MID-TERM CRP LAND MANAGEMENT

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The Conservation Reserve Program (CRP) was initially established as a cropland set-aside program offered by the United States Department of Agriculture in the 1985 Farm Bill. Over the past twenty years, priorities for this program shifted to support wildlife habitat, specifically nesting habitat, food and cover for upland birds. Due to this shift, many fields that are monocultures of cool season grasses such as smooth brome are now considered improper habitat for this program. Recently, the Farm Service Agency (FSA) has required owners of these properties to suppress cool season grasses and diversify the plant species present by inter-seeding the fields with desirable forbs. This management is intended to enhance wildlife habitat by increasing plant species and structural diversity as well as remove duff and control woody vegetation. While options for management are provided by the National Resource Conservation Service (NRCS), limited information exists on the effectiveness of herbicides and tillage in suppressing cool season grasses, establishing desirable forbs, and how these treatments can affect soil loss.

Experiments were conducted in Green and Dodge County, Wis. to evaluate the effectiveness of glyphosate (Roundup), sethoxydim (Poast) and fluazifop (Fusilade) in suppressing smooth brome dominated stands compared to tillage and untreated plots (see Table 1 for rates). Herbicides and tillage were applied in the spring on 4/29/08 and 5/12/08 at each site respectively. At the Greene county site, plots were inter-seeded with alfalfa (selected desirable forb) using a no-till drill 1 day after treatments (DAT) were applied.

Suppression of smooth brome and other cool season grasses was observed with treatments containing glyphosate and fluazifop at both sites during the summer. Percent control was 75-85% and 88-94% for treatments containing glyphosate and 48-58% and 84-91% for treatments containing fluazifop 97 DAT and 77 DAT at the Green and Dodge County site respectively (Table 1). Suppression did diminish with time however, and at the Green County site, only treatments containing glyphosate were able to maintain suppression of smooth brome 127 DAT, with glyphosate at 0.5, 0.75, and 1.0 lb ae/acre reducing cover of smooth brome by 84, 89, and 91%, respectively. At the Dodge County site, smooth brome remained suppressed 106 DAT with fluazifop, glyphosate, sethoxydim and tillage. Fluazifop at 0.19, 0.25, and 0.38 lb/acre reduced cover by 57, 82, and 83% compared to the untreated plots respectively, while glyphosate at 0.5 and 0.75 lb/acre and sethoxydim at 0.29 lb/acre reduced smooth brome cover 73, 60, and 51%, respectively. Differences in suppression between sites may have been due to large populations of goldenrod species at the Dodge County site in combination with no inter-seeding of alfalfa. Establishment of alfalfa was successful at the Green County site with all treatments, but only increased with glyphosate treatments. Cover of alfalfa 127 DAT with these treatments were 34-55% compared to 2% in untreated plots.

Although all methods were effective in establishing a more diverse plant community, the use of glyphosate was more effective at suppressing populations and allowing for establishment of alfalfa while also suppressing other undesirable broadleaf weeds. While disking suppressed smooth brome, results did not persist throughout the year as cover was only significantly reduced at the Dodge county site 38% 106 DAT. These data in combination with the potential for increased soil loss should cause land managers to hesitate in recommending disking for mid contract management of cool season grasses on highly erodible land.

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Table 1. Percent control and cover of smooth brome and other cool season grasses after spring treatments.

Treatment	Active ingredient	New Glarus 97 DAT †	Dodge 77 DAT	New Glarus 127 DAT	Dodge 106 DAT
product/acre	lb/acre	% control		% cover	
Fusilade (12 fl oz)[2]	fluazifop (0.19)	48	91*	71	14
Fusilade (16 fl oz)[2]	fluazifop (0.25)	53	90*	76	5*
Fusilade (24 fl oz)[2]	Fluazifop(0.38)	58*	83*	66	5*
Poast plus (12 fl oz)[2]	sethoxydim (0.10)	42	36	89	32
Poast plus (24 fl oz)[2]	sethoxydim (0.19)	37	45	84	45
Poast plus (36 fl oz)[2]	sethoxydim (0.29)	38	17	85	16*
Roundup Weathermax (14 fl oz)[3]	glyphosate (0.5 ae)	75*	88*	33*	9*
Roundup Weathermax (21 fl oz)[3]	glyphosate (0.75 ae)	80*	89*	26*	13*
Roundup Weathermax (28 fl oz)[3]	glyphosate (1.0 ae)	85*	94*	22*	22*
Untreated control		28	5	87	32
Disking		43	60*	62	20*

[2] Included 1% crop oil concentrate and 2.5 lb/acre of ammonium sulfate.
[3] Included 10 lb/acre of ammonium sulfate.
* Indicates value is different than untreated controls within the column.
† DAT = days after treatment.

Table 2. Cover of alfalfa (planted desirable forb) at the Green County site after spring treatments.

Treatment	Active ingredient	New Glarus 127 DAT †
product/acre	lb/acre	% cover alfalfa
Fusilade (12 fl oz)[2]	fluazifop (0.19)	12
Fusilade (16 fl oz)[2]	fluazifop (0.25)	18
Fusilade (24 fl oz)[2]	Fluazifop (0.38)	28
Poast plus (12 fl oz)[2]	Sethoxydim (0.10)	5
Poast plus (24 fl oz)[2]	Sethoxydim (0.19)	3
Poast plus (36 fl oz)[2]	Sethoxydim (0.29)	9
Roundup Weathermax (14 fl oz)[3]	glyphosate (0.5 ae)	48*
Roundup Weathermax (21 fl oz)[3]	glyphosate (0.75 ae)	34
Roundup Weathermax (28 fl oz)[3]	glyphosate (1.0 ae)	55*
Untreated control		2
Disking		20

[2] Included 1% crop oil concentrate and 2.5 lb/A of ammonium sulfate.
[3] Included 10 lb/A of ammonium sulfate.
* Indicates value is different than untreated controls within the column.
† DAT = days after treatment.