Grazing Considerations Following a Drought

Sarah Kenyon, Ph.D.
Field Specialist in Agronomy
417-256-2391
KenyonS@missouri.edu
Short-Term Drought Strategies

- Oats
- Turnips
- Annual Ryegrass
- Cereal Rye
- Triticale
- Winter Wheat
- Stockpiled Tall Fescue
Brassica Forage in Winter
• DM range – 1550-3000 lbs/a in <60 days
• CP – 18-33%
• TDN – 72-89%

– Source: John Jennings, University of Arkansas
Stockpiled Tall Fescue

Hay & Supplement Costs - $.80/cow/day
Stockpiled Fescue - $.42/cow/day
Long-Term Drought Strategies

- Overseed Legumes
- Establish Cool-Season Grasses
- Convert More Acres to Warm-Season Grasses
- Annual Ryegrass to Thicken Thin Tall Fescue
- Spring Oats
- Work on Fertility
How to Manage a Weak Forage Stand

1. Minimize Bare Ground
2. Do not overgraze
3. Prevent additional plant stress
4. Monitor regularly
How to Manage a Weak Forage Stand

1. Minimize Bare Ground
2. Do not overgraze
3. Prevent additional plant stress
4. Monitor regularly
Inventory Pasture Conditions

- Determine the health and density of existing pastures
- Determine if the existing stand needs to be thickened with interseeding or total renovation
Seeding Rates, Dates and Depths for Common Missouri Forages
Craig Roberts and James Gerrish
Department of Agronomy

The first step in forage management is the proper establishment of pasture and hay fields. This in turn depends on proper seeding. If the seeding rate is too low, the stand will be thin and weedy. If it is too high, establishment costs will be prohibitive. If the seeding rate is ideal, stands can still fail by planting at improper depths or times.

This guide presents rates, depths and dates for seeding common Missouri forages. The following tables contain annuals, perennials, and biennials, as well as grasses and legumes. This information is based on research and professional experience in Missouri and, when appropriate, from surrounding states.

Missouri forage operations. The dates are based on typical conditions for central Missouri. Therefore, for northern Missouri, early fall and late spring dates are advised. For southern Missouri, the opposite adjustments are suggested. The higher rates are appropriate for average to poor soils and for broadcast seeding.

Remember that these rates and dates are only guidelines; they apply to typical pasture and hay operations, not to extreme conditions. The rates do not include “shotgun mixtures,” because such mixtures are based on limited experience and data. They do, however, include rates for simple mixtures common to Missouri pastures and hayfields.

Seeding rates for the native warm-season grasses are based on the highest rate that can be achieved with adequate establishment.
Stand Analysis

• Evaluate desirable forage
  – Bare ground
  – Undesirable plants
Stand Analysis
• Tips for Establishing Cool Season Forages
  – Best to plant in the fall
    • “Plant in the fall or not at all”
  – Spring establishments usually fail due to weed competition
    • An early seeding date will have a better chance
Forage Establishment

• Tips for Establishing Warm Season Forages
  – Help to mitigate drought
  – Annuals and Perennials
Minimize Bare Ground

• Maintain or increase plant cover
  – Increase soil organic matter
  – Increase water infiltration
  – Prevent soil erosion
Standing forage and plant litter on the soil surface break the impact of rain drops on the soil and provide a physical barrier to runoff.
Plant litter and standing forage reduce evaporation losses by moderating extremes in soil surface temperatures and by protecting the soil against drying wind.
How to Manage a Weak Forage Stand

1. Minimize Bare Ground
2. Do not overgraze
3. Prevent additional plant stress
4. Monitor regularly
Overgrazing is removing too much of the canopy too often.
Do Not Overgraze

Grazing → 1st new leaf → 2nd new leaf → 3rd new leaf

Plant reserves

Grazing height

Time after grazing

www.agriseed.co.nz
• Overgrazing weakens the root structure as well as the forage availability
  – Can impact total forage production next year
Overgrazing and Drought

• During drought even moderate grazing can be stressful to the plant
• Overgrazing requires more resources for plant recovery, and does not allow for complete recovery – intensifying the stress
• Sacrificing a paddock will allow other pastures to rest
• Fertility levels will increase from additional organic matter
• Plants may need a slightly longer rest period to recover completely following a drought
  – Forage quality still needs to be considered, do not rest long enough to compromise quality
  – May require lower stocking rates
How to Manage a Weak Forage Stand

1. Minimize Bare Ground
2. Do not overgraze
3. Prevent additional plant stress
4. Monitor regularly
Sources of Additional Plant Stress

- Insects
- Weeds
- Nutrient Deficiencies
Drought results in a weak root system and fewer tiller buds.

This reduces the density of the forage stand, providing safe places for weeds to germinate.
Weed species may equal or exceed palatable forage species the first year after recovery.

Poisonous weeds may be more common during this phase of recovery.
Nutrients combine with carbohydrates from photosynthesis to form structures and preform plant functions.
• To produce 1 ton of forage
  – 40 – 50 lbs of Nitrogen
  – 10-15 lbs $\text{P}_2\text{O}_5$
  – 40-50 lbs $\text{K}_2\text{O}$
• Conduct a soil test
  – Determine the amount needed
  – Prevents over and under application
Fertilizing on a Budget

- Conduct a soil test
- Lime First
- Target very low and low testing soils
- Keep up with hay nutrient removal
- Increase dependence on legumes
- Manure can be an excellent fertilizer
How to Manage a Weak Forage Stand

1. Minimize Bare Ground
2. Do not overgraze
3. Prevent additional plant stress
4. Monitor regularly
Monitor Pastures

- Monitor forage before, during and after the grazing event
  - Determines forage availability for livestock
  - Identifies which paddocks to graze, rest, and cut for hay
  - Helps to prevent overgrazing
  - Helps to identify weak pasture stands
Pasture Records

- Records help place value on improvements
- Help with decision making
- Identifies strengths and weaknesses
- Most valuable use of time
Pasture production is our business!
Therefore, the health of the pastures is the most important aspect of ranching.
Questions?