

10 Tips for Extending the Grazing Season

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Goals of Profitable Grazing Management

- Meet the nutritional needs of livestock from standing pasture as many days as possible
- Harvest forage from pastures with animals as efficiently as possible



10 Tips for Extending the Grazing Season

1. Proper Stocking Rate

Balance Livestock Numbers with Forage Supply

Stocking rate: The number of animals or animal liveweight assigned to a grazing unit on a seasonal basis.

Carrying capacity: The stocking rate that provides a target level of performance while maintaining the integrity of the resource base.

Carrying capacity of pasture is determined by four factors

$$\text{Carrying Capacity} = \frac{\text{Forage Production} \times \text{Seasonal Utilization Rate}}{\text{Daily Intake} \times \text{Length of the Grazing Season}}$$

Carrying capacity of pasture is determined by four factors

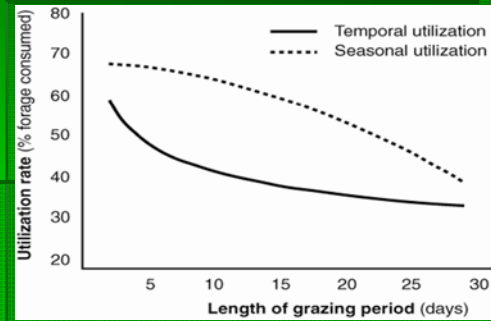
$$\text{Carrying Capacity} = \frac{8000 \times 160 \times .50}{1200 \times .03 \times 365}$$

Carrying Capacity = 48.7 cows for 365 days
55 cows = 320 days
59 cows = 300 days

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1. Proper Stocking Rate
2. Efficient Utilization of Forage Produced

Grazing Period Length Affects Utilization

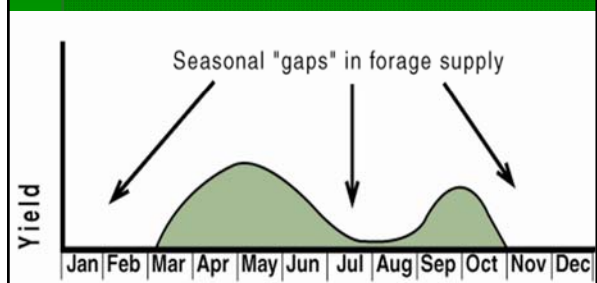


Grazing Efficiency

Total Season

# Pastures	Grazing Period	Utilization Rate
1 pasture	Continuous	30%
4 pasture	7-10 days	35%
8 pasture	3-5 days	50%
12 pasture	2-4 days	65%
24 pasture	1-2 days	70 + %

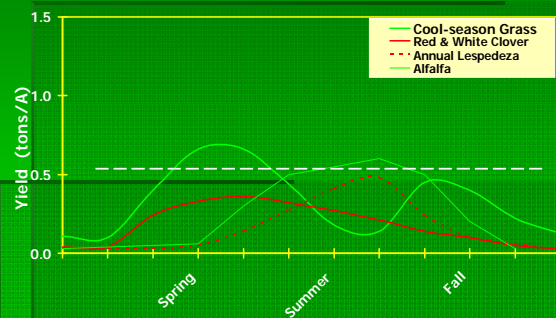
Typical Cool Season Growth Curve

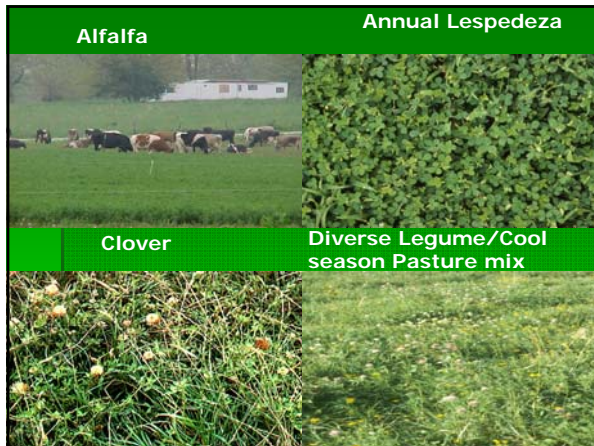


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1. Proper Stocking Rate
2. Efficient Utilization of Forage Produced
3. Use legumes

