

### Efficient Grazing Systems



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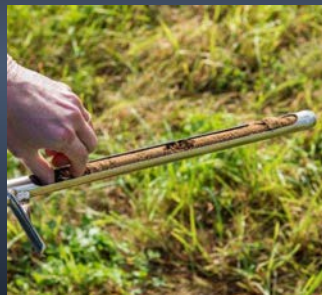
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### Knowing your soil resource *Soil Test*



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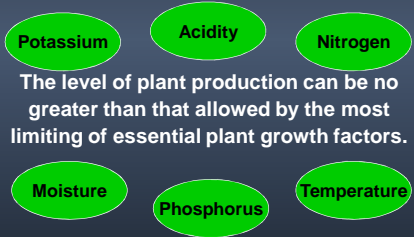
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### Liebig's Law of the Minimum



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### Nutrient Removal in Grazing Systems

**Inputs**

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- fertilizer
- manure/urine
- legumes (N)
- feed/hay

**Nutrient Cycle**

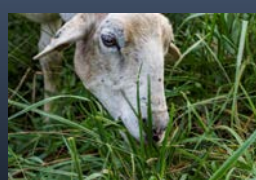



**Exports**

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- Lambs
- Kids
- Culls

**Nutrient removal in Pasture systems**  
Typically less than 10%  
**Of hay systems**






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### Nutrients Removed by Hay

Crop	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
----- lbs/ton -----			
<b>Alfalfa</b>	<b>56</b>	<b>15</b>	<b>60</b>
<b>Tall Fescue</b>	<b>39</b>	<b>19</b>	<b>53</b>
<b>Orchardgrass</b>	<b>50</b>	<b>17</b>	<b>62</b>
<b>Bermudagrass</b>	<b>43</b>	<b>10</b>	<b>48</b>
<b>Sorghum-Sudan</b>	<b>40</b>	<b>15</b>	<b>58</b>

Adapted from *Southern Forages, Fourth Edition.*



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### Powell County Potash Study

- Problem - Under fertilizing with potash (K) on a tall fescue hay field over several years led to:
  - Very low levels of soil K
  - Broomsedge encroachment

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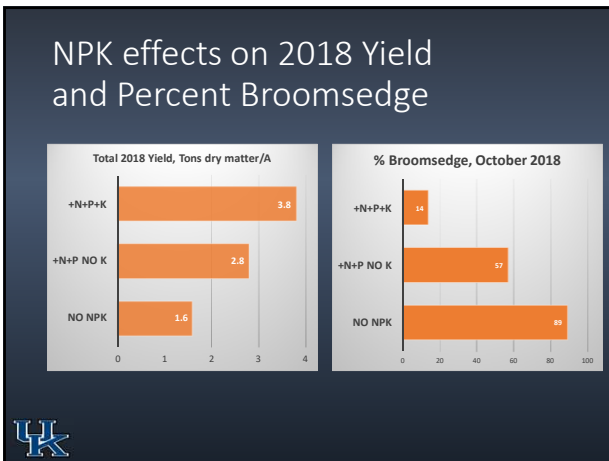
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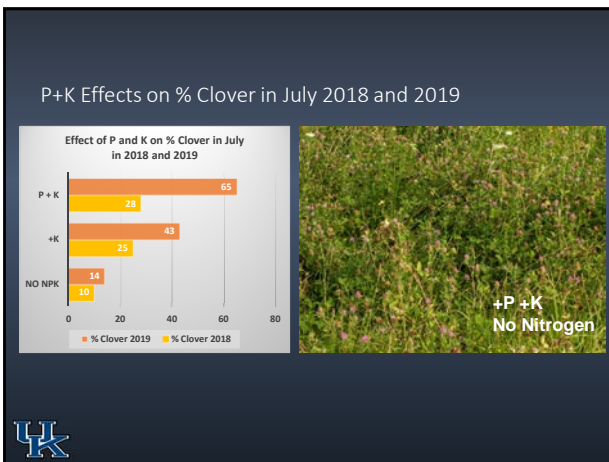
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Payback from rotational pasture systems

- Livestock eat more of what you grow
- Forages grow back faster/attain yield potential
- Greater persistence
  - Orchardgrass, alfalfa, new fescues
- Can **help** with parasite ingestion



