

# Short-term Forages that Work Well as Cover Crops and Feed Livestock, too

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## *Past & Present*

- Farm background in Nebraska
  - Irrigated corn and grain sorghum
  - Dryland wheat and oats
  - Swine
  - Beef
  - Alfalfa and smooth brome grass
- Education
  - Bachelors Degree – Univ. of Nebr.
    - Agronomy and Animal Science
  - Masters and Ph.D. – Purdue Univ. Forages emphasis
- Purdue Forage Extension Specialist
  - 1981 – present
- Research
  - Production and utilization of forages
    - Livestock feed
    - Biofuel
- Teaching
  - Forage Management
  - Communicating with the Public

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## Why are You Here Today?

- *Network*
- *Credits*
- *Knowledge*
- *Wisdom is using knowledge learned to better self, others, and the environment*



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## Objective Today

To:

- create awareness about short term forages that could diversify Indiana grain crop enterprises and serve as a cover crop



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# Missed Opportunities



The Midwest USA has distinct seasons that create unique opportunities for farmers to enhance their production enterprises.

Many forage species can be effective cover crops and provide a feed resource.

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Is a farm objective keeping the  
landscape green with cover

24/7/52

January

December

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## Cover Crop Value?

- Soil erosion reduction
- Water quality improvement
- Nutrient scavenger
- Nitrogen producer
- Weed suppressor
- Soil health (physical and biological)
- Rotation to break monoculture
- Feed resource

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## Why No Interest in Cover Crops as a Feed Resource?

- Have no interest in livestock
- Have an interest, but have little to no experience with livestock
- Lack of resource dollars in getting fencing and water delivery in place
- Concern about compaction and field rutting caused by machine harvest or hoof action of grazing livestock
- Lack of quality/quantity time to manage both a crop and livestock enterprise

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## **No livestock? Not enough land?**

The website lets users:

- search listings
- create listings
- create a free account to save listings of interest, add new listings, see contact details and message other users
- browse grazing resources, including examples of grazing lease agreements and contracts
- explore the benefits of using grazing for both landowners and livestock owners

[www.midwestgrazingexchange.com](http://www.midwestgrazingexchange.com)

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## **All crop choices have strengths and weaknesses. What are your needs?**

### **Study, Evaluate, Ask before seeding.**

- **Adaptation to soil type, soil pH and fertility**
- **Winterhardiness**
- **Drought tolerance**
- **Quality traits**
- **Ability to “spring back” from harsh situations**
- **Growth characteristics**
  - grass vs. legume vs. forb
  - sod vs. bunch
  - warm-season vs. cool-season
  - winter annual vs. summer annual vs. perennial
- **Invasiveness**
  - Can you name some historical crops that have become an invasive concern?

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## Variety Selection within a Crop Species



If you see “VNS” on a seed tag,  
do you know what the letters mean?

Variety Not Stated – Is this a concern?

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## Considerations / Opinions



- Select crops that meet the nutritional needs of the livestock **category** being fed
- Work with a reputable seed dealer that understands forages and livestock needs
- Be timely with seeding and harvest
- Keep crop species in a mixture selected to a few or less
  - Selective grazing will occur if many
- Crops selected should complement each other
  - Example oats and turnips
- Some wheat grain in rotation increases the number of cover crop choice opportunities
- In some situations, a **judicious amount** of nitrogen fertilizer may be needed to support forage growth. In this situation, scavenging nitrogen is not a top reason for use of the cover crop
- Moving fence within the field may be ideal

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The screenshot shows the 'Cover Crop Decision Tool' interface. At the top left is the Midwest Cover Crops Council logo. The main heading is 'Cover Crop Decision Tool'. Below this, there are several input fields: 'Start with where is your farm?' with dropdowns for 'Select a state or province' and 'Select a county'; 'Tell us your goals' with a 'Select a goal' dropdown and an 'Add Goal +' button; and two buttons for 'Show current cash crop options' and 'Show drainage options'. Underneath are 'Cover crop type options' with checkboxes for 'Display cover crop type' and 'Group cover crops by type'. A yellow 'Find cover crops' button is at the bottom left, and the website URL 'www.midwestcovercrops.org' is at the bottom right.

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## Cropping Systems to Consider

- Following wheat grain harvest
- Overseeding winter wheat
- Last perennial hay harvest in the spring
- Corn silage
- Corn and soybean grain

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## Wheat Grain / Annual Grass or Brassica Calendar



Winter wheat seeded previous year

Summer - annual grass, annual ryegrass, oat, or turnip seeded after wheat grain harvest

Crops harvested



Winter wheat seeded in October

Jan

July

Sept

Nov

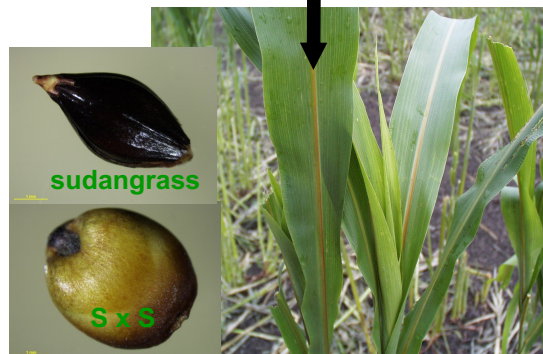
Dec

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## Sorghum-Sudangrass and Sudangrass Realities

- Summer-annual grass
- Drought tolerant
- Consider **BMR** – Improved digestibility as compared to normal
- Better regrowth than millet
- Current selections **have** prussic acid potential
- Best grazed or ensiled

Brown midrib sorghum-sudangrass



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## Pearl Millet Realities

- Summer-annual grass
- Can grow better than sorghums in low pH conditions
- Drought tolerant
- **NO** prussic acid
- **BMR** hybrids are available
- Best grazed or ensiled



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## Foxtail Millet Realities

- Summer-annual grass
  - looks like a robust giant foxtail
- Can grow better than sorghums in low pH conditions
- Drought tolerant
- **NO** prussic acid
- Greater chance of making dry hay as compared to pearl millet, sudangrass or sorghum-sudangrass
- Not lactating dairy quality



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## Spring Oat Realities

- Traditional companion crop when seeding perennial forages
- Complements forage turnip in a mixture
- Spring annual
- Multiple methods of use



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## Annual Ryegrass Realities

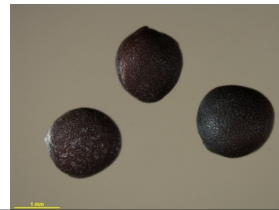
- Cool-season weak perennial
- Excellent seedling vigor
- Excellent quality
- Poor drought tolerance
- **Many** differences within varieties
- As a species, not as winterhardy as adapted soft red winter wheat varieties
- **Slower kill** than small grain cover-crops
- Could see remnants in future seasons if goes to seed



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## Forage Turnip Realities

- Member of *Brassica* genus
- Annual forb
- High Net Energy (Too high?)
- Excellent with oat in a mixture
- Tolerant of frost but not very hard freeze
- Best used by grazing
- **Major** differences among varieties (some hybridization with other Brassicas)
- Stand loss occurs with each successive round of grazing



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## Teff Realities

- Annual grass in a temperate environment
- Seed is **extremely small** and typically coated
- Very firm seedbed necessary
- Multiple harvests possible
- Multiple use possibilities
- Goes to “straw” quickly
- Not lactating dairy quality



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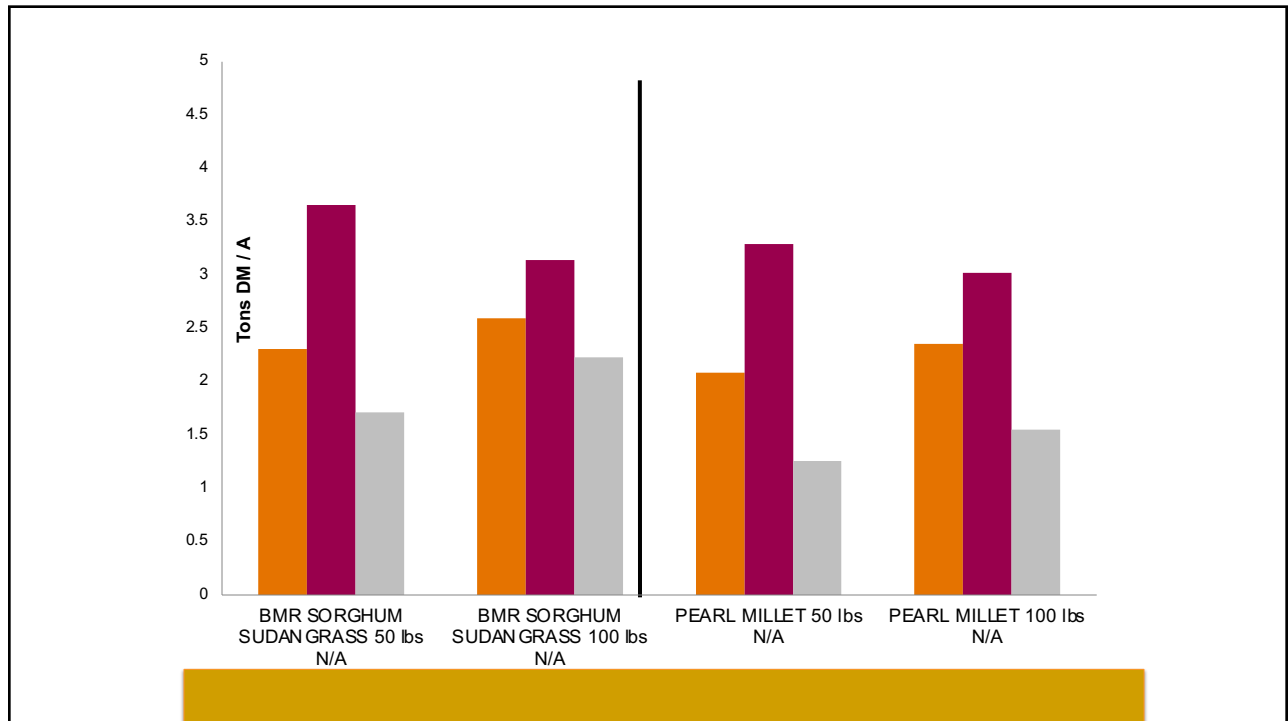
## Niche Forage Option Research