Adding Legumes



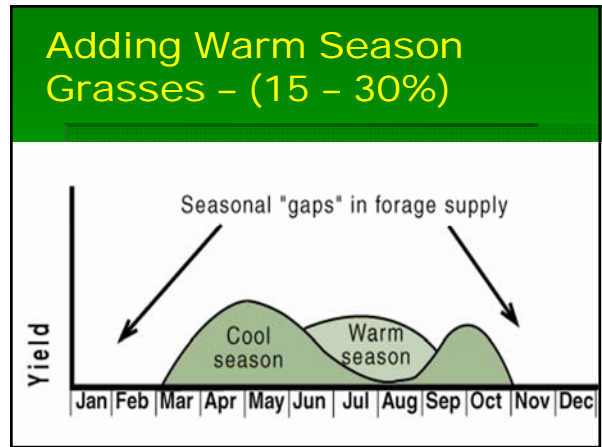


HIGHLY DIVERSE PASTURE

*Longer growing season
higher quality diet
resistant to stress
more total production
but...
you must have a
management system in
place capable of
maintaining this diversity*

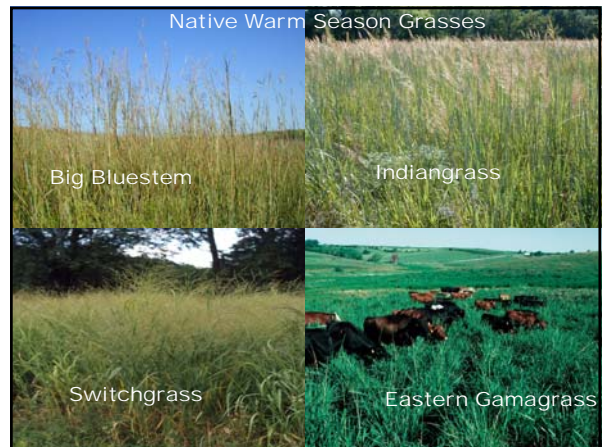
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4. Add Warm Season Grasses



Predominant Warm Season Grasses in the Midwest

- **Native WSG**
 - Big Bluestem
 - Indiangrass
 - Switchgrass
 - Eastern Gamagrass
 - Others
 - little bluestem
 - sideoats grama
 - dropseeds
- **Introduced WSG**
 - Bermudagrass
 - common types
 - Guymon,
 - Wrangler, Cheyenne
 - hybrids
 - Hardie, Tifton 44,
 - Midland, Midland 99,
 - Ozark, others
 - Old World Bluestems
 - Caucasian
 - Plains
 - WW Spar
 - King Ranch





Benefits of Warm Season Grasses?

- Good summer production
- Helps manage fescue endophyte problem
- Helps manage spring growth of cool seasons
- Favorable haying weather
- Adapted/persistent
- More efficient users of H₂O & N than cool season grasses
- Wildlife benefits (NWSG)
- Good quality and animal performance
- 38 % higher season long ADG when WSG included in summer grazing as compared to tall fescue full season

Warm Season Grass Quality Southern MO Data (1994-2000)

Species	Crude Protein	DOM
Big Bluestem	6.35 – 15.28	60.20 – 69.32
Indiangrass	6.83 – 14.61	56.24 – 67.70
Switchgrass	6.43 – 15.78	58.70 – 67.20
Eastern Gamagrass	5.73 – 16.31	58.87 – 68.74
Bermudagrass	9.25 – 15.28	62.44 – 75.29
Caucasian Bluestem	8.93 – 21.53	61.56 – 73.31

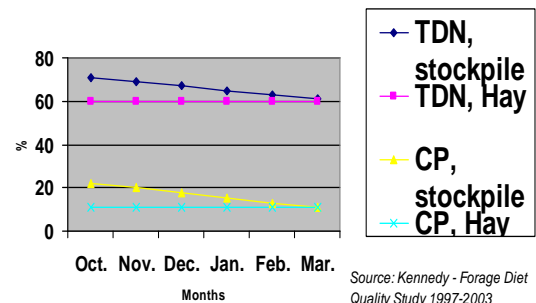
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4. Add Perennial Warm Season Grasses
5. Stockpile Tall Fescue

