Reducing Livestock Production Costs by Grazing Annuals and Cover Crops

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FEED COST

- 60% or More of the Cost of Production
- Feed That Animals Harvest Themselves is Almost Always Cheaper than Purchased or Stored Feed
- Need to Increase the Number of Grazing Days /Animal / Year ….. Year Round Grazing!
Develop a Grazing Plan

• Think About 365 Days
• Do a Forage Audit…..How Much Do You Have? VS How Much Do You Need?
Use Managed Grazing

- Investment or “Trade-Off” Your Management (Time & Labor)
- For Reduced Feed Costs
- Improved Feed Quality & Quantity
- Bale 20 – 25% of Early Season Growth: Winter Feed
- By Increasing Your Harvest Efficiency and Reducing Waste …….. May More Than Double Your Forage Dry Matter Production/Utilization Which Means Less Acres for Grazing……Or Increased Livestock Numbers Fed!
• Clip or Graze 70 Days Before Killing Frost
• Add 50 # Nitrogen / Acre
• Accumulate High Quality Forage (2,000#/A)
• Provides Winter Grazing
  Only limited by the # of Acres You Have

Stockpile Cool Season Grasses

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• This is Illinois Unused Treasure!
• The Least Expensive Feed We Have for Ruminant Animals……Even Better W/ Cover Crops
• Add Flexibility to Your Grazing System
• Adds Forage in Off Peak Times When Forage Is Short
• Allows for Stock Piling Cool Season Grasses for Deferred Grazing

Include Annual Crops & Cover Crops

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Windows of Opportunity

• Early Spring Seeded Annuals
  - little used lots or acreage set aside for annuals

• Warm Season Plantings (65-70°) soil temperature
  - Seeded into early grazed annuals

• Following Small Grain Harvest - July

• After Corn Silage - August

• Cover Crops Seeded Into or Following Cash Crops
Cool Season Annuals

- Cereal Rye, Wheat, Triticale
- Oats
- Barley
- Annual Ryegrass

**All of the Above:** Very High Quality – May be used as a protein supplement / Compliments Corn Crop Residue (May be Above 30% CP)  Grass Tetany Possible

Feed Magnesium Oxide in Mineral Mix…
Bloat Potential… Free Choice Forage w/ Ionophore Rumensin or Bovatec
Blood Urea Nitrogen Levels…. Effect Fertility ?
Cereal Rye

- Extended Grazing – Late Fall & Spring
  (1 ½ - 2 ton / A)
- Hay Option: 2,000-6,000 Dry Forage/A depending upon moisture & fertility – Also Bag or Chop!
  - Don’t Get Carried Away with Nitrogen Fertility
    Nitrates can become an issue……..
- Management Cautions –
  Weed Potential after
  Allelopathy – consider rotation…
  Heavy user of Nitrogen and Soil Moisture
  Requires Termination – Follow recommendations carefully
- Most benefits & Cautions of other cereal crops
- Graze, Bale, Bag, Chop
- Less likely to be become a weed
- Must be terminated – Easier to Kill than Rye or Barley – No rush to kill
- Corn After Wheat Not Recommended
• Wheat x Rye Cross – Resembles Parents
• Benefits & Cautions of other cereal crops
• Graze, Bale, Bag, Chop
• Requires Termination Prior to Cash Crop
• Quick Growth, Easy to Establish
• Will Winter Kill
• Fall Legume Nurse Crop / Out performs most others

Spring Green Manure or Companion Crop
• More Palatable than Rye
• More Tolerant to Wet Soil than Barley but requires more moisture

Spring Oats

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• Will Winter Kill but $10^0$ Degrees Lower Temperature Than Spring Oats
• May Get Two - three Weeks More Fall Growth
• Other Characteristics are the Same as Spring Oats
• Prefers cool, dry growing areas
• As Spring Cover Crop – Farther North than other Cereal Crops because of its short growing period
• More Biomass in Shorter Time Than Any Other Cereal Grain
• Winter Kill in Fall Planting
• High Quality Grazing
• Hay Option: 2,000-6,000 pounds of DM (depending upon moisture and fertility)
• Very Deep Root System – May Increase Difficulty of Termination
• Some Varieties may Winter Kill if Planted Late
• Early Planted Full Season Growth: May Provide 9,000 DM/A w/ Moisture & Fertility
• May be used in Over Seeding Thin Pastures
• Crimson Clover
• Berseem clover
• Soybeans