- Purdue University
  - Year 1 Agronomy Center for Research and Education
  - Year 2 Throckmorton- Purdue Agricultural Center
  - Year 3 Agronomy Center for Research and Education – *Very dry year*
- Many crops evaluated as a doublecrop following wheat grain harvest
  - July seeded
    - sorghum x sudangrass, pearl millet, foxtail millet, teff
  - August seeded
    - turnip, oilseed radish, oat
- 2 N rates, 50 and 100 lbs. per acre
  - Good news! - No difference in yield due to N rate

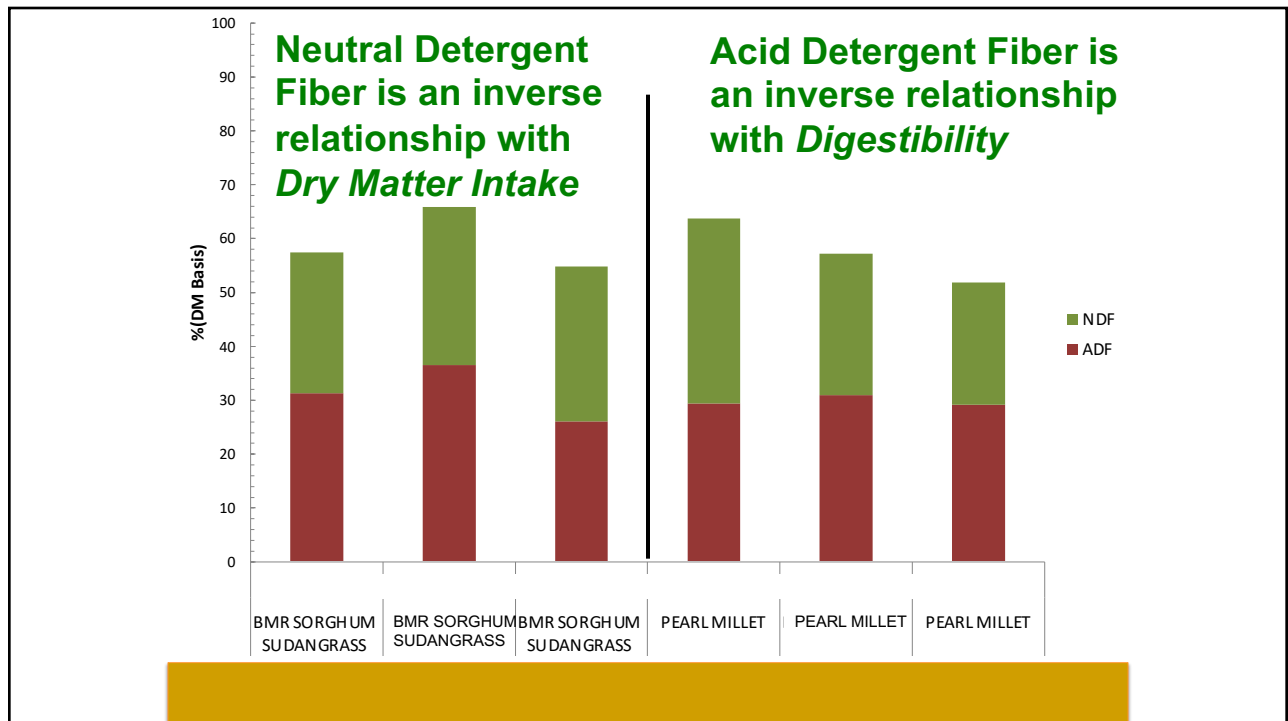
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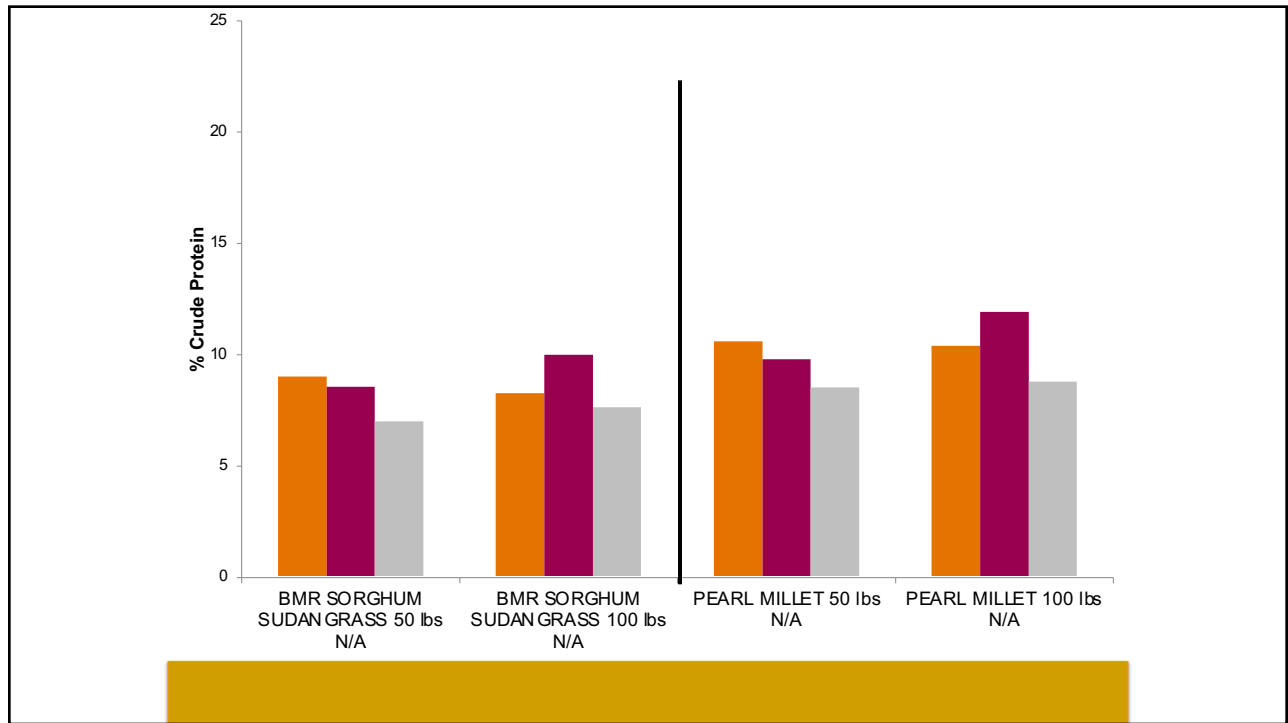