Stockpiled Fescue - competitive advantage

- Fall regrowth accumulates a high concentration of carbohydrates (high quality)
- Waxy layer on leaf makes it resistant to weathering
- Fall regrowth has lower levels of toxins from endophyte
- Ergovaline concentrations drop more rapidly than forage quality through the winter

Comparison of stockpiled tall fescue quality to average hay quality



Keys to Success

- Growing the stockpiled fescue
- Proper utilization of stockpile

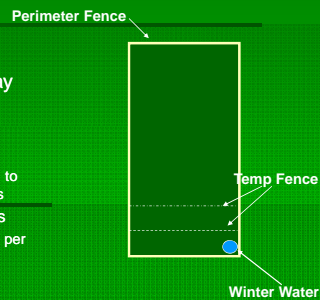


Stockpiling Recipe

- Start with fescue pastures that have 3 to 6 inches of leaf in mid to late August or 60 to 90 days prior to the end of the growing season.
- Apply 40 - 60 lbs. N
- Defer grazing until growth stops (late Nov to early Dec.) or until needed
- Utilize all other pastures in rotation for fall grazing until fully utilized and grass growth stops

Utilizing the stockpiled forage

- Treat as "hay on the stump"
- Allocate out in 1 to 3 day feed supplies by stripgrazing
 - improves utilization
 - From 35% for 2 weeks to 70%+ for 3 days or less
 - stretches forage supplies
 - 40% more grazing days per acre
 - helps maintain quality
 - Cows aren't damaging frozen plant tissue



Economics - average conditions

- 26# per cow per day
- \$70 per ton good grass hay
- \$.58 per pound for nitrogen @ 60#/ac=\$34.80/ac
- 60# should give 10" growth @ 300# per inch = 3000#/ac



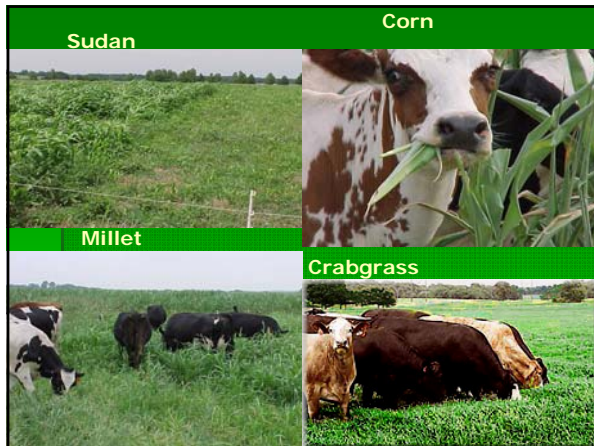
Seasonal Costs

- Haying: \$.91 - 1.09/day x 80 days = \$73 - \$87
 - Stockpile + Stripgraze: .43/day x 80 days = \$34.40
- \$38.60 – 52.60/cow savings/year**





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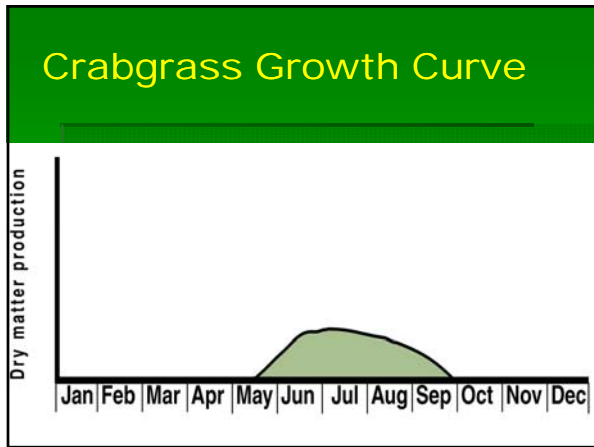
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5. Stockpile Tall Fescue
6. Use Warm Season Annuals



