

"Spray-Smother-Spray"

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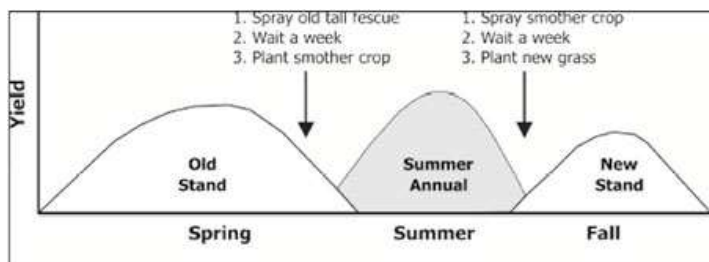


Figure 1. Recipe for Spray-Smother-Spray, a method to replace toxic tall fescue pasture.

Pastures of tall fescue in Missouri are infected with a fungus known as the "endophyte." The tall fescue endophyte causes fescue toxicosis, a serious disorder that costs the Missouri beef industry \$160 million each year and is harmful to dairy cattle, horses and sheep. Fescue toxicosis is characterized by poor health and production, including low rate of gain, poor milk production, and poor reproduction.

While many producers manage tall fescue to minimize the effects of toxicosis, the development of novel tall fescue lines that offer persistence, yield and excellent quality offers producers an opportunity to replace toxic K31 with "novel endophyte" fescue to improve gains and calving. It is time to begin thinking of killing off the old tall fescue. Toxic K31 fescue stand can be killed with a high rate of glyphosate, which is sold under a variety of trade names (most commonly known as Roundup), but at least two separate application timings are required. That is because a single spray may not kill all the individual plants. Many plants are covered by dung piles; these plants avoid herbicide contact and often emerge later in the year. Also, a single spray does not kill the tall fescue seed present in the soil. This seed, still infected with the endophyte, can germinate and provide toxic seedlings long after the field is sprayed.

For these reasons, Missouri Extension recommends replacing toxic tall fescue with a technique known as "spray-smother-spray." There are other techniques being explored in other states, but the spray-smother-spray recipe is a proven method in Missouri. The entire procedure can be done in four months and will provide excellent summer pasture in the process. It calls for spraying glyphosate in the spring, no-tilling a smother crop in the summer, and establishing the new grass in the fall. (See Figure 1.)

The initial spray is in late April to early May, or about 1 to 2 weeks before a summer annual crop would be planted. Glyphosate should be applied at a rate of at least 2 lbs per acre, or 2 quarts per acre of a 4 lb/gallon glyphosate formulation. Spray coverage is essential, so be sure to apply a minimum of 15 gallons of solution per acre. The smother crop is planted and it is usually pearl millet, sudangrass, or crabgrass. The smother crop is grazed all summer and sprayed with a second application of glyphosate in late August—between August 15 and August 21 or 1 to 2 weeks before the new cool-season grass is planted.

To maximize establishment success, plant novel endophyte fescue in the fall (September). AVOID planting into existing vegetation and DO NOT blend with a legume due to competition issues. The novel endophyte varieties available from Pennington, Barenbrug, DLF, and Mountain View are infected with new endophyte that provides the positive qualities without the negative.

University of Missouri renovation economics for return include conversion costs of preparation, planting, and idle land, and annual benefits in cattle performance (calf weights and reproduction). Three stocking rate scenarios break this down for a spray-summer smother-spray program:

	3 Acres per Cow	4 Acres per Cow	5 Acres per Cow
Conversion Costs	\$725.67	\$967.56	\$1209.45
Annual Benefits	\$229.63	\$229.63	\$229.63
Payback in Years	3.2	4.2	5.3
Internal Rate of Return	28%	19%	12%