

# What's to Know About Grazing Systems

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**2010 MN Beef Cow/Calf Days**

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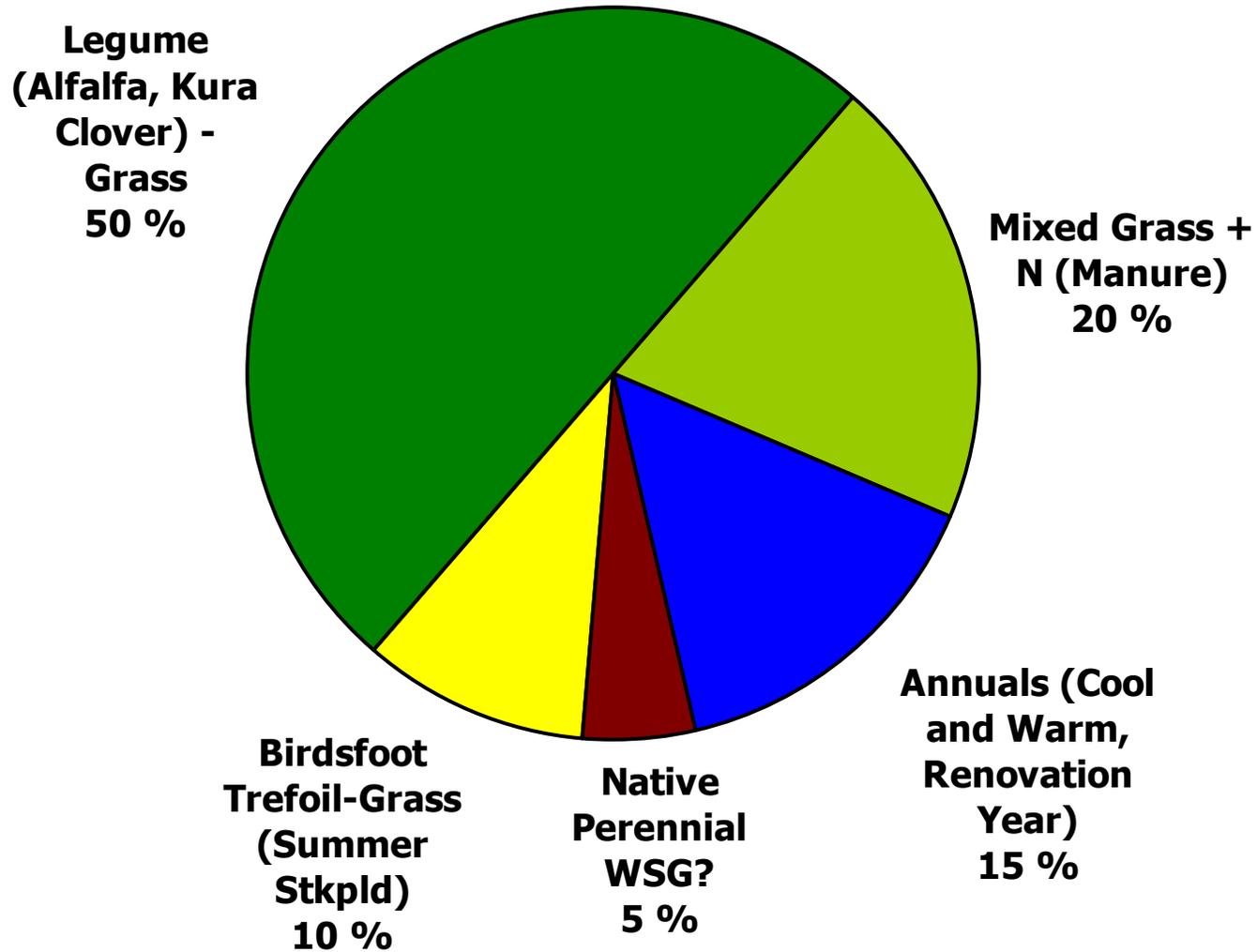
# FARM = Year-Round Forage System

