S9549 Meadow Bromegrass

CROP:

Common name: Meadow bromegrass
Scientific name: *Bromus riparius Rehm.*

EXPERIMENTAL DESIGNATION: S9549

VARIETY NAME: To be determined

ORIGIN AND BREEDING:

Breeding Institution:

Crop Development Center
University of Saskatchewan
51 Campus Drive
Saskatoon, Sk S7N 5A8
Ph. 306-966-4007

Plant Breeder: Bill Biligetu and Bruce Coulman

VARIETAL CHARACTERISTICS

S9549 is a 19-clone synthetic. S9549 meadow bromegrass was selected for high forage biomass and rapid regrowth. On average, S9549 was 4-5 cm taller than the check cultivar, Fleet. Plant maturity is similar to Fleet. Morphological data are found in Table 1.

Ploidy: Decaploid, 70 chromosomes

PERFORMANCE AND ADAPTATION:

Hay Yield: In regional trials, over 6 station-year, the mean forage biomass yield of S9549 was 6% greater than the check cultivar, 'Fleet' (Table 2). In two separate preliminary trials seeded in 2008 and 2009 at Saskatoon, S9549 produced 10% greater yield than 'Fleet' (Table 3).

Adaptation: S9549 produced comparatively high yields in all soil zones of the Canadian prairies, with high yield potential in Brown soil zone.

Seed Yield: Seed yields of S9549 were similar to check cultivar 'Fleet'.

SEED STOCKS:

Breeder seed will be maintained by the Crop Development Center of the University of Saskatchewan. Breeder seed (60 kg) was produced from in 2019, which will be available for

establishment of foundation seed fields.

Brief Breeding History:
From 1996-2004, various selections have been made within 'Fleet' and 'Paddock' meadow bromegrass for high forage and seed yields. In 2005, Fleet, and five other breeding lines S9452, S9454, S9455, S9457 and S9511 were established in a four replicated spaced plant nursery at Saskatoon, and evaluated for plant vigor, plant height, lodging resistance, freedom from disease for six times in 2006 and 2007. The lines were harvested for forage biomass yield. In 2007, 19 vigorous plants were selected and poly-crossed in the greenhouse in winter 2007-08, and the seed harvested was designated S9549. S9549 was seeded in a four replicated sward density forage production trial at Saskatoon in 2008, and yields were determined from 2009 to 2011. In 2009, an additional sward density trial was established at Saskatoon and forage yield was determined from 2010-2012. In 2017, S9549 was entered in the Saskatchewan Forage Variety Demonstration trial.

Table 1. Morphological charasteriscis of S9549 meadow bromegrass

	S9549	Fleet (check)	Description
Growth habit (at vegetative stage)	2.2	1.3	1 = erect, 3 = semi-erect, 5 = medium, 7 = semi-prostrate, 9 = prostrate
Leaf Pubescence	4.4	4.5	3 = glabrous; 5 = slightly pubescent; 7 = medium pubescent; 9 = strongly pubescen
Flag leaf length (cm)	167	162	-
Flag leaf width (cm)	6.6	6.6	-

Table 2. Forage dry matter yield (kg/ha) of S9549 meadow brome at various sites

Zone	Location	Year	Fleet	S9549
Brown	Swift Current	2018	1787	1965
		2019	2246	2228
Dark Brown	Saskatoon	2018	5225	5153
		2019	7370	7871
Black	Melfort	2018	4203	4039
		2019	6044	7165
Mean	Station-year	6	4479	4737
	% Fleet		100	106

Table 3. Forage dry matter yield (kg/ha) and plant height (cm) of meadow brome seeded in 2008 and in 2009 at Saskatoon

	Forage DM yield		Plant height (cm)	
Year	S9549	Fleet	S9549	Fleet
2009	7887	8627	95	91
2010	10796	9945	-	-
2011	2665	2575	104	99
2010	11557	8901	121	106
2011	4386	4045	114	103
2012	6059	5454	-	-
Mean	7225	6591	109	100
% of Fleet	110	100	109	100