

# Pasture Renovation Tips

Tim Schnakenberg, University of Missouri Extension Field Specialist in Agronomy, Galena, MO  
417-357-6812                      schnakenbergc@missouri.edu

Fall is the best time to address stand issues in pastures. Evaluate pastures based on the density of desired forage and the volume of weeds in the field. In about July or August, watch for grassy weeds and forages that may not be as productive as the forages you desire. These could include goosegrass, foxtail, purpletop, panicgrass, nimblewill, broomsedge or even Kentucky bluegrass. The first impulse is blame the weeds for taking over and start spraying. There may be bigger issues such as grazing management or fertility that should also be addressed.

## Cool Season Grass Establishment

- Soil test. Make sure fertility is up to par. Low phosphorus will hurt root development.
- Fall is the best time
  - True beginning of the cool season grass growing season
  - Roots get well established before the dry summer
  - Drill late August – early September (under normal conditions). Try to be done for sure by October 15. The lack of soil moisture or expectation of a continued drought may require a delay.
- 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
- No-till drilling is probably the most reliable choice for establishment
  - Conserves moisture; Enhances seed-soil contact; Sod holds weeds back; Minimizes rock disturbance; Less cost and erosion than conventional tillage.
  - Keeping a consistent depth with a drill is challenging.
  - Most drills have at least two hopper boxes for planting seed of varying size. Remember that seeding depth will be the same for both seed types. Legume box tubes are sometimes removed to address this issue.
  - Be sure to inspect all tubes before using and blow them out if necessary.
- Below are a few options and tips for establishment with no-till that could be used. Nitrogen used prior to planting should be minimal to prevent weed issues.
  - There is some risk planting into very dry soil. A ¼” of rain and nothing to follow for weeks later can be disastrous. On the other hand, waiting too long to plant for a rain to come could result in less of a chance to get roots developed before winter.
  - Complete burndown using up to 2 qt/a glyphosate (41%) 4-14 days before planting → No-till drill into sod. Glyphosate will take at least 2 weeks for a full burndown. The key is to dry it down enough to get the drill to cut through the sod.
  - Complete burndown using Gramoxone within 4 days of planting → No-till drill into sod. Gramoxone will only kill topgrowth and young weeds. It will usually

not kill established grass like fescue or perennial weeds. It will result in a fast burndown.

- Overgraze or hay the area → no-till drill into sod. Expect more competition to plague the new seedlings compared to a burndown. If green crabgrass or goosegrass is heavily present, it may pay to plant later (late Sept – early Oct) when these will be deteriorating in cooler weather and ultimately killed by a frost.
- Flash grazing late in the fall is sometimes an option but be careful!
- Hold off on high rates of nitrogen until the stand is well established.
- If undesirable perennial grasses are dominating stands (Kentucky bluestem, purpletop, broomsedge, panicgrass, nimblewill), it will almost be imperative to do a complete burndown to fully get ahead of these species with a new desirable perennial grass stand.
- Most small seeded grasses and legumes should be planted at 1/8-1/4” depths. Cereal grains should be planted about 3/4-1.5” deep. Turnips should be planted at 1/4-1/2” depths. Deeper planting may be necessary with limited moisture.
- Alternative seeding would include broadcasting and rolling or light disking followed by broadcasting and rolling. Increase seeding rates because only a certain percentage of the seed will make it.

**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. Drilling cereal crops or turnips into good fescue stands is not recommended.

- **Fall Oats** – Quickest out of the ground and should be planted in August preferred; Fall growth only, then will die out in winter; Usually good tonnage and excellent tonnage produced; Poor tolerance to overgrazing; Slower regrowth than other cereals. Oats can also be planted in the late winter/early spring for quick spring forage.
- **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** – Best to sow in August without competition. Not recommended for late establishment in the fall. Grazing can often begin in 70-80 days. Will die out as the winter sets in. Strip-grazing is the best way to utilize this forage. Can also be sowed in the spring. Heavy grazing can lead to erosion issues on hillsides. Works well to sow a cereal crop or ryegrass with it.
- **Stockpiled Fescue** – Apply nitrogen in August-early September and stay off the pasture until about 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.

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
- Drill February - early March
- Producers often have trouble getting adequate growth when no-tilled into an existing cool season sod

**Long-Term Solutions** - Bringing pastures back with permanent forages is the more economical way to provide at least 300 days of grazing each year. Trying to provide early winter grazing with something like rye at the same time as getting permanent grass established in the same is extremely challenging so producers should decide which is needed the most. A cover crop using wheat is sometimes used. If so, keep the seeding rate of the cereal crop no higher than 25-30 pounds per acre.

Here are cool season grass forage options for pastures in Southwest Missouri

- **Kentucky 31 Fescue** – Most pastures already have K31 fescue as the base forage. In many cases thin stands need thickened with additional grass. A long-term plan should be developed for dealing with the endophyte.
- **Novel Endophyte Fescue** – A better option than K31. These varieties contain a nontoxic endophyte that will also insure persistence better than endophyte-free varieties. Only recommended if there has been at least a year of a preceding crop other than K31 fescue. A spray-smoother-spray approach ahead of establishment is highly recommended.
- **Orchardgrass** – Best use as a supplement to fescue in pastures with controlled grazing. Can help to dilute endophyte but will not stockpile well. During renovation, could mix in a 50:50 or 25:75 orchardgrass and fescue mix when established together.
- **Annual Ryegrass** – Provides excellent winter feed and will last later in the spring than rye, triticale or wheat. A weakness with ryegrass is that it will provide little if any midlate summer grazing, leaving gaps in the stand. It should be allowed to go to seed early summer if you want it to continue. Ryegrass is very invasive and can overtake fescue in some cases. Do not use near fields intended for wheat for grain, fescue seed production or commercial hay where ryegrass is not desired. Also, some herbicides such as Grazon or GrazonNext that have long residual periods should be avoided in ryegrass fields.

**Legume Establishment** - It is highly recommended not to establish clover at the time of grass establishment since it can become very competitive the first year. It would be best to wait and no-till drill clover the following fall into the stand or frost seed it the following winter. The grass is needed as the base forage and should be given priority. If the grass is in good shape, just 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 can be drilled in early September or frost seeded (December – February) and requires a higher degree of

fertility to maintain it than lespedeza. Lespedeza can be frost seeded (December – February) or drilled in April or May and 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.

**Use Caution Before or After Establishment**

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

Table 1. Recommended seeding rates

Forage	Renovation (lbs PLS / Ac)	
	Solid Stand Rates No-till Drilled	Interseeding into Thin Grass Pastures
Fescue	15	6-12
Ann. Ryegrass	25	10-15
Spring Oats	64-80	40-50
Rye or Wheat	110-130	30-60
Turnips	2-4	1.5-2
White Clover	1.5-2	1
Lespedeza	15	6-8