- Well-managed pasture is at least 3X cheaper than home-grown/stored/fed hay!
- POTENTIAL = 7-8 months of pasture?
  - 4-5 months of conserved forage
  - Consider feeding hay a few weeks during summer to rest CS pastures and avoid lethal overgrazing
- Graze May 1 to Jan. 1? How?
  - Rotational grazing management
  - ‘SMORGASBORD’ of forages

# Seasonal Distribution of Pasture Yield, Density, & Quality

- Pasture subdivision for rotational stocking is essential (NRCS assistance)
  - Rest
  - Residual height control (4” minimum!)
- Soil fertility
  - Stocking density
  - Testing and amendments
  - Supplementation
  - Winter feeding location
- Plant diversity: within and among fields

# Pasture Smorgasbord CONCEPT



# CS Grasses: REST & RESIDUAL HEIGHT

- **SPRING** → summer → fall? growth curve
- Summer: **need 3X! the rest period**, so need 3X the pasture acreage (Voison's *Grass Productivity*)
- Tendency: as pasture forage supply diminishes, rest and residual shorten – **DETRIMENTAL to desirable species and yield!**
- ~1/3-1/2 of acreage: Spring hay/haylage → summer/fall graze/stockpile
- Add other forage species to the system

# Perennial CS Grasses: Drought

- Smooth bromegrass and quackgrass
  - Persistent, but poor/uneven production
- Kentucky bluegrass
  - Poor production
  - Symptom of over-grazing!
- Reed canarygrass is ‘king’
- Tall fescue (meadow fescue) and orchardgrass not bad

# Tall and Meadow Fescue



# Perennial Ryegrass in Ireland



# 1<sup>st</sup> Production-Year Perennial Ryegrass at St. Paul



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# Ryegrass and Festulolium Winter Injury at Grand Rapids, MN, Spring 2003



Legumes vs. N fertilization of smooth brome pastures rotationally grazed by dairy cows (Morris, MN, 3-yr avg.)

Pasture	N Applied	DM Yield	Cost of Forage Available	Cost of Forage Consumed
	<i>Lb/ac/yr</i>	<i>Ton DM/ac</i>	<i>\$/ton DM</i>	<i>\$/ton DM</i>
Smooth Brome	0	2.2	11.70	<b>37.00</b>
	50	3.1	10.10	<b>44.00</b>
	100	3.0	11.90	<b>44.50</b>
	200	3.5	12.50	<b>45.80</b>
	300	3.9	13.90	<b>56.80</b>
Alfalfa/Kura/ Brome	0	5.3	5.50	<b>18.30</b>

# Legumes: Drought Tolerance

- Alfalfa is the Queen
- Red clover OK
- White clover poor
- Birdsfoot trefoil: stockpile for summer
- Kura clover persists

# Alfalfa

- Most drought-tolerant cool-season legume
- Needs good soil and drainage
- Mix with (sod-forming) grasses, can use some N fertilizer
- Yellow-flowered types (Falcata, 'Spredor IV')
  - Greater persistence
  - Later maturing, more fall-dormant

