

## Opportunities with Diverse Cover Crops

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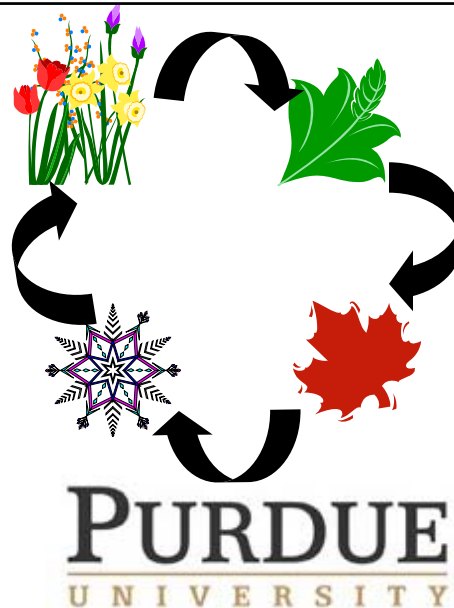
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## Objective Today

To create awareness about under-exploited crops that could enhance agricultural production systems in Indiana and surrounding states.



## Your Assignment



- Listen today and be a critical thinker
- Determine where some of the crops discussed might work in production systems



- Put your resources to work
- Smile as improvements are made
- Communicate the results

## Missed Opportunities



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

# Keeping the Landscape Green with Cover 24/7/52

Jan

Dec

## Missed Opportunities

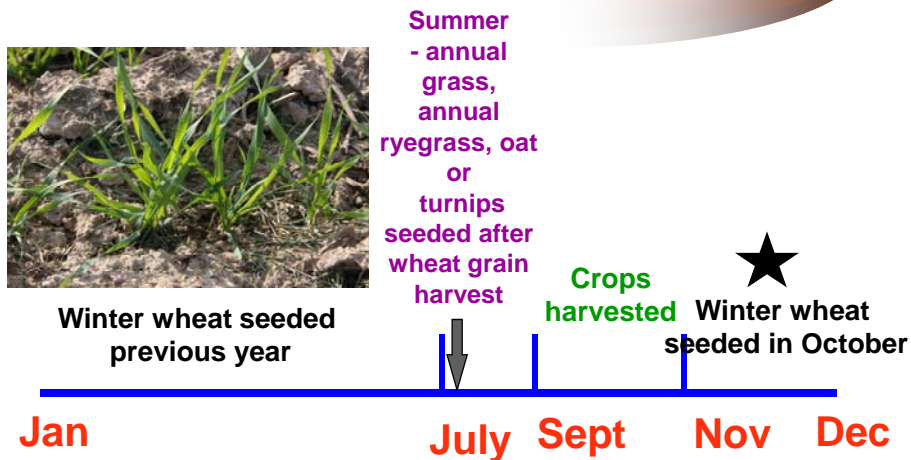
- Double cropping state wide
  - Wheat/soybean not successful in northern Indiana, but opportunities exist with use of other crop choices as cover crops/forage crops
- N value from legumes

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

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

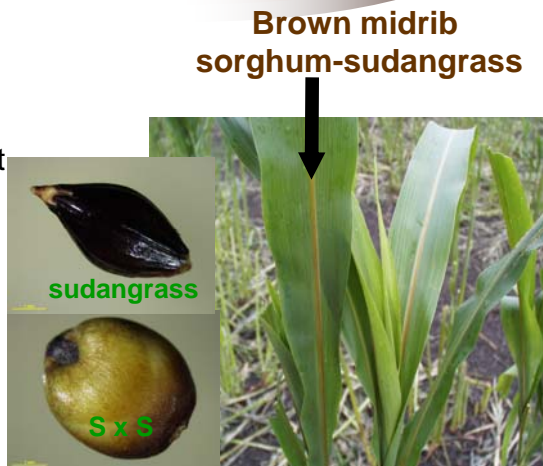
- Adaptation to soil type, soil pH and fertility
- Winterhardiness
- Drought tolerance
- Quality traits
- Ability to “spring back” from harsh situations
- Growth characteristics
  - grass vs. legume vs. forb
  - sod vs. bunch
  - warm-season vs. cool-season
  - winter annual vs. summer annual vs. perennial
- Invasiveness

**Wheat Grain / Annual Grass or Turnip Calendar**



## Sorghum-Sudangrass and Sudangrass Realities

- Summer-annual grass
- Drought tolerant
- Improved digestibility as compared to normal
- Better regrowth than millet and corn
- **Has** prussic acid potential
- Best grazed or ensiled
- BMR genes discovered are **not** created equal!!