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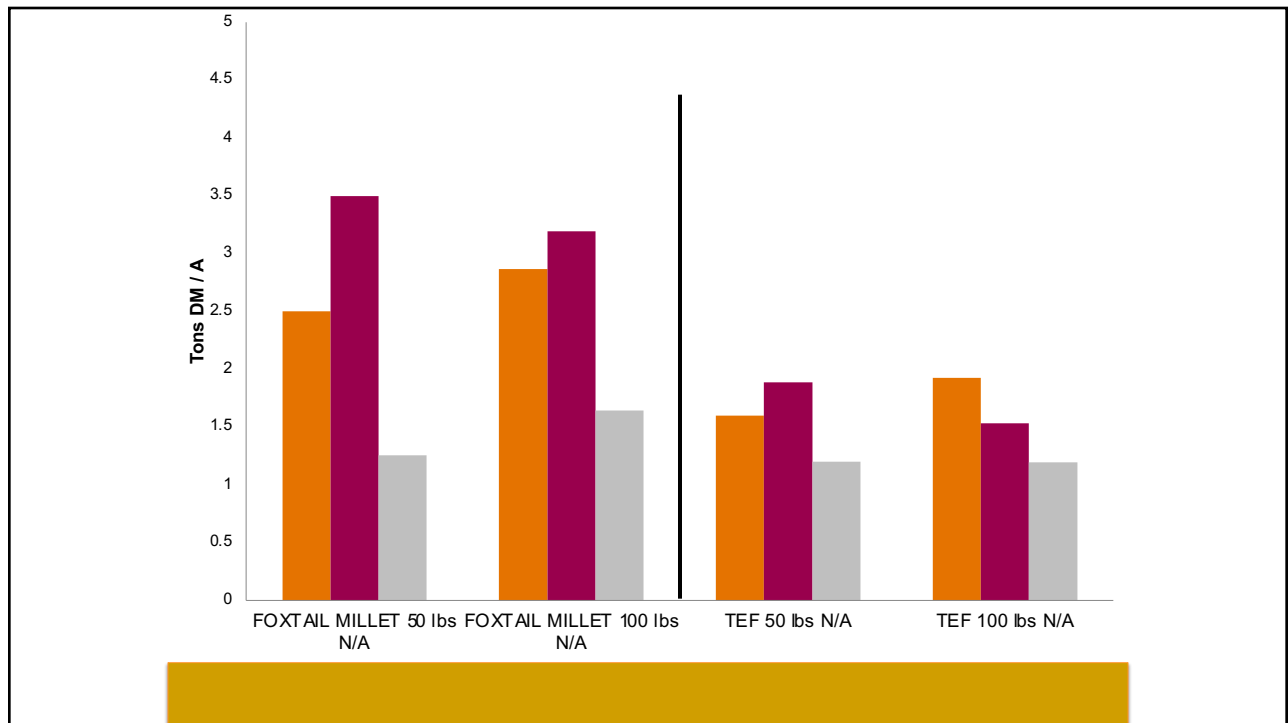
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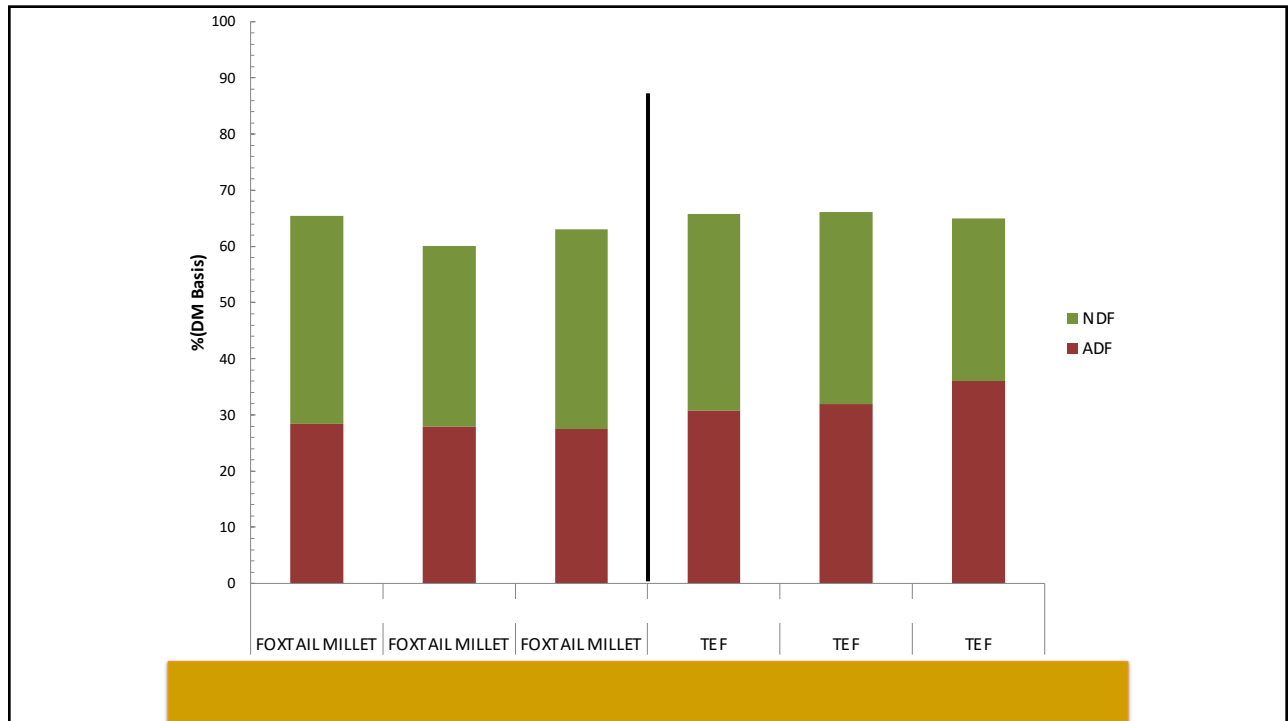
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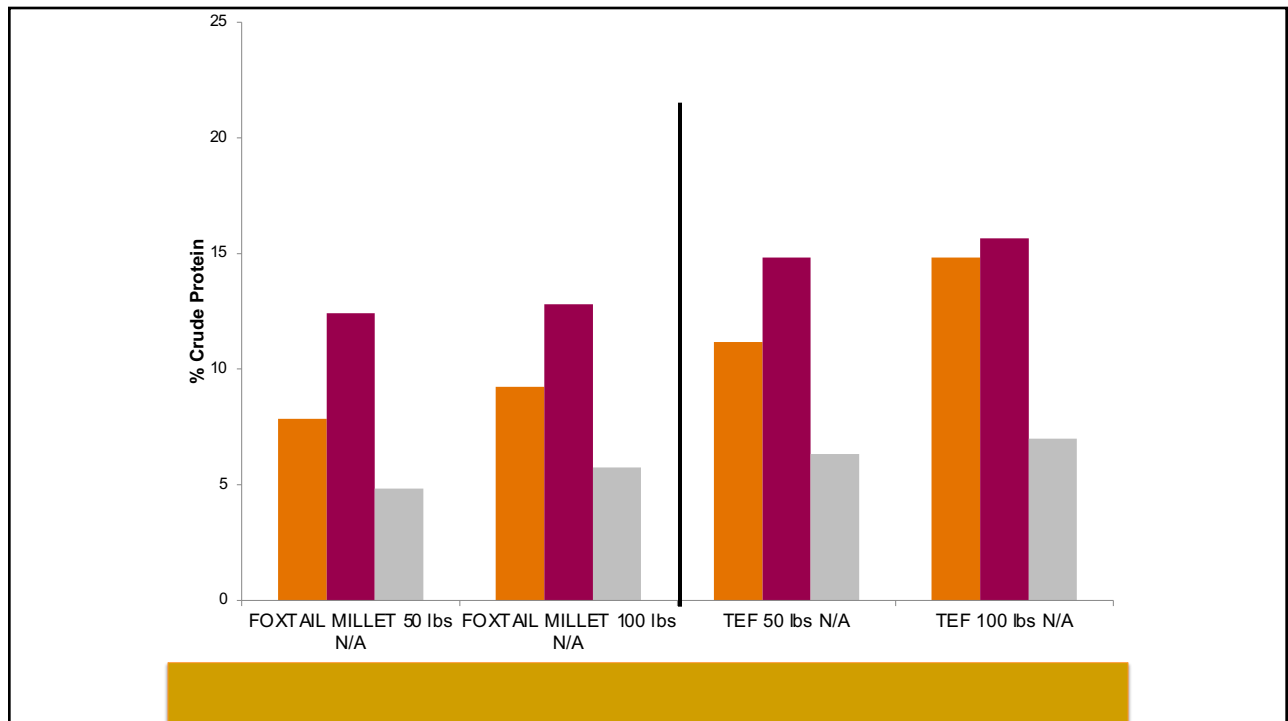
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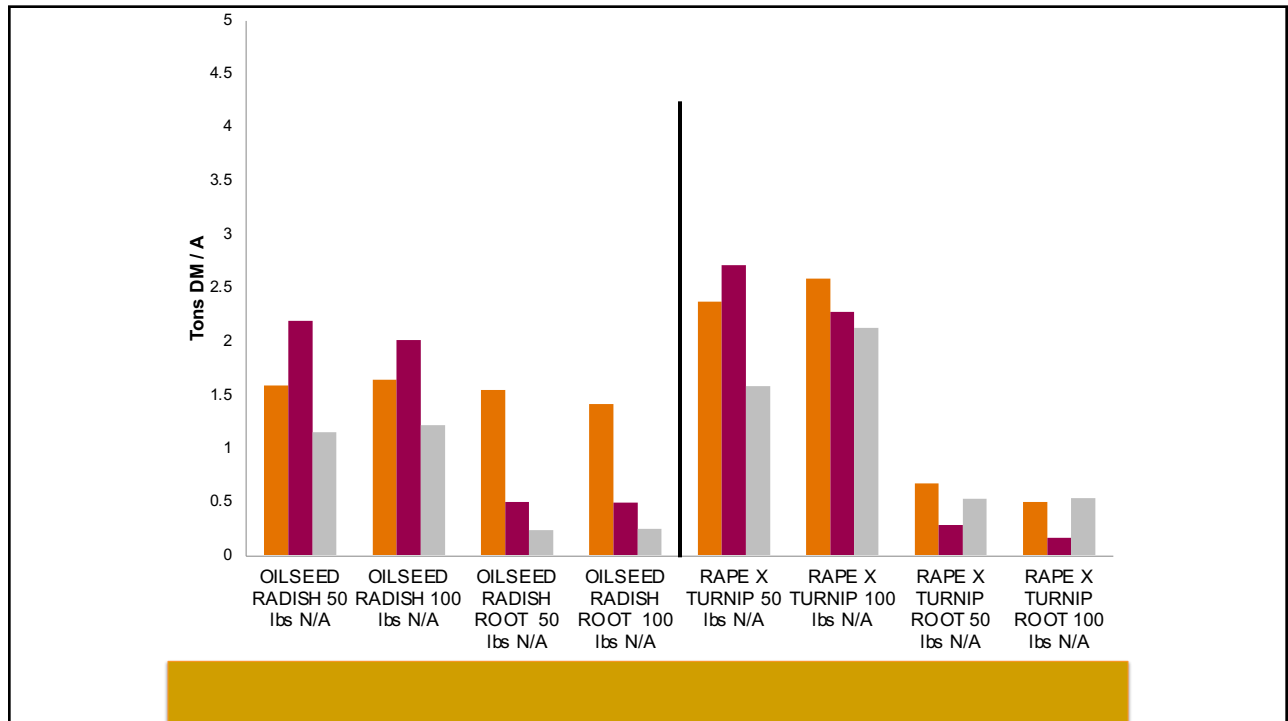
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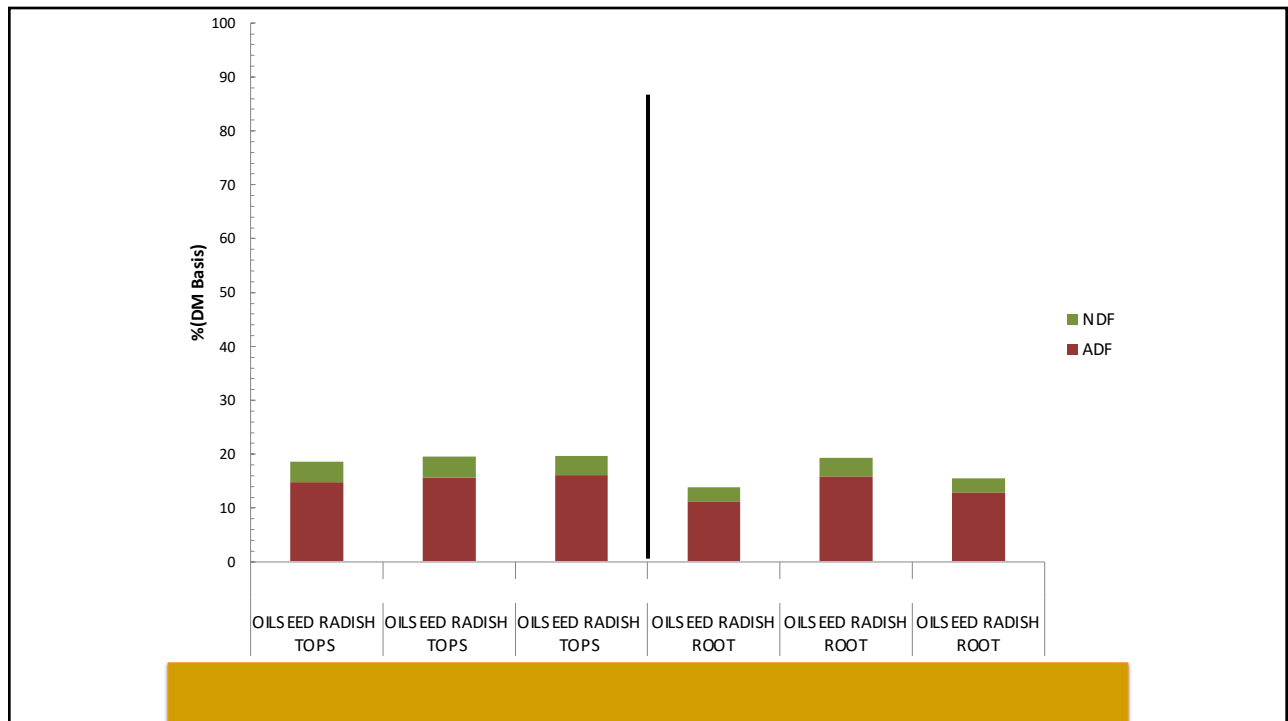
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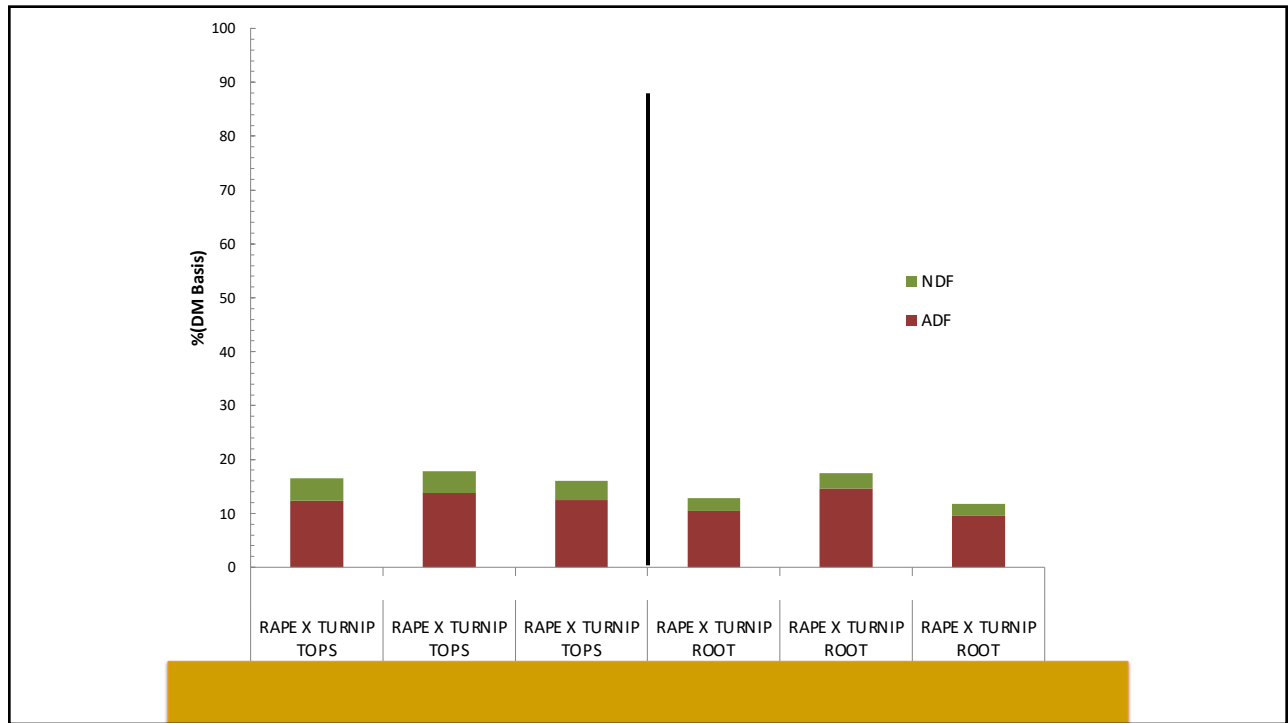