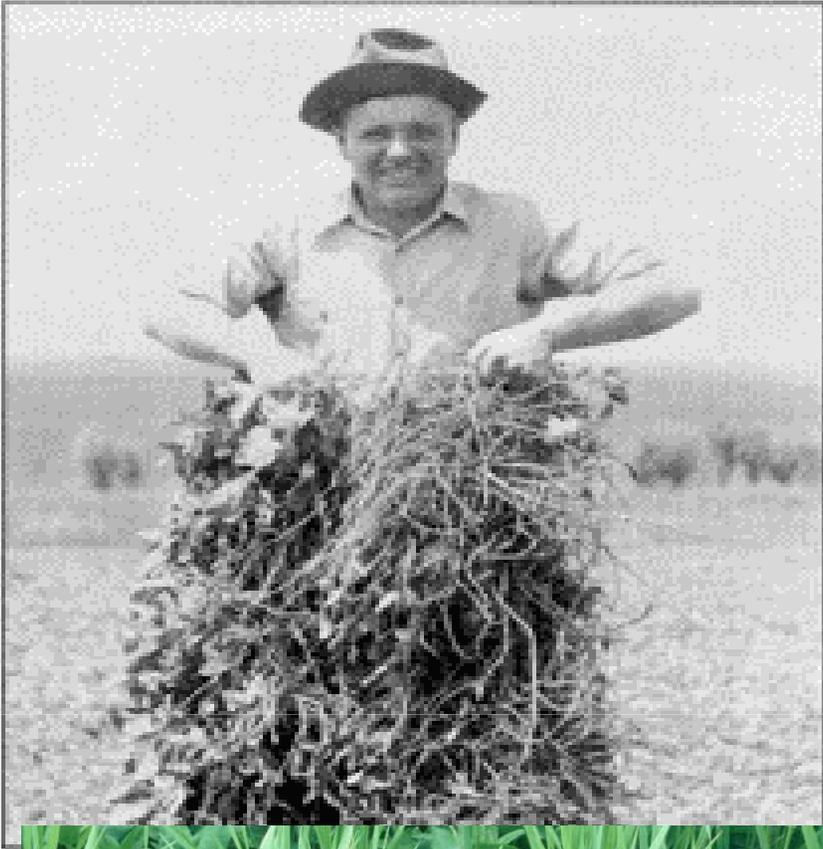
# Stockpiled BFT for summer

- Holds quality with maturation and reseeds
- Mix with non-competitive grass
  - Timothy
  - NWSG?
- Graze early, then stockpile late spring-early summer growth for mid-late summer grazing

# Why Kura Clover?

- Outstanding winter hardiness
- Broadly adapted
- Grazing tolerant
- High quality
- High animal performance
- Pasture sod base
- Haylage
- NCR-SARE grant





3-year-avg. Holstein steer performance on clover/grass pastures in southwestern WI (Albrecht, 2002)

<b>Clover- Grass Mixture</b>	<b>Grazing Days</b>	<b>Steer days/ac/yr</b>	<b>ADG (lb/day)</b>	<b>Gain (lb/ac/yr)</b>
<b>Kura clover- grass</b>	<b>169</b>	<b>345</b>	<b>2.65</b>	<b>916</b>
<b>Red clover- grass</b>	<b>169</b>	<b>313</b>	<b>2.26</b>	<b>712</b>

# Stockpiling Perennial Grasses for Fall

- Initiate with N in late July
- Tall fescue (meadow fescue?) and orchardgrass best
- Smooth brome OK
- Grass-legume mixtures, too (graze 1<sup>st</sup>)
- STRIP GRAZE to stretch...
- And/or annual ryegrass stockpiled or swath-grazed – NCROC results

# Small grains

- Nurse crop boosts seeding year yield
- August sowing for fall forage
  - WI work (Albrecht) – high quality!
  - Grazed, windrowed, or ensiled
- Early summer forage prior to summer seeding perennials

