

Rough-stalk bluegrass: a weed in legume-grass forages in Michigan

Michigan State University

AgBioResearch

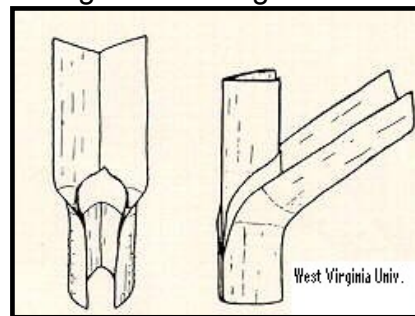
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Michigan forage producers and MSU Extension Educators have been increasingly concerned about an invasive grass called rough-stalk (or rough) bluegrass or rough meadow grass (*Poa trivialis* L.). Initially identified in forage fields in the Thumb region, it is a common weed species in golf courses, athletic turf, and lawns; and a major problem for grass seed producers in the western United States. In Kentucky bluegrass (*Poa pratensis* L.) seed production fields, it is very difficult to control due to similarities in growth habit and seed production. The seed is difficult to separate from other desirable grass species, such as timothy (*Phleum pratense* L.), due to similar weight and size. Rough-stalk bluegrass tolerates frequent, close harvests and is shade tolerant. It is over-seeded in warm-season turf grass, such

as Bermuda grass, in the southern United States to maintain a green cover in the fall when the warm-season grass goes dormant.

DESCRIPTION/ BIOLOGY

Rough-stalk bluegrass is a sod-forming



perennial species that spreads by seed that will germinate in spring and fall

and by creeping stolons that grow in rich, wet soil conditions more commonly found in forage seeded areas. Dormant rough-stalk bluegrass, which may be found in

patches, takes on a copper color in high temperatures and dry periods, commonly occurring in early summer.

Leaves folded in the bud-shoot and the sheath is compressed and sharply keeled. There are no auricles and the collar is broad, hairless and divided at the midrib. A membranous ligule is present, approximately 1/8 of an inch long. Leaf blades are 1/8 to 1/4 inch wide, and 3 to 6 inches long, flat, tapering from the base to the tip which is narrowly boat-shaped and the lower surface is glossy and keeled.



The seed heads are flattened spikelets with 2 to 3 flowers, panicles are 3 to 5 inches long. This grass resembles a few other species of bluegrass, but may be distinguished by its rough compressed sheath and the glossy under-surface of the blade.

THE PROBLEM

Hay producers will not want this species in their fields because the grass matures earlier and is lower in forage quality than conventional forage species (alfalfa, timothy, brome, etc.). The stems of rough-stalk bluegrass become very lignified by early June resulting in low digestibility of the crop. A sample taken from a bale from an infested legume/grass field harvested in mid-June had neutral detergent fiber content of 64% and crude protein of 5% (wheat straw typically has a neutral detergent fiber content of 70% and crude protein of 4%).

The shade tolerant nature of rough-stalk bluegrass allows it to survive and spread in a mixture of alfalfa and grass. Alfalfa grass stands weakened by biological, climatic, or management factors which contain roughstalk bluegrass may allow this weed to increase. Frequent harvests or grazing will not eliminate this weed and could actually weaken the desirable alfalfa grass species.

MSU TRIALS

Trials have been conducted by MSU on-farm to evaluate herbicides for control of rough-stalk

Table 1. Herbicide treatment, rate, and visual ratings of percent control of rough-stalk (RSB) and remaining stand of alfalfa and timothy 30 days after treatment applied in early April.

Treatments	Rate Dormant - April	% Control of RSB Dormant - April	% Stand Dormant - April	
			Alfalfa	Timothy
Gramoxone Inteon	1 pt.	44 bc	100	97 a
Pursuit +AMS 2.5 lb/A +NIS 0.25%	4 oz.	35 c	100	84 a
Pursuit +AMS 2.5 lb/A +NIS 0.25%	6 oz.	----	----	----
Raptor +28% N 2.5% +COC 1%	4 oz.	61 b	100	37 b
Raptor +28% N 2.5% +COC 1%	6 oz.	----	----	----
Select Max 1EC +COC 1% +AMS 2.5 lb/A	6 oz.	35 c	100	1 c
Velpar 2L	1 qt.	89 a	100	100 a

Table 2. Herbicide treatment, rate, and visual ratings of percent control of rough-stalk (RSB) and remaining stand of alfalfa and timothy 30 days after treatment applied following first cutting.