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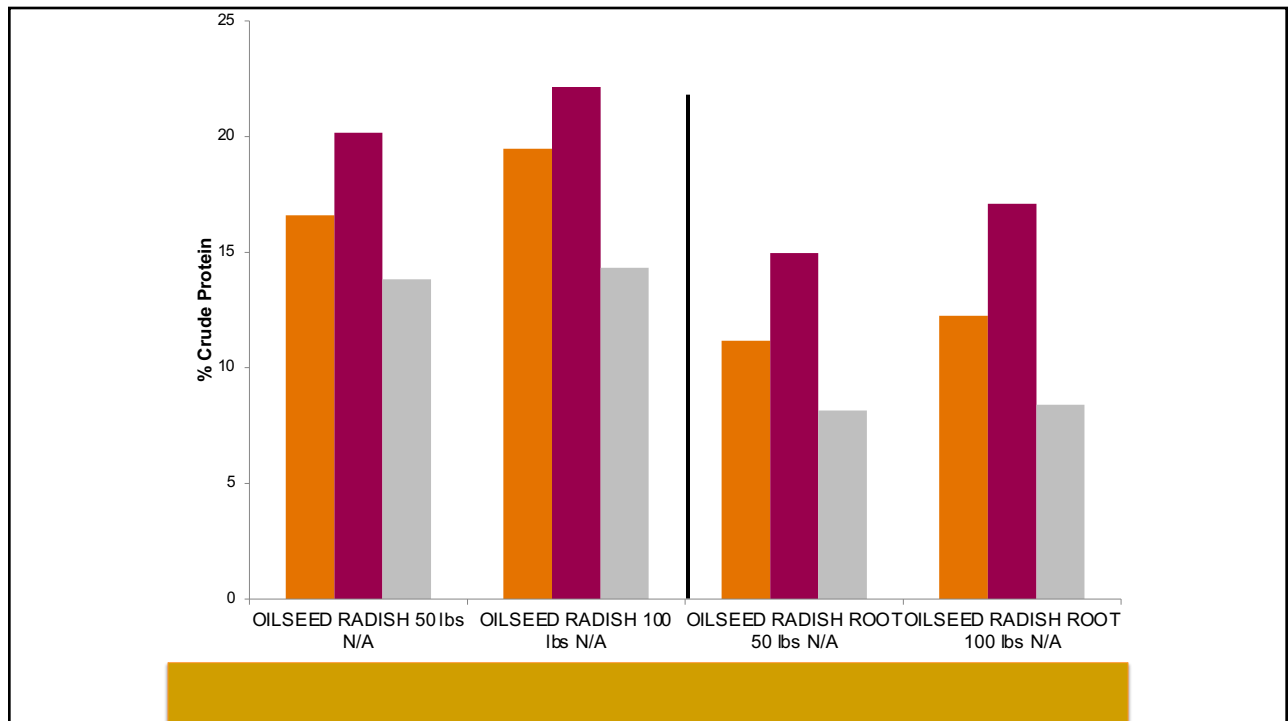