Crabgrass

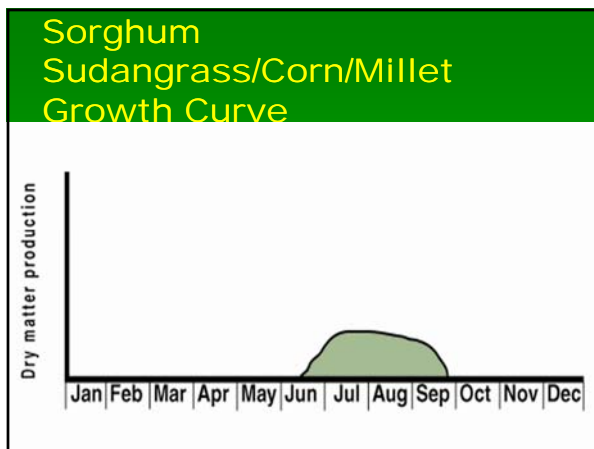
- Medium yield potential
- Good persistence if reseeding is managed properly
- Good tolerance to:
 - heat stress
 - poor drainage
 - poor soil fertility
- Fair tolerance to:
 - drought
- Forage quality good. Probably the easiest to manage for dairy quality feed.

Sorghum/Sudan, Corn, Millet

- Corn has the highest fertility requirement
- Sorghum/Sudan can cause nitrate and prussic acid poisoning under certain conditions (young, tender growth and after frost)
- Corn & Pearl Millet will not have prussic acid poisoning but can accumulate nitrates
- For best use all should be strip-grazed or at least rotationally grazed
- All can provide good growth and quality



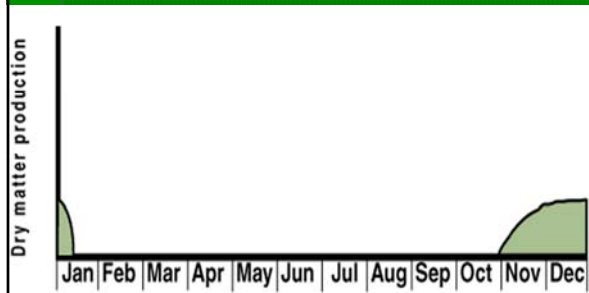
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7. Use Winter Annual Forages

Brassicas

- Turnips, rape, kale, swedes
- Excellent quality late fall – early winter
- Can produce up to 3 tons by Dec. 1 if planted in late August
- Don't hold up well past January 1

Brassicas' Growth Curve



Rape



Kale



Grazing Rape



Turnip



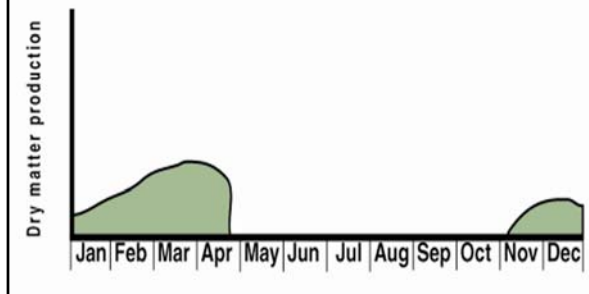
Cereal Rye/Wheat

- Will produce 1500 – 3000 lbs. of forage by Dec. 1 if planted by Sept. 1
- Annual yields of 6000-8000 lbs
- High Quality
 - 20% CP
 - 25 – 30% ADF
- Stays vegetative until mid to late March
- Rye is more winter hardy – actively growing down to 39°

Cereal Rye overseeded into Corn Stubble



Small Grains Growth Curve

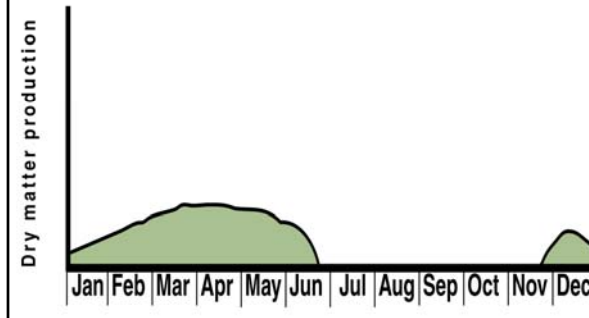


Annual Ryegrass

- High quality
 - 20 – 22% CP
 - <22% ADF
- Capable of producing 3000 – 5000 lbs. of forage within 90 days of planting
- Produces more spring growth than in fall growth
- Total seasonal yields of 10,000 lbs. in south MO



Annual Ryegrass Growth Curve



Ryegrass works well overseeded into warm season pastures such as bermudagrass



Or overseeded into existing thin stands of cool season grass

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8. Graze Crop Residues

Grazing Crop Residues

- Crop residues usually represent about half of the pre-harvest plant dry matter
- a field producing 120 bushel corn grain will contain 3 to 4 tons of roughage dry matter per acre.
- beef cattle will normally consume between 30 and 40% of the crop residue (1800 – 3200 lbs./ac.)
- average number of grazing days for crop residue is 65-111
- Livestock select the portions of crop residues with the highest digestibility and protein concentration first