# Italian Ryegrass in Stearns Co., Aug. 2004



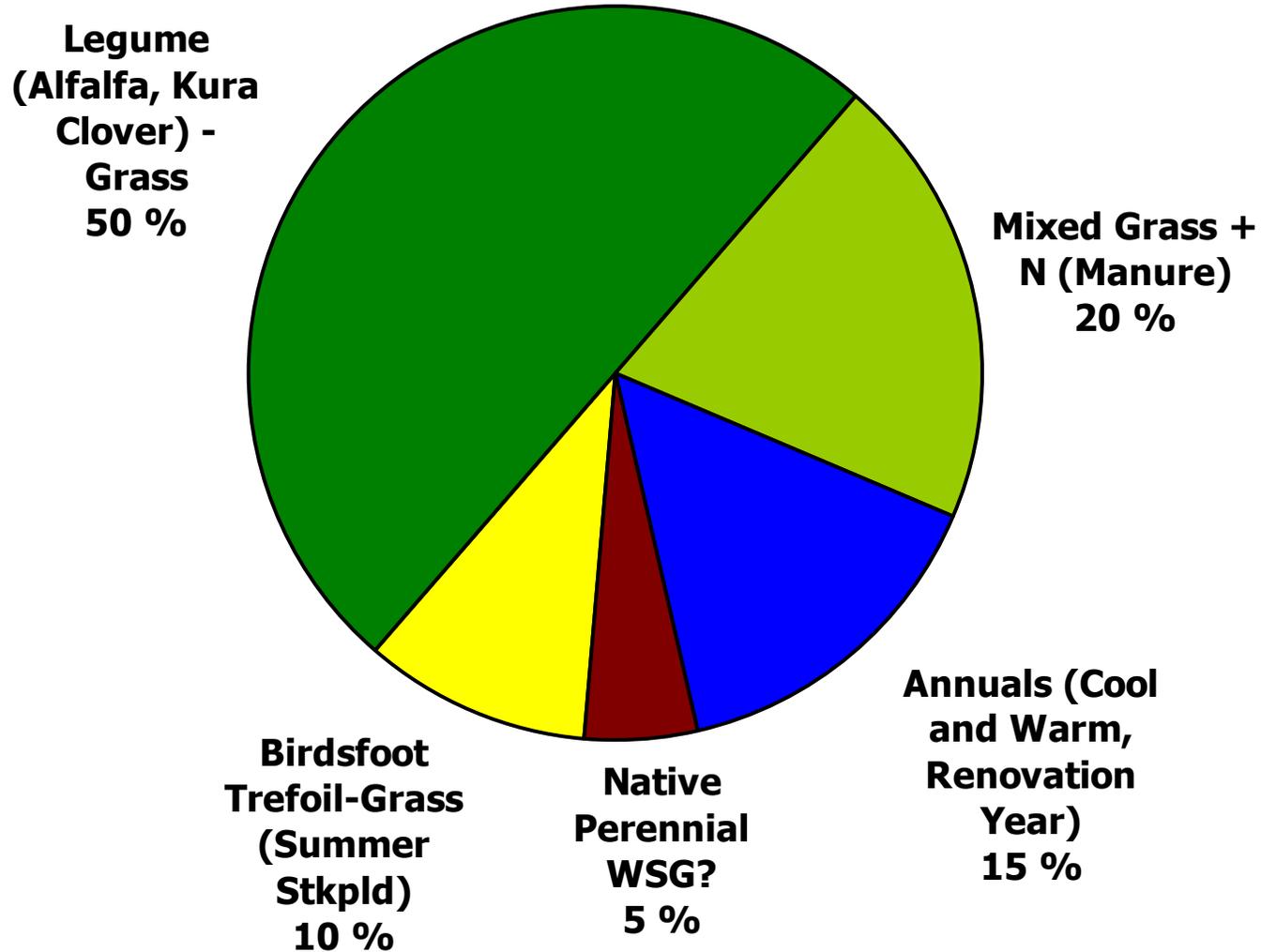
# WS Annual Grasses

- Need moisture to establish
- One-graze: Foxtail millets
- Multi-graze:
  - Sorghum-sudangrass (BMR)
  - Sudangrass
  - Pearl millet
- Corn
- Forage sorghum (BMR)

## Native Perennial Warm-Season Grasses

- E.g. Big bluestem, switchgrass, Indiangrass
- Its what was here
- Short production window, but critical period
- Forage quality greatly undervalued
  - Very digestible fiber & high-quality protein
- Graze or hay-then-graze
- Tall residual height is essential
- Mix with cool-seasons? SDSU research

# Pasture Smorgasbord CONCEPT



# Keys to Productive Pasture

- Grazing management
  - Variable REST
  - ‘NEVER’ overgraze
  - Rotational stocking – water and fence
- Pasture smorgasbord across farm
- Small-scale experimentation with species & mixtures on YOUR farm
- Stepwise renovation
  - Identify worst pasture(s) → winter feed → annuals  
→ re-establish perennials