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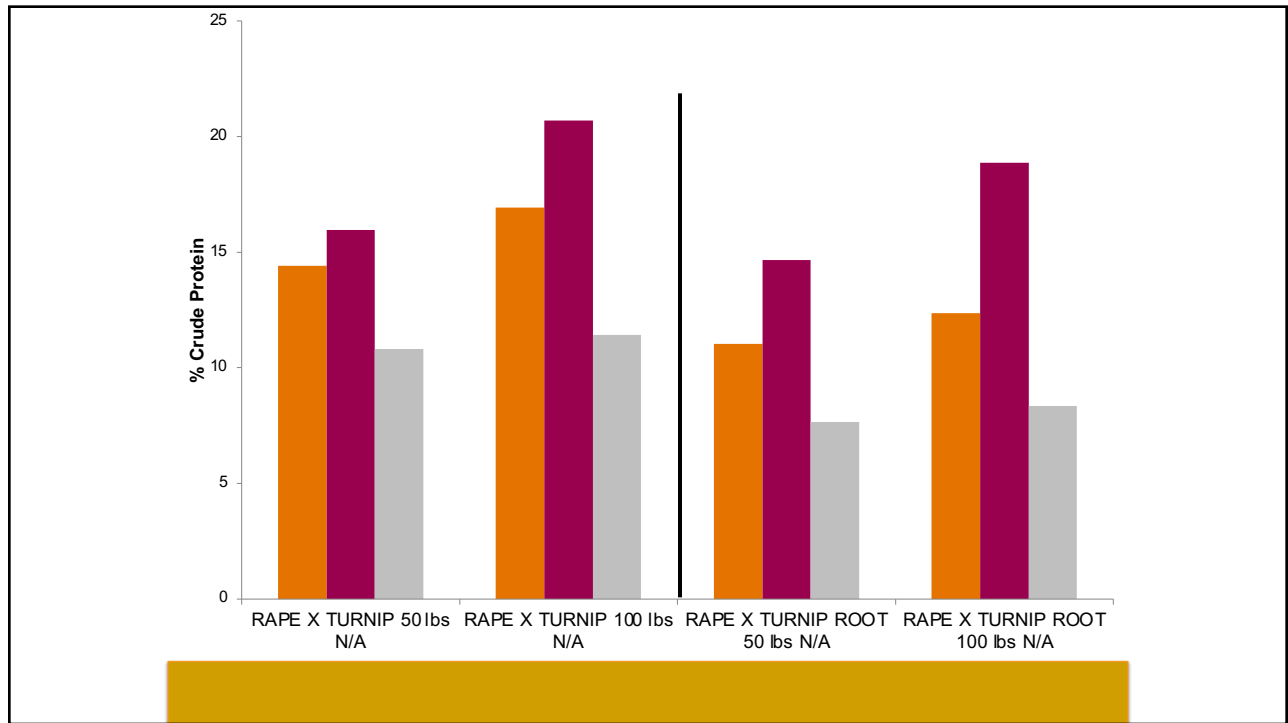




