

Establishment of Perennial Native Grass Species in the Black Soil Zone of Manitoba and Saskatchewan:

A practical look at the seeding and establishment of Native Species

Project Objective: This project aimed to successfully establish six representative sites of native plants in the Black Soil Zone.

Description of Sites:

In total, six sites were chosen in the Black soil zone across Manitoba (2 sites) and Saskatchewan (4 sites). Each field was approximately 40 acres in size to simulate a paddock or hay field. One site in Manitoba was abandoned as the producer was unable to seed due to wet conditions (see Table 1 for description of sites).

Seed Blends:

Five sites were seeded during the 2007 growing season using a native seed

blend. The native grass-legume blends (Table 2 and 3) were developed by Ducks Unlimited Canada agrologists using site adapted species and Proven Seed Ecovars. Producers utilized various methods and times to seed their native species blend (see Table 1). Once established, these sites may be used as a bench mark on how native stands are able to establish and perform in various agricultural uses such as haying or grazing for livestock.

Establishment:

Each producer, in consultation with forage agrologists, determined the method of seeding to be used on their farm. Glyphosate was applied for

Table 1 – Field Locations, Seeding Dates, Methods & Blends

Site	Province	RM	Seed Blend	Date Seeded	Seeding Method	Stand Assessment
Site 1	MB	183	#2	Oct'07	pre-worked, cultivated land, Truax drill	To be completed in spring of '09
Site 2	SK	32	#2	Aug '07	conventional, summerfallow, hoe drill	3 leaf stage, moderate
Site 3	SK	245	#1	June '07	standing stubble , zero till drill	good
Site 4	SK	371	#1	June '07	broadcast and harrow	good
Site 5	SK	436	#1	June '07	broadcast and harrow	good
Site 6*	MB		n/a	n/a	n/a	n/a

* Site 6 was unable to be seeded due to environmental conditions.

pre-seed burn off at each site. Seed cost was approximately \$70/acre and the cost of seeding and pre-seed burn off was approximately \$30/acre for a total cost of \$100/acre to seed these sites. Seeding dates ranged from June to October of 2007. Following seeding, stands were assessed by a Ducks Unlimited agrologist to determine the success of seeding after emergence and later in the season for success of establishment. The fall seeded site (1)

was not assessed a second time, as there was not enough growth in the fall of 2007 to warrant a second visit. All sites showed reasonable success in germination of the native seeds and there did not appear to be problems associated with any of the seeding methods. The producer at site 2 found the seed blend was bridging in his drill, so added some wheat seed to alleviate this problem. Early assessments showed northern wheatgrass, slender

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wheatgrass, western wheatgrass and Canada wildrye dominating the stands. There were several weed species present in all sites by fall of 2007, however, these are predicted to decline as the native grasses and legumes take hold. Sites 4 and 5 were both grazed in the fall of 2007, however, the majority of

the forage for grazing was provided by the oats. All sites will be observed as they continue to establish and as producers begin to utilize these native plots in their operation (for grazing or hay production), productive capability and longevity will also be monitored.

Table 2 - Blend #1 Black Soil Native Mix

Species	Variety	PLS lbs/ac	seeds/ lb	PLS seeds/ sq ft
oats		10.0		
western wheatgrass	WR Poole	1.0	110,000.0	2.5
northern wheatgrass	Co 1	1.7	154,000.0	6.0
slender wheatgrass	Co 1	0.5	159,000.0	1.8
awned wheatgrass	Sprig	0.6	138,000.0	1.9
canada wildrye	Mandan	1.0	115,000.0	2.6
june grass	Canada #1	0.04	1,710,000.0	1.6
rough fescue	Canada #1	0.6	357,000.0	4.9
purple prairie clover	Canada #1	0.3	300,000.0	1.7
green needlegrass	Mallard	2.2	181,000.0	9.1
Total		7.89		31.9

Table 3 - Blend #2 Black Soil Native Mix

Species	Variety	PLS lbs/ac	seeds/ lb	PLS seeds/ sq ft
oats		10.0		
western wheatgrass	WR Poole	1.0	110,000.0	2.50
northern wheatgrass	Co 1	0.75	154,000.0	2.63
slender wheatgrass	Co 1	0.1	159,000.0	0.36
awned wheatgrass	Sprig	0.4	138,000.0	1.25
purple prairie clover	Canada #1	0.25	300,000.0	1.70
little bluestem	Taylor	1.0	260,000.0	5.91
switchgrass	Co 1	0.5	389,000.0	4.42
big bluestem	Co 1	2.5	165,000.0	9.38
side oats gramma	Co 1	1.0	191,000.0	4.34
green needlegrass	Mallard	1.0	184,000.0	4.18
Total		8.5		36.67

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A photo of site 1 was not available



Site 2 – near Alida, SK in RM #32



Site 3 – near Yorkton, SK in RM #245

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Site 4 – near Bruno, SK in RM #371



Site 5 – near North Battleford, SK in RM #436