

## MSU Forage Research Update -2014

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## Nitrogen replacement value of white clover in tall fescue

Fig. 1. Percent white clover in 3<sup>rd</sup> cut.

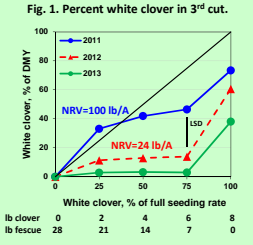
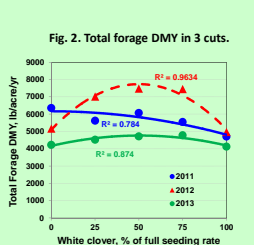


Fig. 2. Total forage DMV in 3 cuts.



#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!

## 2013 Forage Variety Testing

Changes

- 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



## 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 seedbed is ideal for new seeding
- High energy content supports animal performance
- Can they support fall finishing gains in grass-fed beef systems?



## 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) Birdsfoot trefoil – environmental variation in tannin (WI, MI, UT, WV)

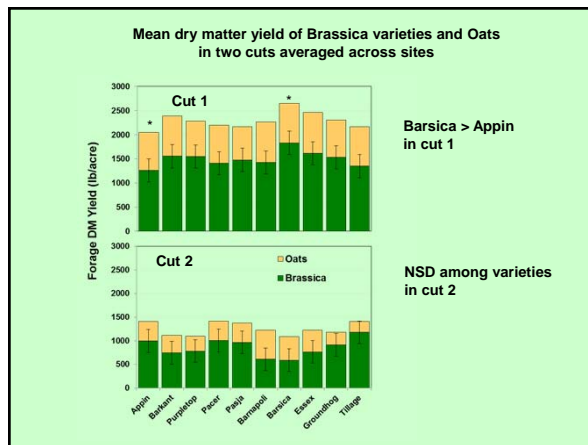
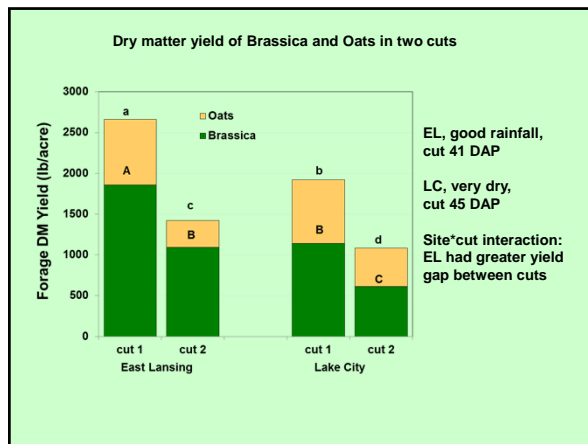
Ongoing

- 4) Native warm-season grass germplasm evaluation (Dr. Min, CenUSA)
- 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 K fertilization of alfalfa
- 11) Sorghum-soybean mixtures as summer sheep pasture (Dr. Ehrhardt)






### New Research Funded for 2014

#### High-tannin Birdsfoot Trefoil Breeding Project

- Multi-state collaboration (AL, MI, UT, KY, MO, WV, WY)
- Selection for persistence and tannin content in mixture with tall fescue
- Effect of plant tannin on soil N cycling




New Research Funded for 2014




**Pasture-finished beef project**

- high energy forages for fall-finishing (Rowntree, Cassida, Schwehofer, Wells)
- Lake City Research Center
- High sugar ryegrass and brassica mixtures
- Pasture yield and quality, animal gain, meat quality



**Questions?**



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New Research Funded for 2014

**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



New Research Funded for 2014

**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

