

Rebuilding the Forage Base Following a Drought

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The summer of 2012 was exceptional in Missouri. Records show that the May-July period ranked the 3rd warmest on record and the hottest since 1936. The period also ranked the 3rd driest on record and the driest since 1936 also. These conditions have resulted in short forage inventories, weakened stands, thin pastures and the concern for weeds in these thin stands next year.

Drought effect is a function of the intensity and duration of the drought and the health and vigor of the stand prior to the drought. Plants with a healthy root system and good carbohydrate reserve fared the best. This can be traced to soil type, fertility levels and the intensity of grazing or haying pressure.

Producers can use stand loss from the drought as an opportunity to improve their forages. This could include:

- Thicken up a stand with desirable forages
- Include more legumes in pastures
- Convert about 10-25% of acres to a warm-season grass
- Develop a simple rotational grazing program
- Purchase (or keep) a reserve supply of feed when prices are favorable

Short-Term Solutions – Options for emergency forages in the late summer/early fall include turnips, cereal rye, oats, triticale, wheat and annual ryegrass. On good fescue stands, applying nitrogen in August and stockpiling the grass is the most affordable option. Be aware that interseeding forages into stands with low fertility can be disastrous. Low fertility could be the reason fescue stands failed in the first place.

- **Oats** – Quickest out of the ground; Fall growth only, then will die out in winter; Usually good tonnage produced; Poor tolerance to overgrazing; Slower regrowth than other cereals.
- **Cereal Rye** – Excellent fall tonnage and quality; Heads out early in the spring and quality is compromised; Quick establishment; Good regrowth potential after grazing
- **Triticale** – Genetic cross between cereal rye and wheat; A good compromise between rye and wheat regarding tonnage and quality; Does not regrow after a grazing as well as rye.
- **Wheat** – Little fall growth; Higher quality forage compared to rye and triticale. Good option for early spring hay or haylage; Slow regrowth
- **Turnips** – Grazing can often begin in 70-80 days. Will die out as the winter sets in.
- **Stockpiled Fescue** – Apply nitrogen in August and stay off the pasture until November or December. This does not produce short-term forage as well but is the most cost-effective practice for winter feeding. Strip-grazing will best ration the forage.

Long-Term Solutions

Some longer-term solutions to stand loss and how to prevent the problem again include:

- Overseed clover (fall or early spring) or lespedeza (spring only)
- Thicken up the thin stands of fescue (cool season grasses)

- Convert to a warm season grass next year
- Insure fertility is up to par
- Controlled grazing – Stripgrazing improves utilization of forages
- Incorporate annual ryegrass into thin fescue stands.

Annual Ryegrass

- **Ryegrass is very invasive. Do not use near fields intended for wheat for grain, fescue seed production or commercial hay where ryegrass is not desired.**
- Do not use in fields containing bermudagrass or intended for crabgrass stands.
- Easy to establish and provides rapid fall growth. It remains vegetative into the month of May, later than the cereals.
- Tends to reseed and come back next year if allowed.
- Grazing can often begin 60 days after planting
- Best utilization requires rotational grazing
- Graze no shorter than 3”
- Missouri study – 88 days grazing; ADG 2.0; Total Gain 404 lb/a.
- Plant a winter hardy cultivar in late-August at 25-30 lb/a. Apply 40 lb/a N then an additional 40-60 lbs N in late February.
- Begin grazing at 8-10”; Leave a 3-4” stubble.
- Remove livestock in mid-May if reseeding is desired.
- Compliments poor fescue stands better than cereal crops.
- Diploid - Most common; May be more winter-hardy than tetraploids
- Tetraploid - Wider leaves, more robust
- Italian - Requires chilling to seed
- Westervold - Does not require chilling to seed
- Varieties – Marshall (Westervold Diploid), DH3 (Italian Tetraploid), Passerel (Tetraploid), Abundant (Tetraploid), others

In the spring there is an opportunity to get spring oats planted. Here are some facts regarding spring oats:

- Spring oats are typically 10 days – 2 weeks later in maturity than winter wheat.
- Quality is comparable to wheat
- Tonnage is about 2/3 of wheat
 - Seed 2.5-3 bu/ac for a solid stand - Cost \$14-23/acre
- Drill February - early March
- Producers often have trouble getting adequate growth when no-tilled into an existing cool season sod

Legume Establishment - Adding clover or lespedeza into pastures is one of the simplest approaches to thickening up a stand. A 25-30% legume component would be the goal for most producers. Clover requires a higher degree of fertility to maintain it than lespedeza. Lespedeza tolerates a low pH and drought better and provides most of its growth after late June. It doesn't fix as much nitrogen as clover. Adding clover offsets the need for nitrogen topdressing.

