

## South Dakota 2107 State Report for MCCC Committee

Researchers in South Dakota are working on cover crops effect on nutrient cycling, residual herbicide effects on cover crops, and integration of livestock in cover crop rotations. In addition, researchers are also focusing on cover crop establishment, spatial variation of cover crop establishment in differing landscape positions, and evaluating coated cover crop seeds for optimizing establishment. Others are focusing on tillage and cover crop effects on soil water budgets.

South Dakota has initiated the process of becoming the next state included in the Midwest Cover Crop Council Crop Decision Tool. A group of fifteen cover crop experts in South Dakota (SDSU agronomists, Extension specialists, NRCS, seedsmen, and experienced farmers) are working on ranking cover crops to assist farmers in selecting cover crops. Rankings are based on nine distinct agriculture regions varying by planting date, precipitation, salinity, and drainage class to list some of the variables.

Results of this research is communicated in field days, and field demonstration days, and via information being distributed in cover crop booths at larger producer events (e.g. State Fair, DakotaFest)

In 2017, South Dakota Soybean Research and Promotion Council sponsored several on-farm and small plot research trials investigating interseeding and landscape position effects on cover crop establishment.

On farm trials performed in 2017 by the Clay group.

Location	Trial Type	Product
Brookings	Cover Crops	Hairy Vetch
Brookings	Cover Crops	Hairy Vetch
Brookings	Cover Crops	Red Clover
Brookings	Cover Crops	Red Clover
Brookings	Cover Crops	White Clover
Brookings	Cover Crops	White Clover
Groton	Multi-variety	unknown
Lake Andes	Cover Crops	Hairy Vetch
Lake Andes	Cover Crops	Hairy Vetch
Lake Andes	Cover Crops	Red Clover
Lake Andes	Cover Crops	Red Clover
Lake Andes	Cover Crops	White Clover
Lake Andes	Cover Crops	White Clover

Red clover drilled into soybeans at 5 lbs ac<sup>-1</sup> on July 11, 2017 in Lake Co.

Cover Crop	Landscape Position	Grain Yield	Red Clover Biomass
		---bu ac <sup>-1</sup> ---	-----lb ac <sup>-1</sup> ----

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Red Clover	Summit	54.1	12.0 ab
None	Summit	57.7	
Red Clover	Backslope	56.7	22.5 a
None	Backslope	57.6	
Red Clover	Footslope	58.7	1.8 b
None	Footslope	57.5	
†Values with a different letter are significantly different at p<0.12.			

Hairy vetch drilled into soybeans at 25 lbs ac <sup>-1</sup> on July 11, 2017 in Lake Co.			
Cover Crop	Landscape Position	Grain Yield	Hairy Vetch Biomass
		---bu ac <sup>-1</sup> -	-----lb ac <sup>-1</sup> ----
		--	
Hairy Vetch	Summit	55.8	20.7 b
None	Summit	57.7	
Hairy Vetch	Backslope	57.6	92.6 a
None	Backslope	57.6	
Hairy Vetch	Footslope	59.4	10.1 b
None	Footslope	57.5	
†Values with a different letter are significantly different at p<0.10.			



On farm cover crop trials in South Dakota.



Interseeded birdsfoot trefoil in soybeans in South Dakota





Landscape effects on cover crop establishment in South Dakota.



South Dakota Interseeder