

# Reducing Livestock Production Costs by Grazing Annuals and Cover Crops

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**C-BMP**

Illinois Council on Best  
Management Practices

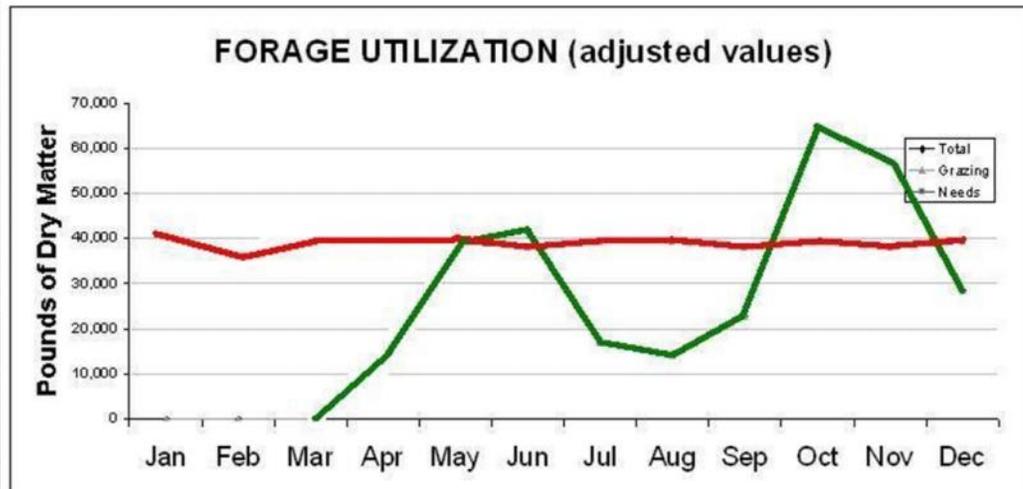
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# FEED COST

- 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!

- Think About 365 Days
- Do a Forage Audit.....How Much Do You Have? VS How Much Do You Need?



Source: ILLINOIS RAZE 2005, Version 1

TABLE 5-2. FORAGE UTILIZATION BY MONTH (with optional user adjusted values)

	Plan: 12/14/2005												Total	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Forage Needs (Table 2-2)	37,800	35,280	39,060	37,800	39,060	37,800	39,060	39,060	37,800	39,060	37,800	39,060	39,060	458,640
Grazing Forage (Table 4-2)	0	0	0	12,800	38,750	42,000	16,800	14,200	22,800	64,750	57,000	28,500	297,500	
Additional Feed or Hay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Forage Available	0	0	0	12,800	38,750	42,000	16,800	14,200	22,800	64,750	57,000	28,500	297,500	
Grazing Surplus/Deficit	-37,800	-35,280	-39,060	-25,000	-10,310	4,200	-22,160	-24,860	-15,200	25,690	19,200	-10,500	-161,140	
Total Forage Surplus/Deficit	-37,800	-35,280	-39,060	-25,000	-10,310	4,200	-22,160	-24,860	-15,200	25,690	19,200	-10,500	-210,230	

# Develop a Grazing Plan

- 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!**

# **Use Managed Grazing**

- 
- 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**

- 
- This is Illinois Unused Treasure!
  - The Least Expensive Feed We Have for Ruminant Animals.....Even Better W/ Cover Crops

# Utilize Cash Crop Residues

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- 
- 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**



# 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 become a weed
  - Must be terminated – Easier to Kill than Rye or Barley – No rush to kill
  - Corn After Wheat Not Recommended

# Wheat

- 
- Wheat x Rye Cross – Resembles Parents
  - Benefits & Cautions of other cereal crops
  - Graze, Bale, Bag, Chop
  - Requires Termination Prior to Cash Crop

# **Triticale**

- 
- 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

- 
- Will Winter Kill but 10<sup>0</sup> Degrees Lower Temperature Than Spring Oats
  - May Get Two - three Weeks More Fall Growth
  - Other Characteristics are the Same as Spring Oats

# Fall 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

# Barley

- 
- 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

# Annual Ryegrass

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- 
- Crimson Clover
  - Berseem clover
  - Soybeans

# Summer or Winter Annual Legumes

- 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

# Crimson Clover

- 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

- 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

- 
- 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

- 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

- **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

- **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 4<sup>th</sup> grazing cycles susceptible to drought and aphids

# Brassica Hybrids



- 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

# Radish

- 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

- 
- Corn
  - Sudan; Sorghums; Sorghum x Sudan Hybrids
  - Pearl Millet; foxtail millet etc.

# Summer Annuals

- 
- 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

- 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

# 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

## **Hay; Haylage; Green-Chop**

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- 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

# **When Planning Cover Crops**

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- 
- Maintain Soil Fertility and pH
  - Plant Quality Seed
  - Establish a Good Stand
  - Inoculate Legumes (Specific & Fresh)
  - Plant Early
  - Terminate Late

# Maximize Biomass

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

*Seeding Method Affects Seeding Rate*

# Seeding Cover Crops

- Keep in Mind – **Forage Quality**
  - Mature vs. Vegetative Growth
- **Harvest Efficiency Affects Utilization**

Utilization    Stockpiled Forage or Annual Forage

80%

1 - Day Strip Graze

70%

3 – Day Strip Graze

60%

7 – Day Strip Graze

50%

14 – Day Strip Graze

30-40%

Set Stock

# When Grazing Annuals

- 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**

**1/2 is Wasted Due to Trampling and Treading**

**What Is Your Labor Worth?**

- 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 Reel

## **Conclude With A Few Quotes From: Jim Gerrish**



**435 ft**

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

# **Making Allocation Easy**



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