## Pearl Millet Realities

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



## 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



## Spring Oat Realities

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



## 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
- Will see remnants in future seasons



## 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 freeze
- Best used by grazing
- **Major** differences among varieties
- Stand loss occurs with each successive round of grazing



## 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

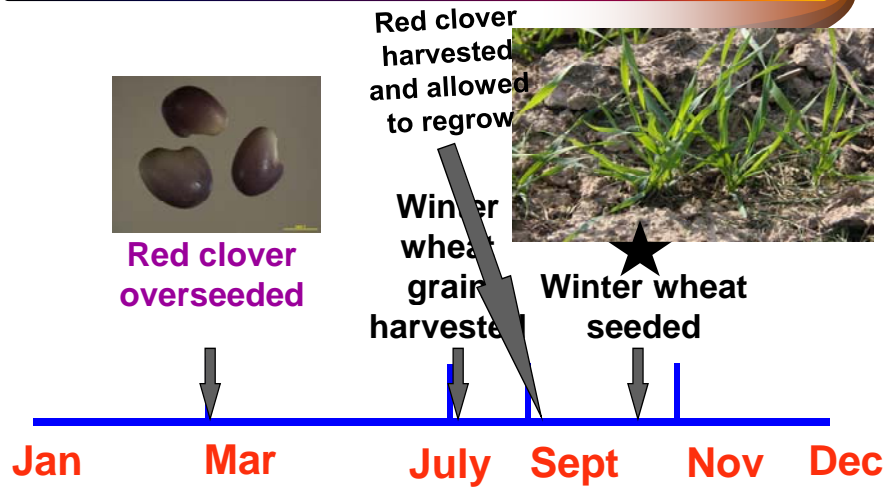


## Teff Realities

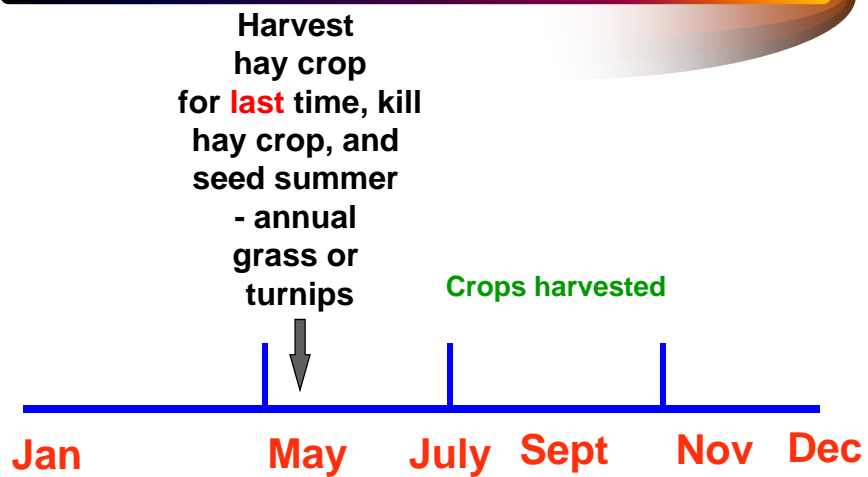
- Annual grass in a temperate environment
- Relatively new in USA
- Seed is extremely small
- Multiple harvests possible
- Multiple use possibilities
- Evaluation is warranted; several varieties



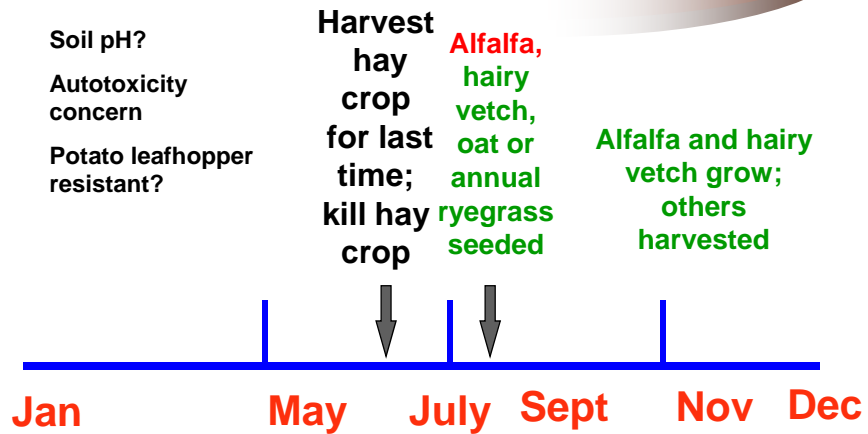
## Wheat Grain / Red Clover Overseeding Calendar