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Pasture Management Goals

- Utilization
- Maximum regrowth
- Intake and Quality
- Persistence



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Few Grazing Terms

- **AUM = Animal Unit Month**
  - Amount of forage needed to support **1,000 lb** of grazing animal for 30 days (month) ~ **900 lb DM** or **90% of Body Wt/Mo**
- **Stocking Rate** = Number of animals per unit of land over a given period of time
  - Season long ~ Carrying Capacity
- **Stocking Density** = this is relationship of animals to land at the given moment on the given land base
  - Snapshot in time and uses only the land base livestock are on at that point in time
  - Ex. 500 pounds of livestock on 1/20<sup>th</sup> A = 10,000 lb / acre SD
    - ~ 40' X 50' per 5 100 lb goats



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### Water: The 800 foot rule



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### Benefits of Improved Grazing

- Utilization



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### Rotation, Rest and Utilization

Rotation	Reasonable Expectations for Utilization (%)
2x daily	70
Daily	65
3 to 5 days	50 to 60
Weekly	50
Month or longer	30 to 40
Never	30*

Shorter rotations	Less trampling, soiling
Stocking rate	Has a great effect



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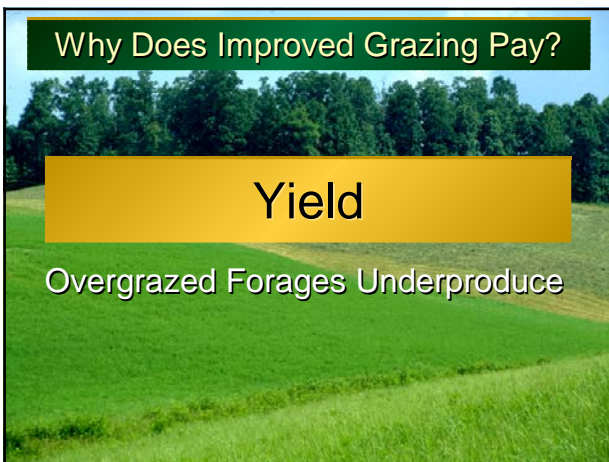
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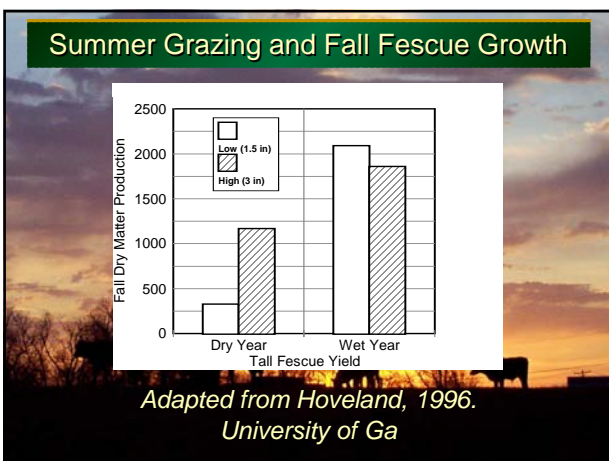
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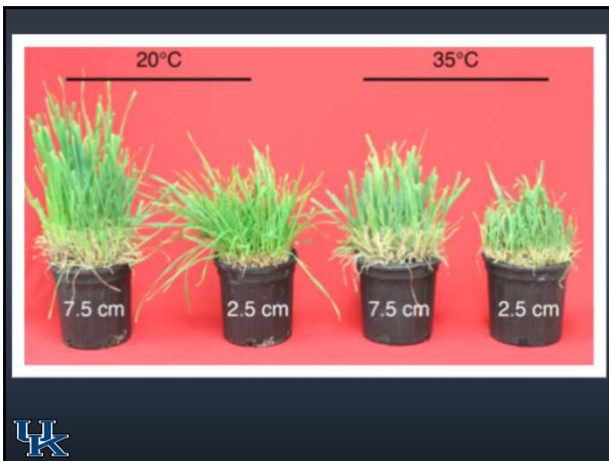
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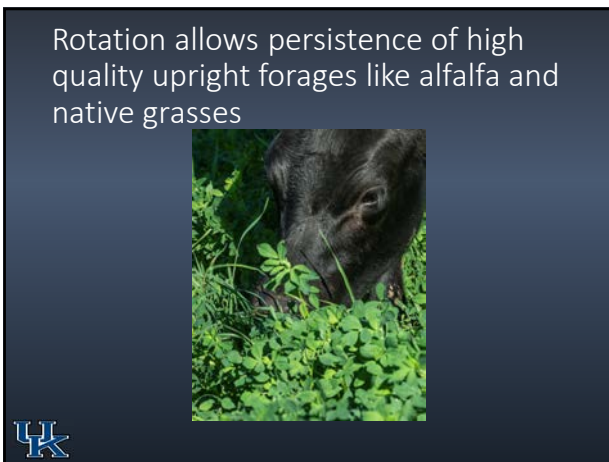
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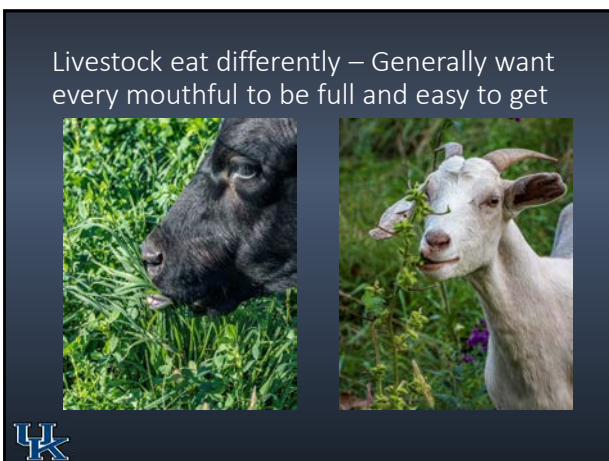
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Summer Annual  
spaced yield