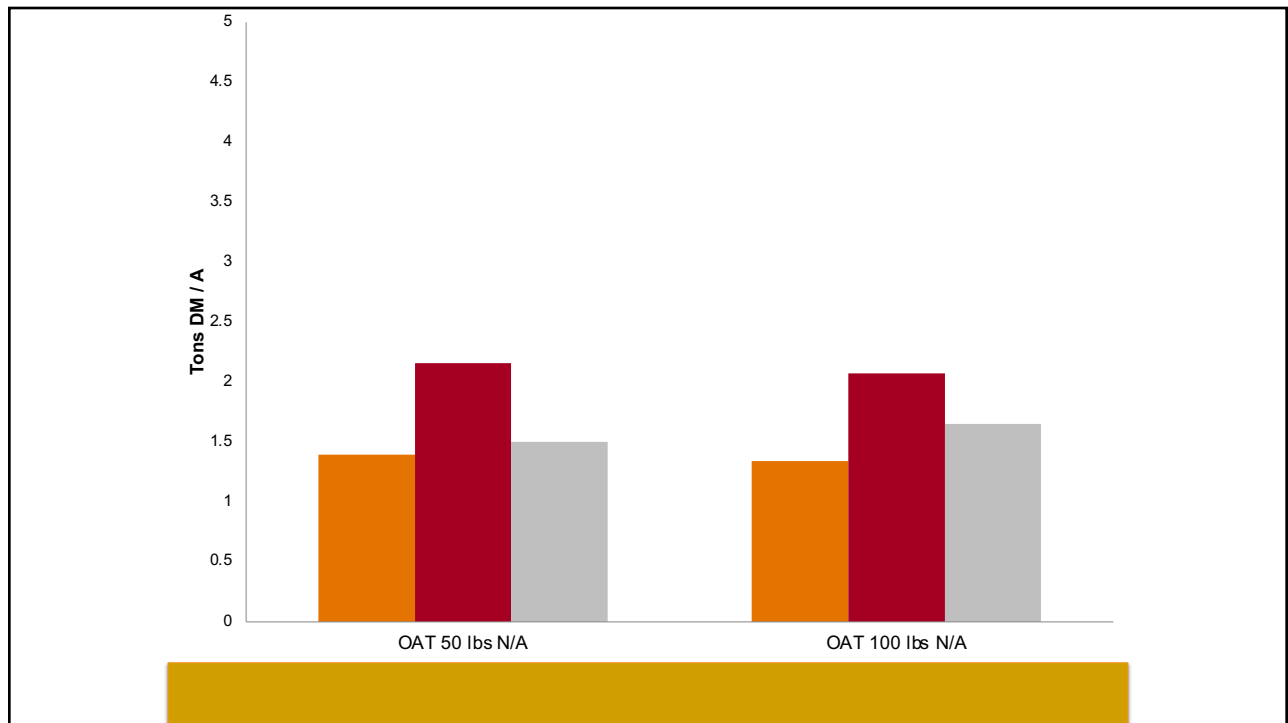
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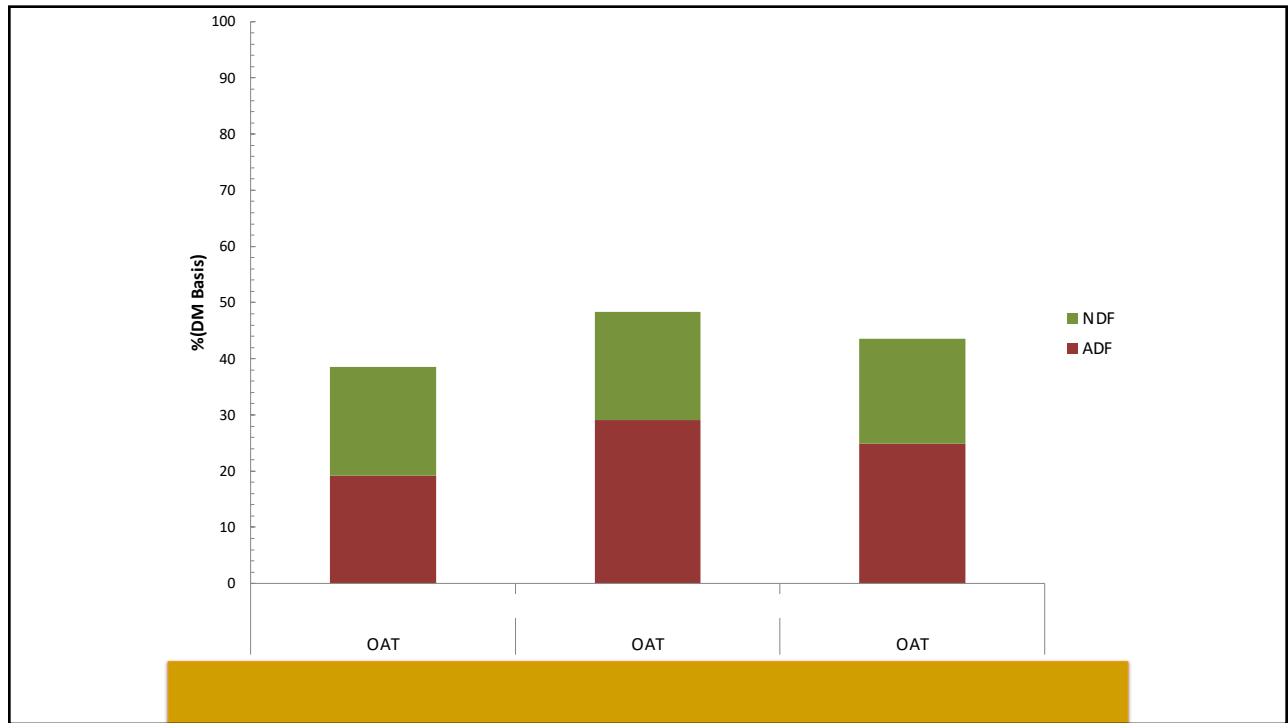
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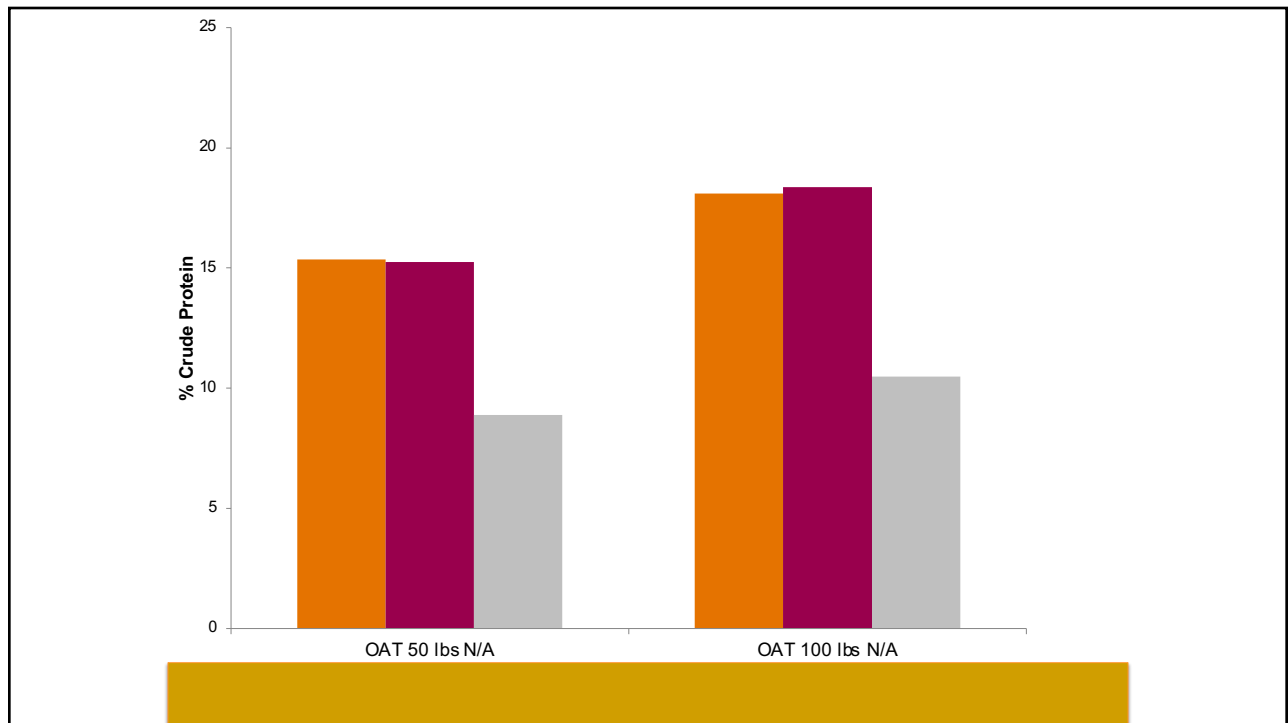
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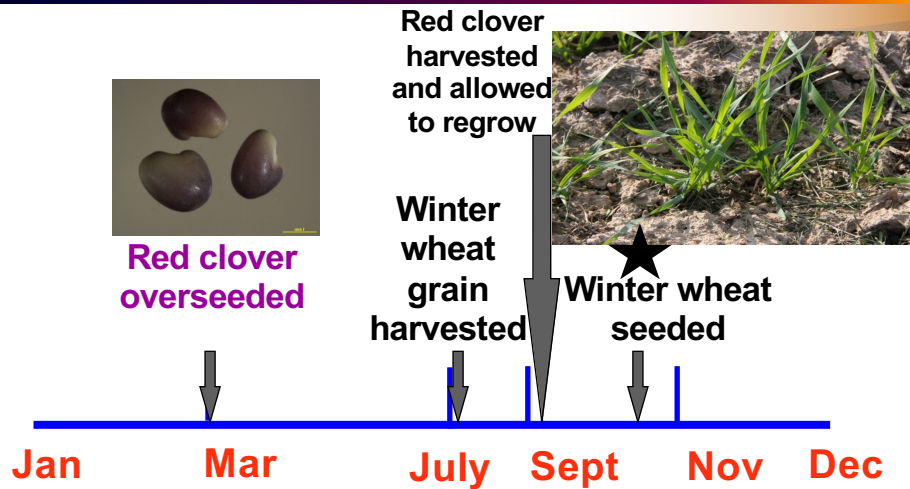


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## Wheat Grain / Red Clover Overseeding Calendar



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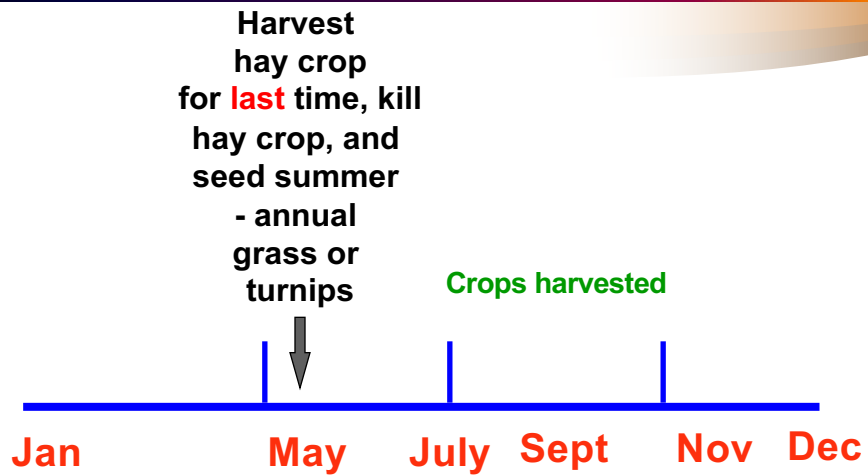
## Red Clover Realities

- Excellent seedling vigor
- Weak perennial legume
- Adapted to most soils in Indiana
- Multiple use possibilities
- To get excellent stand will need to lower wheat yield expectation