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



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

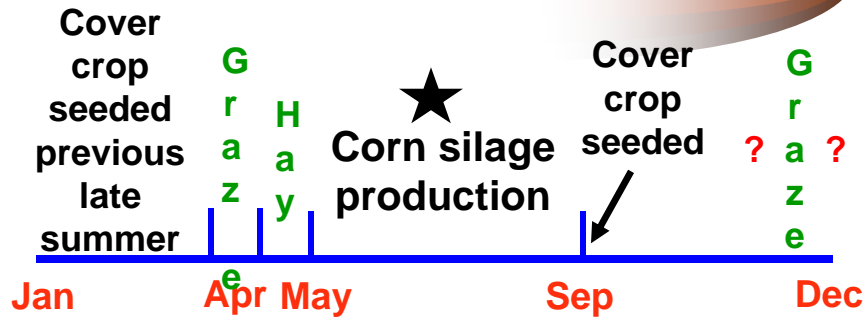


## Hairy Vetch Realities

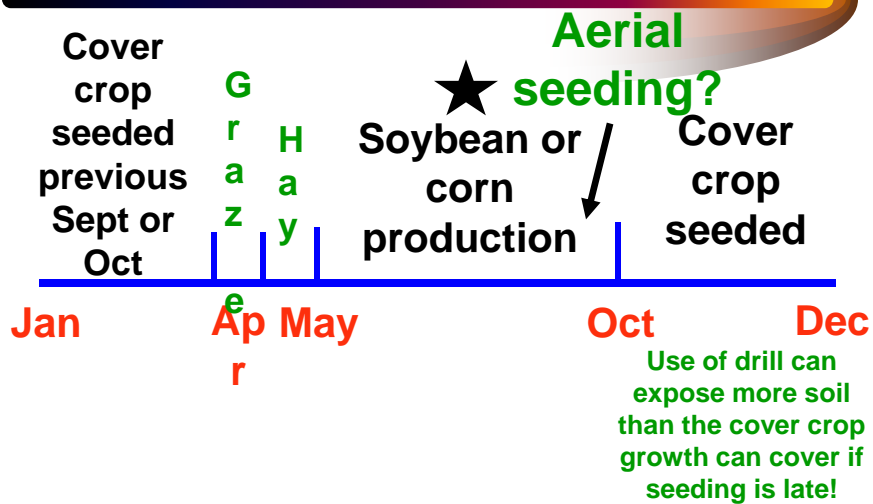
- Winterhardy legume
- Inoculate with specific *Rhizobium* inoculant
- Hard seed (physical dormancy)
- Viny
- Volunteer plants probable
- Nitrogen contribution excellent if crop to follow is planted in late May