UK

The slide features two photographs. The left photo shows a brown cow's head as it eats from a field of tall green corn plants. The right photo shows a white goat with small horns eating a green leafy plant. A blue 'UK' logo is in the bottom left corner.

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UK

The slide shows a photograph of two horses, one grey and one brown, grazing in a grassy field. A black wooden fence is visible in the background. A blue 'UK' logo is in the bottom left corner.

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Endophyte infected tall fescue  
and small ruminants

- Effects similar to large ruminants
  - Heat stress, intake, gain, breeding
- Much less is known about toxicity thresholds
  - Ergovaline
- Ergovaline content is seasonal, with great year to year variation

UK

The slide has a dark blue background with white text. It contains a title, a bulleted list of points, and a blue 'UK' logo in the bottom left corner.

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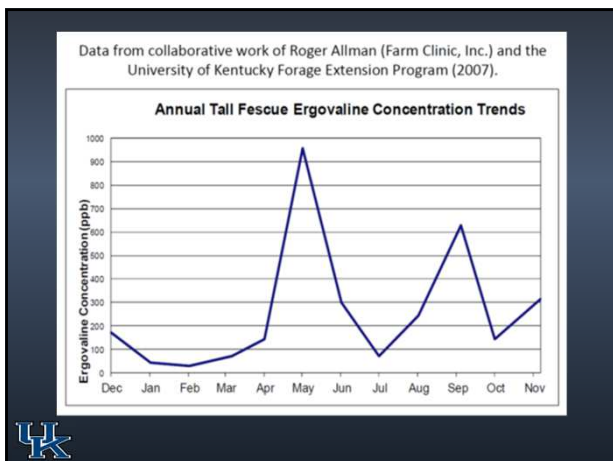
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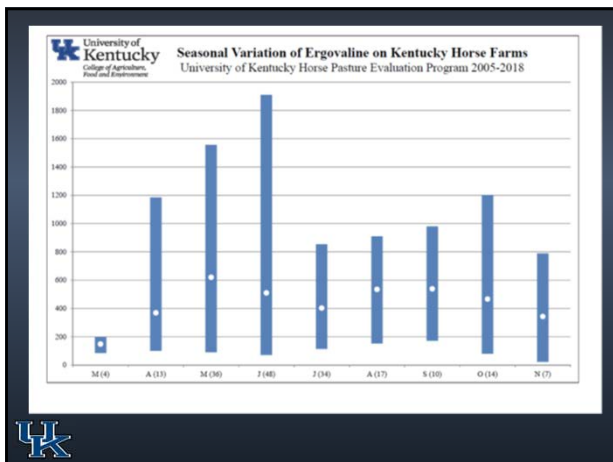
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**Keys to efficient pasture systems – Forage Management**

- Start with what you have
- Don't forget about soil fertility
- Manage residual height for maximum regrowth
  - Parasite management
- Payback comes from less waste and better forage growth

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