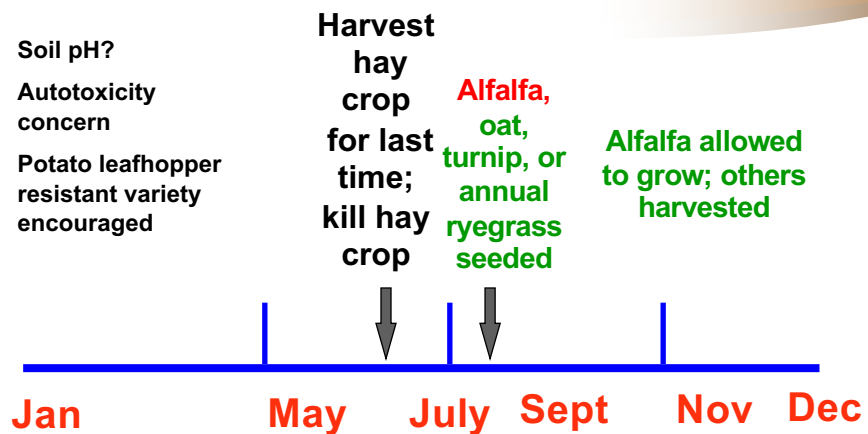
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## Hay Harvest / Summer - Annual Grass or Turnip Calendar



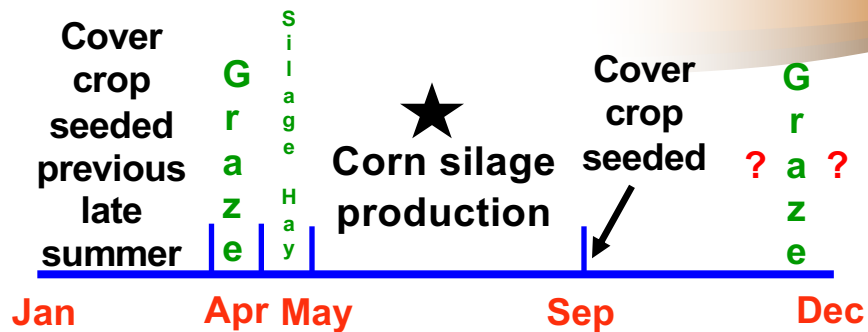
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## Hay Harvest / Alfalfa, Oat, Turnip, or Annual Ryegrass Calendar



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## Winter – Annual Small Grains and Annual Ryegrass Use Calendar



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## Winter-Annual Small Grains and Annual Ryegrass Use Calendar

- Small grains
- Winter wheat
  - Market available for cover crop taken to grain
- Winter rye (**not** ryegrass)
  - Very winterhardy
  - Tall growth needs to be managed
- Winter triticale
  - Cross between wheat and rye  
*Triticum x Secale* = Triticale
  - Seed cost?
- Annual ryegrass
  - Reminders
    - More difficult to kill
    - Timely termination needed



Maturity has major impact on forage yield and quality.

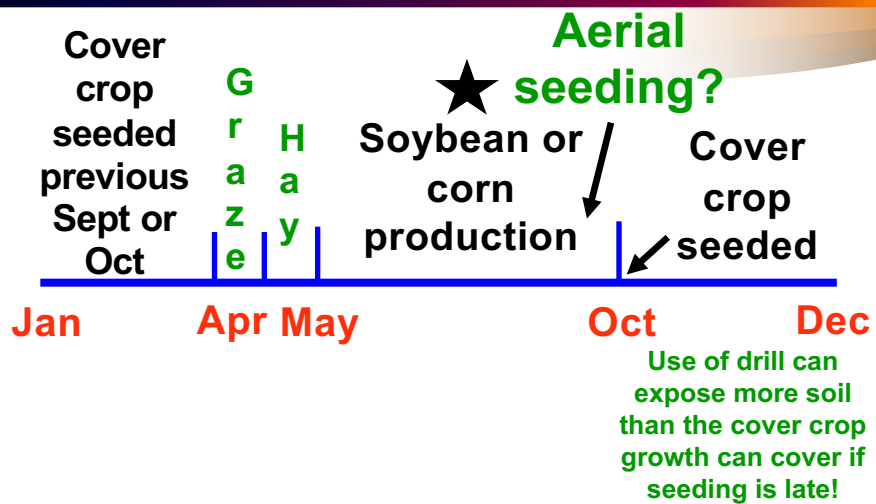
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# Overseeding Ryegrass on September 1 with a Drone

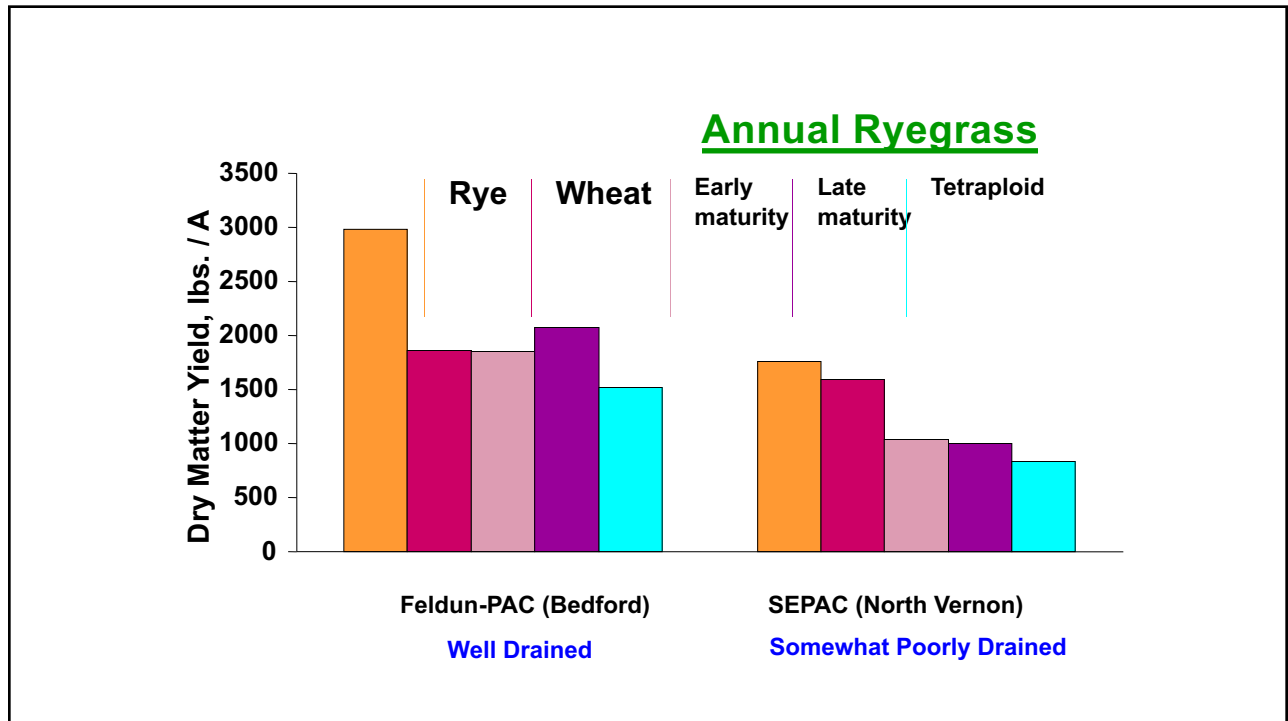


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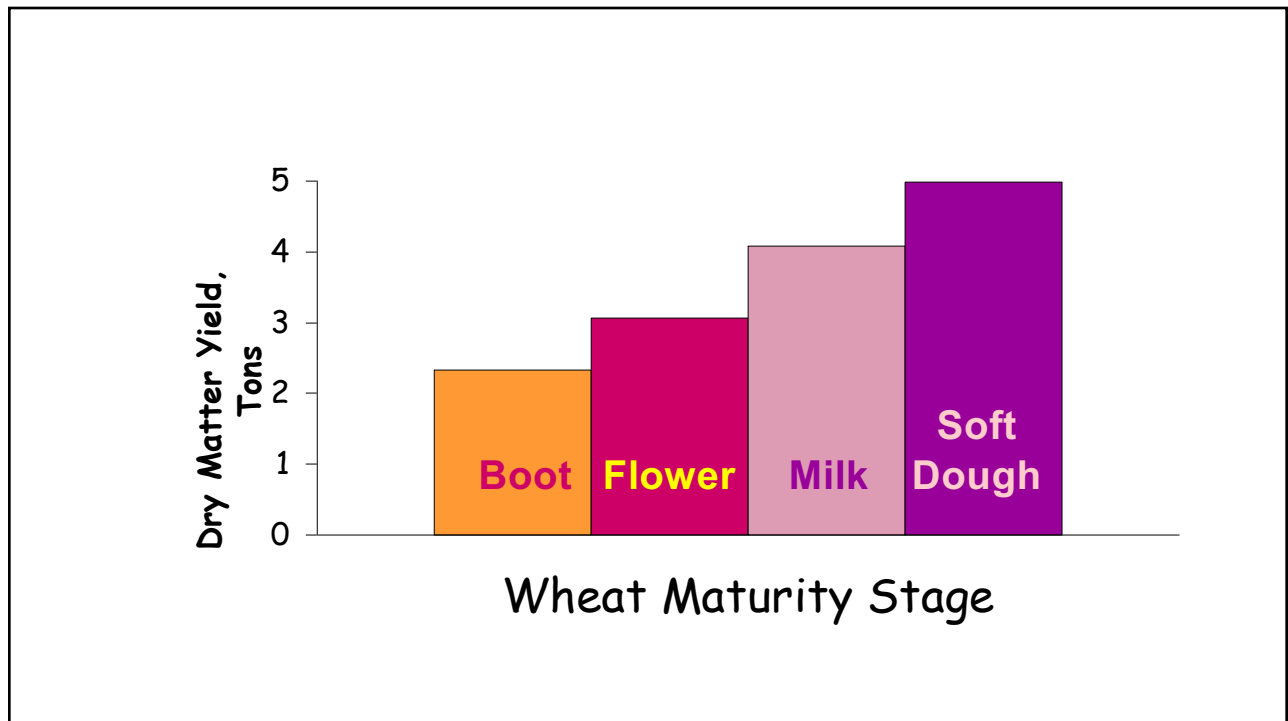
# Winter-Annual Small Grains and Annual Ryegrass Use Calendar



