Wells)
  - Lake City Research Center
  - High sugar ryegrass and brassica mixtures
  - Pasture yield and quality, animal gain, meat quality

UP Potato Soil Health project
- (MPIC, Long, Cassida, Kapp,
  - Use of alfalfa and rye to improve soil health in potato rotations
  - Effect of alfalfa and rye on potato disease organisms

Upper Peninsula Integrated Production Systems Project
- Integrated crop-livestock system trial – using livestock to enhance crop rotations and improve soil health
- Student incubator project – use of forages/cover crops in hoophouse production systems

Questions?
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