Treatments	Rate After 1st cutting	% Control of RSB - After 1st cutting	% Stand - After 1st Cut	
			Alfalfa	Timothy
Gramoxone Inteon	1 pt.	83 ab	100 a	62 b
Pursuit +AMS 2.5 lb/A +NIS 0.25%	4 oz.	50 b	100 a	90 a
Pursuit +AMS 2.5 lb/A +NIS 0.25%	6 oz.	58 b	100 a	60 b
Raptor +28% N 2.5% +COC 1%	4 oz.	95 a	95 a	29 c
Raptor +28% N 2.5% +COC 1%	6 oz.	100 a	97 a	8 c
Select Max 1EC +COC 1% +AMS 2.5 lb/A	6 oz.	93 a	100 a	10 c
Velpar 2L	----	----	----	----

bluegrass on alfalfa and timothy grass mixtures. There were two application timings: early April - dormant alfalfa (Table 1) and after first cutting (Table 2). Treatments were evaluated visually about 30 days following treatment.

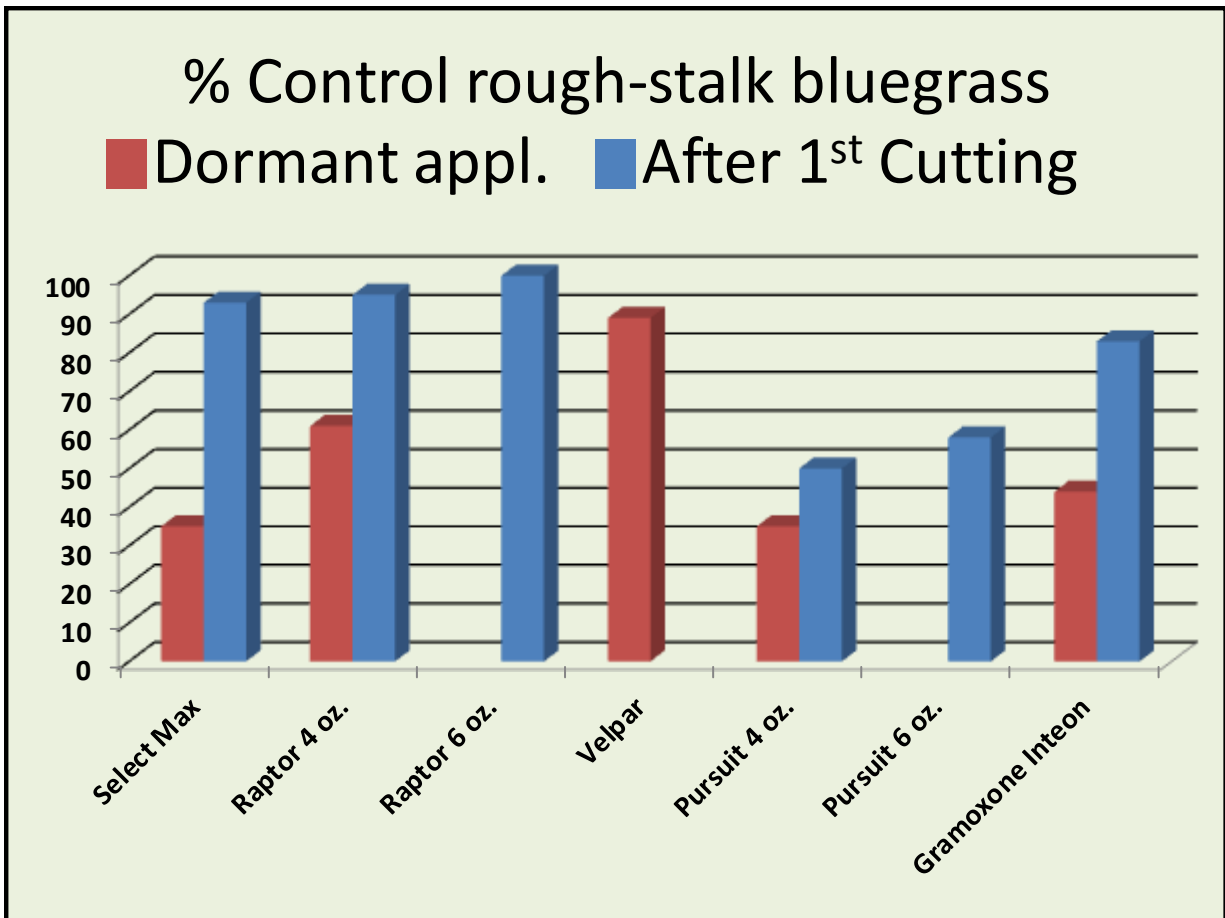


Fig. 1 Percent control of rough-stalk bluegrass approximately 30 days following herbicide application in early April (dormant) and after 1st cutting.

No dormant application of 6 oz. of Raptor or Velpar after 1st cutting were applied.