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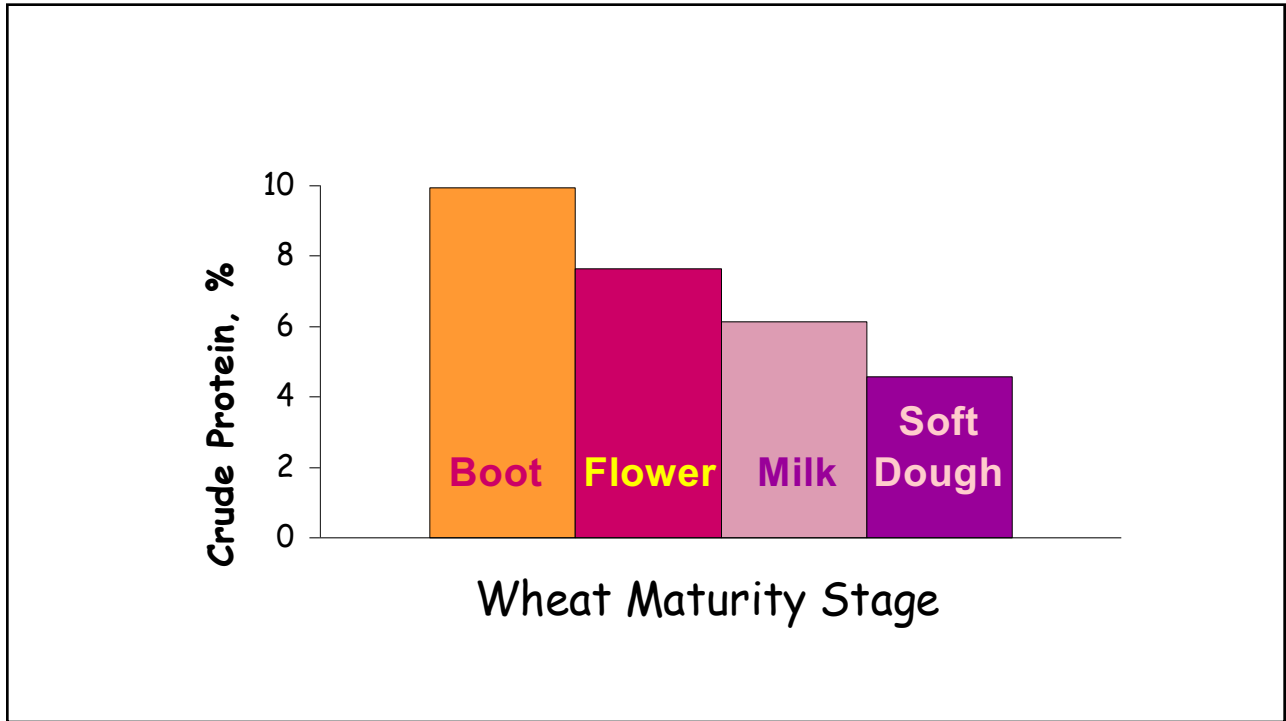


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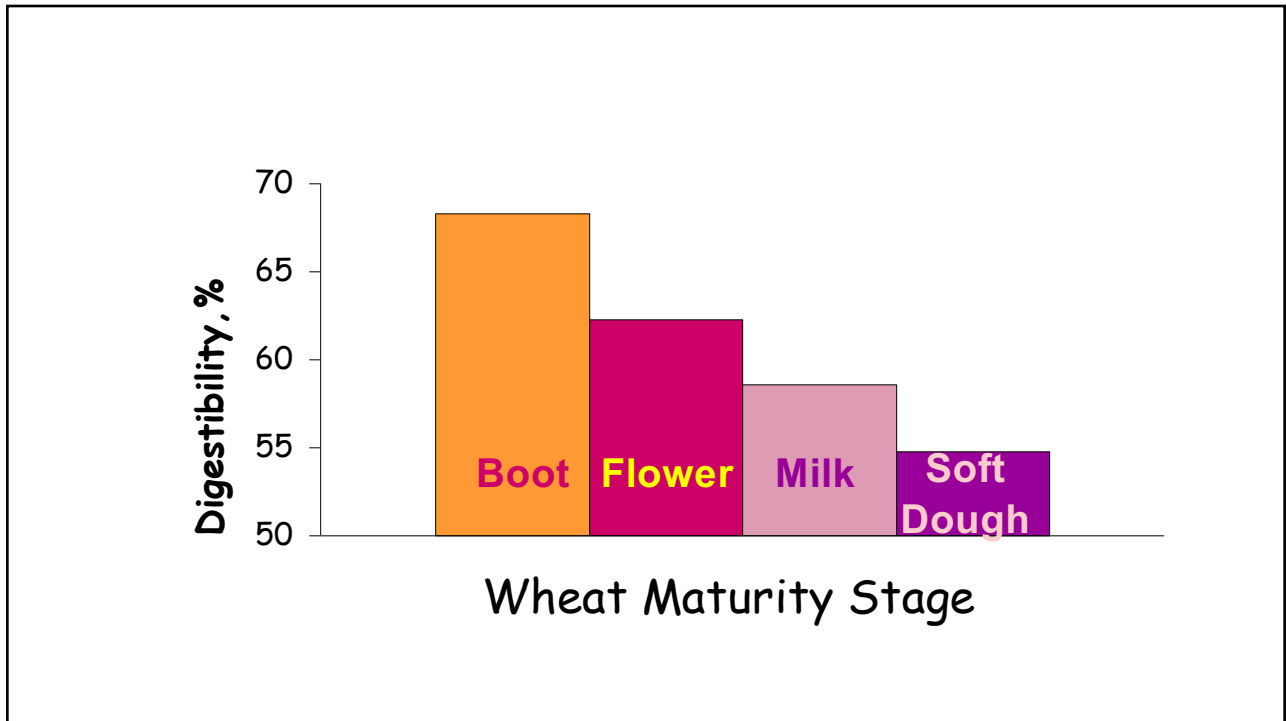


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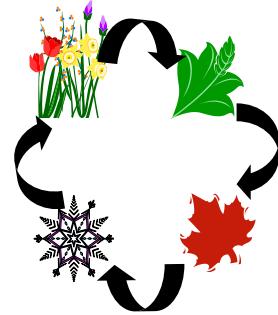
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## Niche Forages Worthy of Consideration as a Cover Crop?

- If fits cropping system
- If feed quality meets animal needs
- Consider possible business relationship between livestock producer and cash crop producer if
  - land is a limiting resource in the livestock enterprise
  - cash crop producer has no livestock experience



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## Interesting approach to use of a Drylot that isn't so dry in the winter!



- Grain and forage sorghums sown late spring at S. IN Purdue Ag Center
- Daily move of one-strand electric fence after crop has no risk of prussic acid
- Amount allocated does not allow over consumption of grain

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# The “Heart of America Grazing Conference” comes to southern Indiana!

## HEART OF AMERICA GRAZING CONFERENCE

FEBRUARY 20-21, 2023

FERDINAND COMMUNITY CENTER,  
FERDINAND, IN

### FEATURED SPEAKERS

Greg Halich - University of Kentucky  
Alan Franzluebbbers - North Carolina  
Johnny Rogers - North Carolina State University

 **PURDUE** | Extension  
UNIVERSITY



**Reduced  
registration  
cost before  
January 22,  
2023**



Information is posted at the  
Indiana Forage Council  
website and Facebook page.  
[www.indianaforage.org](http://www.indianaforage.org)



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## My Wish for You in the Coming Year



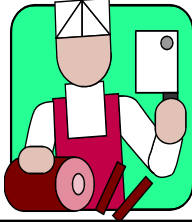
Hope, Peace, Love, and Joy

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# Your Questions ?



**Forages have always been Value Added!!**



**Keeping Green**