Cool Season Grass Establishment -

- Fall is the Best time

- True beginning of the CSG growing season
- Roots get well established before the dry summer
- Drill late August – early September (under normal conditions)
- Spring is second-best time
 - 5-6 months behind fall seedings; Dry season ahead; Weed competition is great
 - Drill February - early March; Avoid tillage
 - Can sow with spring oats

General Weed Control for Next Summer

- 2,4-D - *Ragweed, Thistles, Plaintain, Croton, Perilla Mint, Spiny Pigweed*
- Grazon P+D/Hired Hand/Gunslinger - *Ragweed, Thistles, Horsenettle, Knapweed, Poison Hemlock, Perilla Mint, Spiny Pigweed*
- Remedy Ultra/Relegate/Clear Pasture - - *S. Lespedeza, Ironweed, Blackberries*
- GrazonNext HL - *Ragweed, Thistles, Horsenettle, Mullein, Dock, Chickory, Nightshade, Locust, Croton, Knapweed, Wild Carrot, Plaintain*

Use Caution Before or After Establishment

- Before Establishment – Beware of pasture herbicide residual
 - Burndown herbicide options – Glyphosate, Gramoxone, 2,4-D
 - Residual of Grazon, Grazonnext HL, 2,4-D can kill new stands of grass and legumes
- After Establishment – Grasses should be well tillered and established before using common pasture herbicides

Table 1. Cost estimates of forage and hay for fall feeding of cattle based on August, 2012 prices.

Feed Source	Cost Per lb. D.M. \$	Cost Per lb. TDN \$	Cost Per Cow Per Day ¹ \$	Assumptions ²
Fescue Hay	0.075	0.160	2.24	48% TDN 15% feeding loss
Stockpiled Fescue	0.027	0.042	0.70	65% TDN 3000 lb D.M./Ac produced 60% utilization
Cereal Rye	0.040	0.062	1.04	65% TDN 3000 lb D.M./Ac produced 60% utilization 75 lbs of seed @ \$0.32/lb.
Turnips	0.019	0.027	0.49	70% TDN 6000 lb D.M./Ac produced 50% utilization 3 lbs of seed @ \$3/lb.

1. Based on cost per pound of dry matter

2. General Assumptions: 26 lbs D.M. needed per cow per day; Nitrogen fertilizer at \$0.80 per lb.; 60 lbs nitrogen applied on each forage option. Does not factor in land costs

Table 2. Recommended seeding rates and estimated costs of establishment based on August, 2012 prices.

Forage	Solid Stand Rates No-till Drilled Lbs/Acre (PLS)	Typical Cost / Acre for Interseeding \$	Lbs Per Bushel
Fescue / Orchardgrass	15	14.40	-
Annual Ryegrass	25-30	16.25-19.50	24
Cereal Rye	75-120	24.00-38.40	56
Triticale	75-120	27.00-43.20	-
Oats	60-100	20.40-34.00	32
Wheat	75-120	20.25-32.40	60
Turnips	2-4	5.90-11.80	-
<ul style="list-style-type: none"> • Cereal crops can be sowed ½-1 inch depths. • Fescue and annual ryegrass can be mixed in weak stands of fescue to both enhance the fescue stand and introduce ryegrass. • If mixing ryegrass with cereal crops, cut the ryegrass rate to 15-20 lbs and the cereal crop to 60 lbs. If oats are used drop the rate to 50 lbs. • Use the high end of the rates if drilling into a stand with no competition (clean tilled, killed sod or a dormant warm season grass stand). Use the low end of the rates if there is still some competition (cool season grasses) but the stand is weak. 			

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