Opportunities with Diverse Cover Crops

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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

- Summer - annual grass, annual ryegrass, oat or turnips seeded after wheat grain harvest
- Winter wheat seeded in October
- Crops harvested
- Winter wheat seeded previous year

Jan  July  Sept  Nov  Dec
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

- Red clover seeded
- Winter wheat seeded
- Red clover harvested and allowed to regrow
- Winter wheat grain harvested
- Winter wheat grain harvested

Jan | Mar | July | Sept | Nov | Dec

Hay Harvest / Summer - Annual Grass or Turnip Calendar

- Harvest hay crop for last time, kill hay crop, and seed summer annual grass or turnips
- Crops harvested

Jan | May | July | Sept | Nov | Dec
Hay Harvest / Alfalfa, Hairy Vetch, Oat, Turnip or Annual Ryegrass Calendar

Soil pH?
Autotoxicity concern
Potato leafhopper resistant?

Harvest hay crop for last time; kill hay crop

Alfalfa, hairy vetch, oat or annual ryegrass seeded

Jan May July Sept Nov Dec

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

Cover crop seeded previous late summer

Jan Apr May Sep Dec

Corn silage production

Cover crop seeded

Grazing?

Winter - Annual Cover Crop Use Calendar

Cover crop seeded previous Sept or Oct

Jan Apr May Oct Dec

Aerial seeding?

Soybean or corn production

Use of drill can expose more soil than the cover crop growth can cover if seeding is late!
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
    \[ Triticum \times Secale = Triticale \]
  - Seed cost?

Legumes
Hairy vetch a better alternative than Austrian winter pea

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**Annual Ryegrass**

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<th>Rye</th>
<th>Wheat</th>
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<th>Late</th>
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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