Summer or Winter Annual Legumes

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• Rapid Growth – N for Full Season Crops 70-150 lbs.
• Summer Annual N. Illinois/ Winter Annual S. IL
• Plant After Danger of Frost
• Mid Summer Planting – 1,500-2,000 lbs./A DM and perhaps 100 lbs. by Late November
• Mixtures with Small Grains
• Least Winter Hardy of All Annual Clovers
• Produces More Biomass Than Other Annual Clovers
• Plant After Danger of Frost…. At 60° Berseem Will be Ready to Cut in 60 Days
• 18-28 % CP – Comparable or better than Crimson Clover or Alfalfa for Feed
• Planted Mid August can Grow 15 Inches Before Frost Termination

Berseem Clover

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• Two Cautions: Herbicides / Crop Insurance
• Grazing - most Efficient means of Harvest and Strip Grazing is Needed to Reduce Trampling
• Hay – When 50% of pods are immature
  16-20% CP; 30% ADF; 40% NDF
  Crimping helps to get hay Dry…Store Inside
  4 Ton DM / A possible

Soybeans

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• Turnips – leaf and bulb types
• Rape
• Kale
• Swedes
• Hybrids….. Turnip x rape; turnip x Kale; turnip x asiatic leaf Vegetables (Chinese Cabbage)
• Forage Radish

Brassicas

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• Leaf Type: Spring or Summer Planting: 70-90 Days for Grazing
• Bulb Type: Stockpiled for Fall Winter Grazing
Cautions: Extremely High Quality: High Energy & Protein levels……Low Fiber……Plant with small grain! Or feed Extra Fiber Source During Grazing
• Graze For 1-2 hrs./Day during adjustment period
• Do Not Overgraze – Multiple Grazings Possible
• Strip Graze to Reduce Waste

Turnips

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• **Rape**: 90-120 Days to Grazing
• Lower CP than Turnips 14-17%
• May Yield 8,000/A DM Planted May-June
• Lower Yield Potential Planted After August 1
• **Kale**: Highest Yields of All Brassicas…. > 12,000 lbs. / A at 150 Days from emergence
• Survives temperatures down to 10 Degrees

**Other Brassicas**

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• **Turnip x Rape Hybrid** - Often planted early spring with Oats – Graze every 30 Days

• **Turnip x Kale Hybrid** – 10-12 Weeks 2-4 Grazings – Efficient in minimum rainfall

• Good Frost Tolerance and Extended Grazing

• **Turnip x Chinese Cabbage** – Graze at 6-8 wks

• Sometimes Grazed 2, 3, or 4th grazing cycles susceptible to drought and aphids

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**Brassica Hybrids**

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• Difference in Radishes

1) **Daikon Radish** – Selected For Human Consumption (greens & tuber)

2) **Oil Seed Radish** – Selected For Oil Production & Seed

3) **Forage Radish** – Selected For Dry Matter Production & Palatability (greens & tuber) Deep Root with a Low Crown, Tolerate Multiple Graze
• Do Not Drill Through Compaction
• Tap Roots Seek out Cracks in Soil Which Assist in Loosening the Soil Profile
• Tuber Development is influenced by population/density, weather, and Plant Date
• Tap Root Development is impacted by soil Health and Soil Type
• Bigger is not Always Better!