Relative amounts and values of corn residue plant parts

Item	Plant Parts			
	Husk	Leaf	Stem/ ^a	Cob
Percent of residue dry matter	12	27	49	12
Crude Protein, % DM	3.6	7.8	4.5	2.2
In vitro dry matter disappearance, %	67	47	45	35
Palatability	High	High	Low	Low

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Wilson, G.B., G.E. Erickson, T.J. Klopfenstein, R.J. Radley, D.C. Adams, and I.G. Roth. 2004. A Review of Corn Stalks Grazing on Animal Performance and Crop Yield. University of Nebraska 2004 Beef Research Report.

Grazing Crop Residues

- strip grazing of crop residues enhances efficiency of utilization (resulting in more potential grazing days) and helps ensure maintenance of a high quality diet for the animals over a longer period of time by reducing selective



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8. Graze Crop Residues
9. Graze Dormant Alfalfa and other Hayfields

Graze Dormant Alfalfa and other Hayfields

- recommended to allow growth to accumulate in alfalfa pastures or hayfields for about 6 weeks before the first killing frost
- once cold weather has ensured dormancy, the accumulated growth can be grazed by livestock
- tends to reduce alfalfa weevil populations the following spring
- Summer or fall regrowth of other hayfields should be grazed utilizing strip-grazing

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9. Graze Dormant Alfalfa and other Hayfields
10. Graze Dormant Warm Season Grasses and Other Forage Crops

Graze Dormant WSG

- Studies in OK & AR show stockpiled bermudagrass protein levels above 10% if grazed by the end of December
- Missouri data has shown crude protein of dormant NWSG of 7 – 9% with TDN levels of 55 – 60%
- Some type of supplementation may be needed for some classes of livestock

Utilizing stockpiled fescue as a supplement to Dormant NWSG



Milo stockpiled for winter grazing



Daily and seasonal forage costs for alternative wintering strategies at typical yields, costs, and period of use

Winter feeding period - Dec 1 to April 10

Forage Source	Hay	Corn stalks	Stockpiled tall fescue	Ryegrass + cereal rye
\$/cow/day	\$1.32	\$0.05	\$0.31	\$0.61
Days of use	130 hay	60 stalks	90 graze	90 graze
		70 hay	40 hay	40 hay
Wintering cost	\$172	\$122	\$70	\$108

SOURCE: Jim Gerrish, University of Missouri.

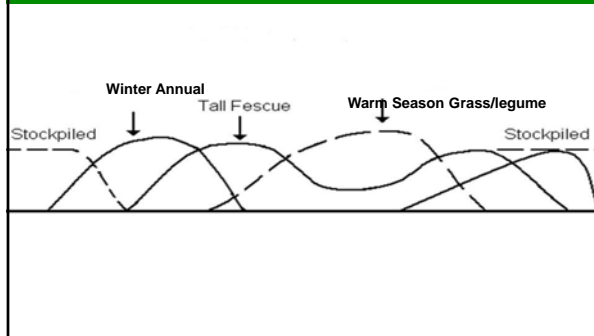
The Economics of Grazing Beef Cows

During Winter

G.J. Bishop-Hurley & R.L. Kallenbach

Forage	DMI (lb/day)	Cost (\$/cow)	Relative Cost
Tall Fescue Stockpile	23.28	67.44	100
Annual Ryegrass	15.70	45.90	68
Wheat	16.02	71.28	106
Rye	17.04	40.95	61
Turnip	16.15	34.19	51
Rape	15.67	51.57	76
Tall Fescue Hay ¹	28.12	87.72	130
Alfalfa Hay (fair)	23.39	129.72	192

Possible Forage System for a 365 Day Grazing Season



So...Is 365 Days of Grazing Possible?

- It Depends – possible with good planning, intensive management and favorable weather
- Variations in weather make it more difficult some years
- Might not always be the most cost effective

Extending grazing and reducing stored feed needs

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10th Heart of America Grazing Conference

January 25-26, 2011

Holiday Inn Hurstbourne
 Louisville, Kentucky

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