## Winter - Annual Cover Crop Use Calendar



## Winter - Annual Cover Crop Use Calendar



# Winter-Annuals

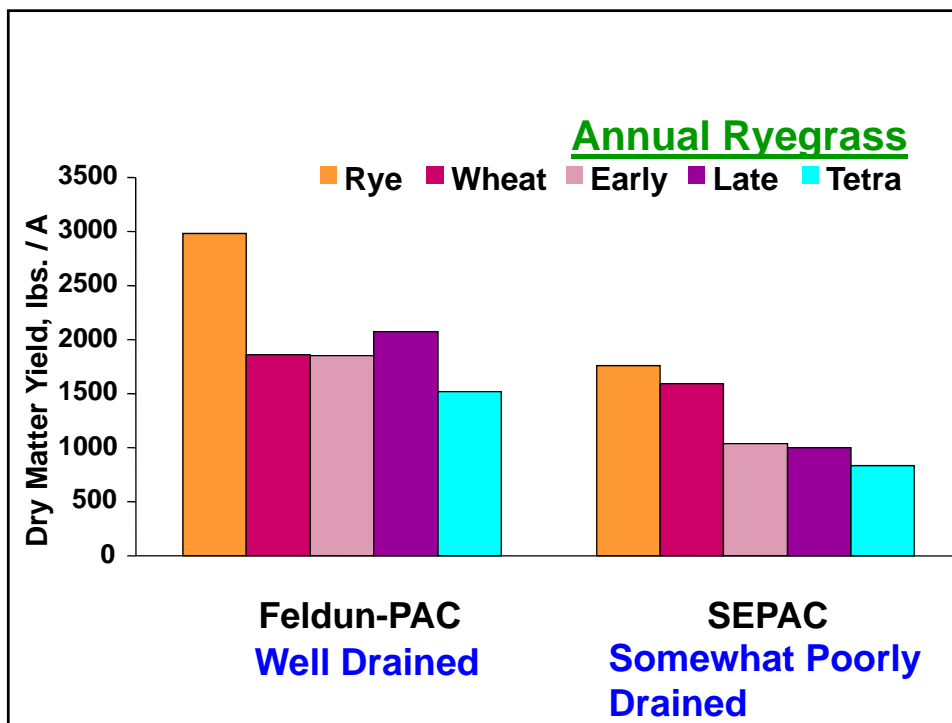
## Small grains

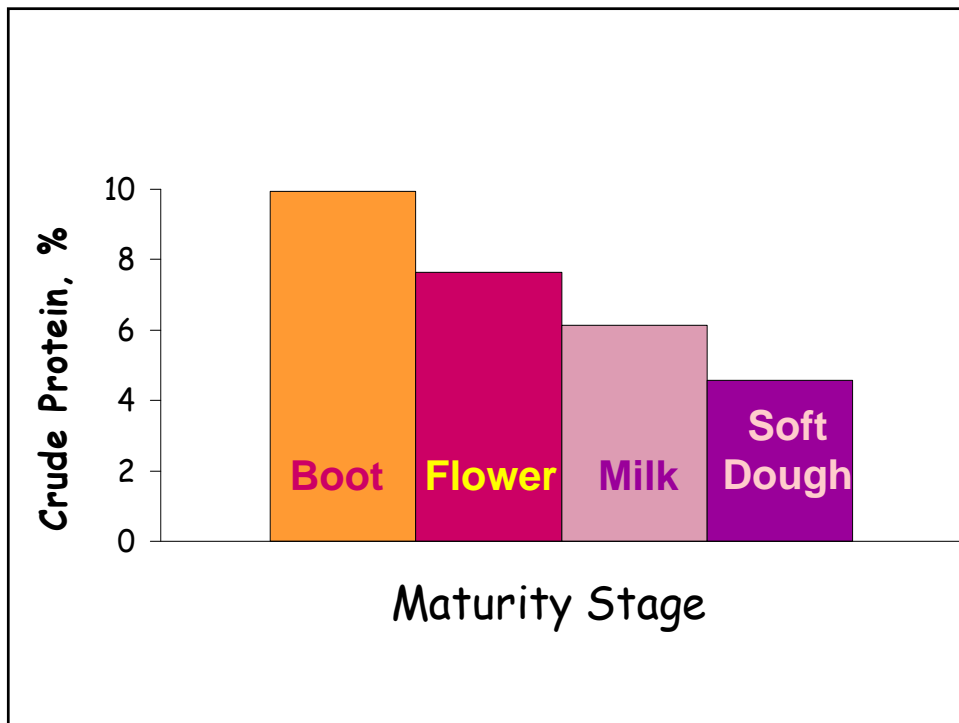
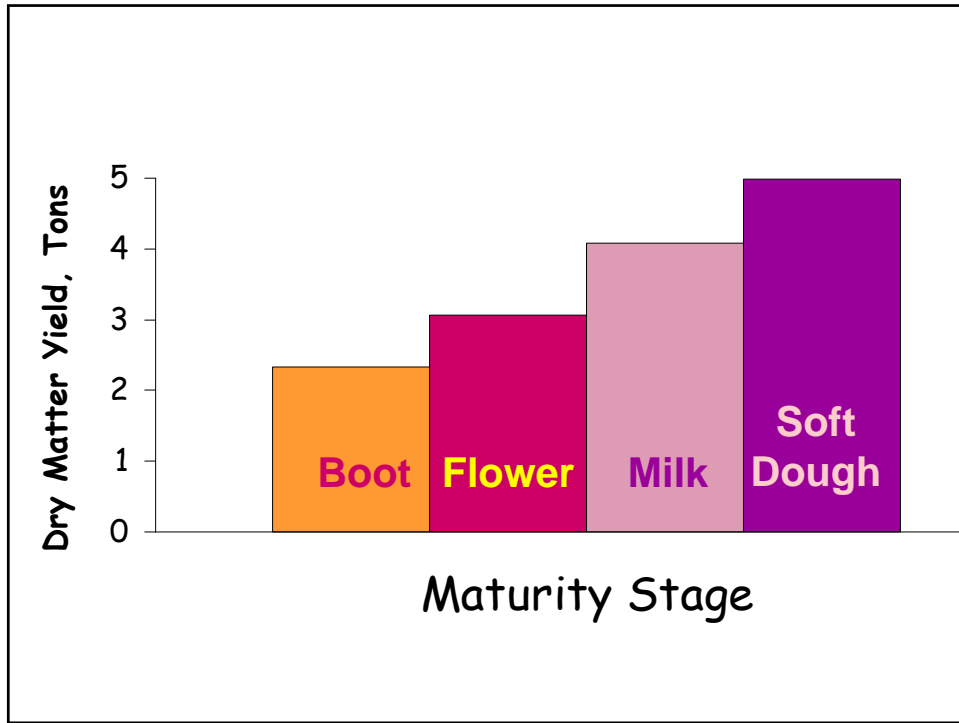
- Winter wheat
  - Market available for cover crop taken to grain
- Winter rye (**not** ryegrass)
  - Very winterhardy
  - Tall growth needs to be managed
  - Allelopathic??
- Winter triticale
  - Cross between wheat and rye  
*Triticum x Secale* = Triticale
  - Seed cost?