Radishes

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• Corn
• Sudan; Sorghums; Sorghum x Sudan Hybrids
• Pearl Millet; foxtail millet etc.
• Herbicides / Crop Insurance
• Flexibility: Summer/Fall/Winter Grazing
• 10 Tons of Forage DM/A
• Stockers/Beef Heifers/Cows/Sheep/Goats/Hogs
• CP 8.5-9.7; TDN 65-68; ADF 27-34; NDF 44-54
• No-tilled Fescue Sod after burn-down; Graze pre-Tassel; Graze Stockpiled Grass

Corn

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• Rapid Growth and Quick Recovery After Grazing
• Tolerant to Drought and High Temperatures
• Highly Palatable and Nutritious Forage
• Few Insect and Disease Problems
• Usually Do Not Require Herbicides
• High Carrying Capacity When Rotationally Grazed

Sudan Family

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Sudan Grazing Management

- **Sudangrass and Hybrid Sudangrass**
  - 35 Days or 18 Inches in Height
  - 4-5 Animal Units / Acre
  - 7-10 Days Grazing to 6-8 Inch Stubble
  - Rest Period about 21 Days to 18” Grazing Ht.

- **Sorghum-Sudan Hybrid**
  - 40 Days or 24-30 Inches in Height
  - 5-6 Animal Units / Acre
  - 7-10 Days Grazing to 6-8 Inch Stubble
  - Rest Period about 25 Days to 24-30 Inch Height
• Hay: Difficult to Dry Down Cut 30-36 Inch Height; Prussic Acid Decreases while curing
• Haylage: Similar or taller Height…. 3 cut system; Wilt to 50-60% Moisture
• Green-Chop: Forage usually Safer than Grazing Chop as Much Forage as Cattle will Consume in 4-5 hrs.
• Nitrates are a Concern in Drought or Stress
• Choose Herbicides Carefully
• Crop Insurance Concerns Related to:

Planting Date: (After Physiological Maturity of Cash Crop)

Use as Forage Crop / Cash Crop Use / Vegetable Crop (Turnip, Radish) Reporting/Inspection by: FSA/NRCS

Know the Rules / Before You Play the Game
• Maintain Soil Fertility and pH
• Plant Quality Seed
• Establish a Good Stand
• Inoculate Legumes (Specific & Fresh)
• Plant Early
• Terminate Late

Maximize Biomass

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Seeding Cover Crops

- Frost Seeding
- Over seeding – Aerial or Ground
- Broadcast
- Drill
- Precision Planting

*Seeding Method Affects Seeding Rate*
• Keep in Mind – Forage Quality
  - Mature vs. Vegetative Growth

• Harvest Efficiency Affects Utilization

<table>
<thead>
<tr>
<th>Utilization</th>
<th>Stockpiled Forage or Annual Forage</th>
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<tbody>
<tr>
<td>80%</td>
<td>1 - Day Strip Graze</td>
</tr>
<tr>
<td>70%</td>
<td>3 – Day Strip Graze</td>
</tr>
<tr>
<td>60%</td>
<td>7 – Day Strip Graze</td>
</tr>
<tr>
<td>50%</td>
<td>14 – Day Strip Graze</td>
</tr>
<tr>
<td>30-40%</td>
<td>Set Stock</td>
</tr>
</tbody>
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When Grazing Annuals

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• More With High Hay Prices!

**Stockpiled Forage** - Strip Grazed……
$.30/Cow/Day

**Winter Annual Forage** – Strip Grazed……
$.80-1.00/Cow/Day

**Hay Feeding**  @200/Ton….Assuming NO Waste!
$3.37/Cow/Day

**Set Stocking** - Doubles the Cost of Forage
Because

½ is Wasted Due to Trampling and Treading

**What Is Your Labor Worth?**

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• 3- Day Strip Grazing Provides 40% More Grazing Days/Acre Than 14-Day Strip Graze
• It takes 45-60 Minutes to Take Down & Put Up ½ Mile of Polywire with Step-In Posts
• It Takes 20 Minutes to Take Down & Put Up 1,000 Feet of Fence with the Right Tools
• 435 Feet of Fence Take Down & Put Up in 7 Minutes With a Geared Real

Conclude With A Few Quotes
From: Jim Gerrish

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Making Allocation Easy

Use 50 ft post spacing... then every post equals 1/2 acre

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“Length of the Grazing Season is More Attitude Than Environment”
Jim Gerrish