ROUGH-STALK BLUEGRASS CONTROL

Control of rough-stalk bluegrass in mixed (legume/grass) stands is extremely difficult. Prevention and early eradication is the key. Plant only certified grass seed. Grass seed tags should be closely inspected for weed seed content and grass seed with any annual or rough-stalk bluegrass should not be used. Soil testing for proper soil pH and adequate nutrients for the desired crop is essential to increase vigor of the stand in the seeding year. Herbicide options are limited for legume/grass stands as most have a negative effect on the desired legume and/or grass. Gramoxone or spot treatments of glyphosate between cuttings can be effective at reducing populations if roughstalk bluegrass is found early and occurs in limited areas. However, both legume and grass crop injury will occur. Once rough-stalk bluegrass is established more aggressive herbicides will be necessary.

In cases where forage grass stands are thin and pure legume stands are acceptable, Select Max, Poast, or Assure can be applied to control all emerged grasses; however viable seed

can still germinate and repeat applications will be necessary. Glyphosate applications to Roundup Ready alfalfa varieties will also provide control of roughstalk bluegrass.

CONCLUSIONS

Prevention is the best form of control of rough-stalk bluegrass. Similarities between this weed and desirable forage grasses make it very difficult to control in an alfalfa grass mix without collateral damage to the grass crop. **None** of the herbicide treatments evaluated were ideal for both controlling rough-stalk bluegrass and not harming timothy. **Growers are strongly cautioned that damage to timothy from Velpar will likely occur.** Gramoxone Inteon applied to dormant alfalfa in early April may be the best choice if crop safety is paramount. If some loss of desirable grass can be tolerated, Gramoxone Inteon or 4 oz. of Pursuit applied after first cutting may be a viable option.

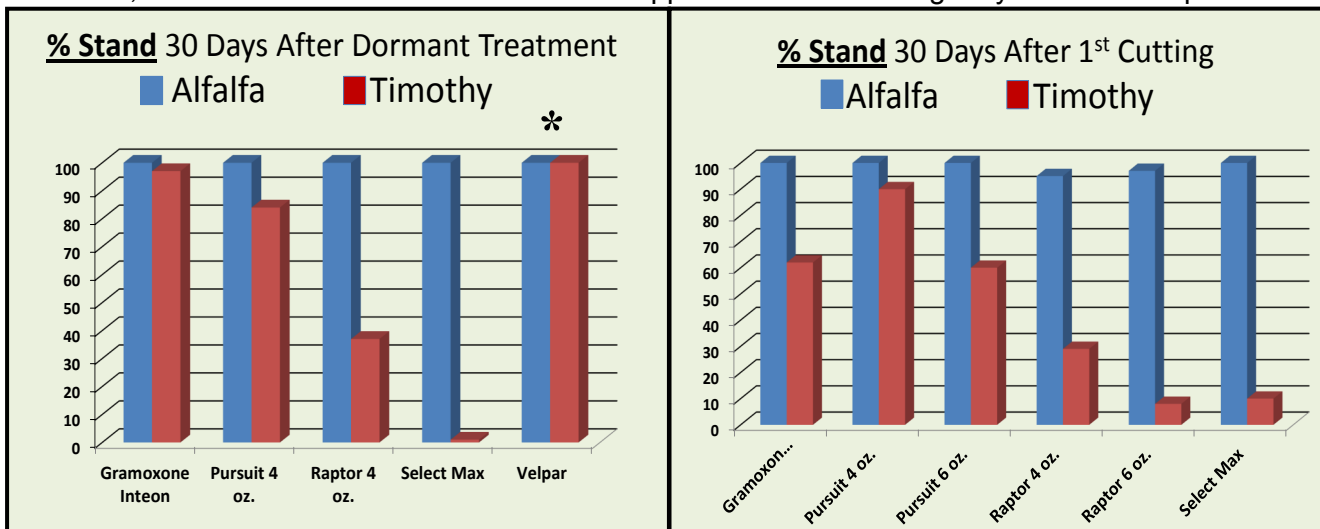


Figure 2. Percent alfalfa and timothy remaining about 30 days following herbicide applications made on dormant alfalfa and after first cutting to control rough-stalk bluegrass.

* Ratings at 30 days after dormant application were not late enough to evaluate the full effects of Velpar on timothy.

Although the data presented here would suggest that Velpar is a viable option, the authors suspect that all grasses, desirable and undesirable will be greatly reduced in the stand given more time.

These results are from a single year and location and several factors should be considered when selecting a herbicide. Greater crop damage from some of these herbicides may occur if crop has broken dormancy or if cutting height is increased. Both would result in greater photosynthetic tissue to absorb herbicides. As always, producers should read and follow label directions.

For additional information on forages and weed control options for alfalfa and alfalfa/grass mixtures, go to Michigan State University Forage Information Systems webpage at:

<http://fis.msue.msu.edu>