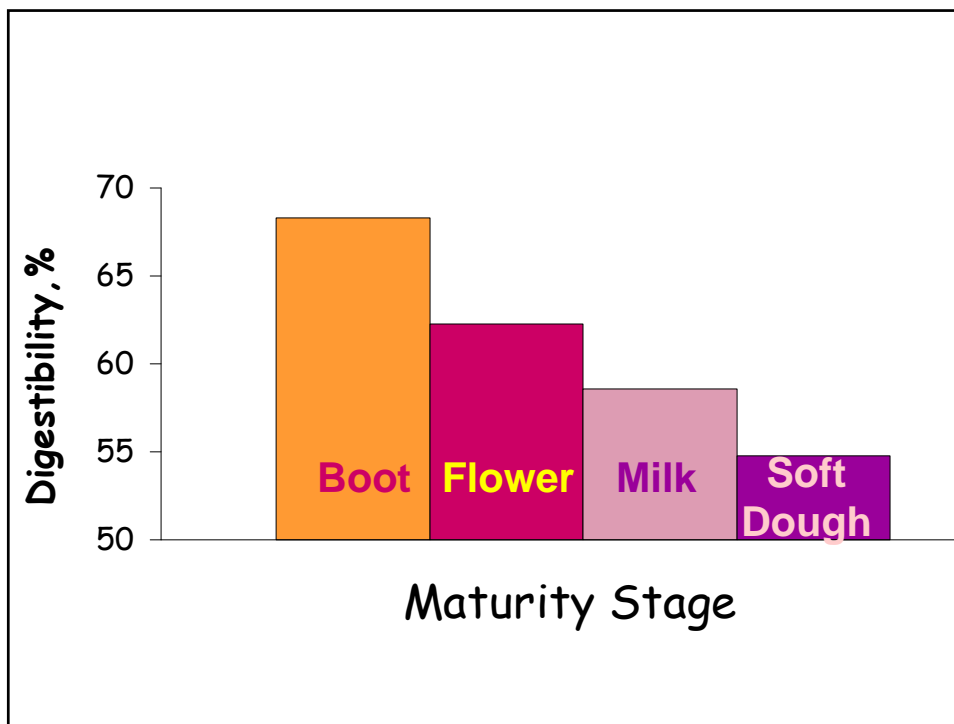


## Legumes

Hairy vetch a better alternative than Austrian winter pea







## Great Opportunities!



January 21 and 22  
 Heart of America Grazing  
 Conference  
 Holiday Inn, Columbus, Indiana

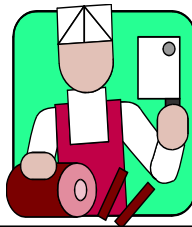
February 27 and 28  
 Cattle and Forage Symposium  
 Hilton North, Indianapolis



# Your Questions ?



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



**Keepin' Green**

