

November 16, 2009

KLEIMAN OVERSEED STUDY – A RANDOM BLOCK DESIGN

Initiated November 15, 2009 by Bill, Susan, and Leah Kleiman

Summary author: BK

Study question: What is the best way to over-seed an already established prairie planting to increase its diversity?

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The random block is located about 100 yards south of the visitor entrance kiosk on Lowden Road. More details of location are below.

SOUTH	WEST side					NORTH side
	A1 Disc, harrow, seed	A2 Seed only	A3 Harrow, seed, and Poast in May 2010	A4 No seed - Control	A5 Harrow, seed	
	B1 Harrow, seed, and Poast in May 2010	B2 Harrow, seed	B3 No seed - Control	B4 Seed only	B5 Disc, harrow, seed	
	C1 Disc, harrow, seed	C2 Seed only	C3 Harrow, seed	C4 No seed - Control	C5 Harrow, seed, and Poast in May 2010	
EAST SIDE 50' IN FROM ROADSIDE FENCE						

The entire study area was burned just a few days before we set up this study. That was November 12 and the temperature high was 53 degrees, winds 10 mph out of the south, RH about 42% at bottom. Unit was blackened, but when harrowed on November 15 the black sod showed some thatch was unburned.

Treatments were as follows:

1. No seed – control. We did not add seed.
2. Seed only. Here we spread the same weight and seed mix that we put on all the cells that received seed. This seed mix is the crew seed mix of November 2009 brought in by Crew. For the 12 cells that received seed we divided up the seed into 12 paper bags. Placed one bag in each cell once the cells were ready. Then the three of us carefully hand broadcast the seed in each cell. We felt we got a pretty even spread of the seed.
3. Harrow, then seed. I ran a Furst chain-harrow which is 12' wide by 8' deep. I ran the harrow at least three times on all parts of each harrowed cell.

4. Disc, harrow, and seed. Here we used a very old 10 foot disc behind the JD 5400. I ran the disc in circles and made a disturbance for at least 4 inches deep. I took photos of this. I was unsure how deep and vigorous to go. I felt I did all three disced cells in a similar fashion. Then I ran the harrow I describe above about three times over these cells at same time I harrowed other cells.
5. Harrow, seed, and Poast. We harrowed these cells, and seeded them with others in same manner. We plan to apply Poast + grass herbicide in May 2010. This will effect the cool season grasses, but not likely the warm season grasses. But we don't want to apply it late and kill emerging grass seed as the mix has many grass species.



The random block study area.



Results of discing a cell



The research team of Kleiman, Kleiman, and Kleiman.

Calculations and sizes:

Each cell is 50 feet by 50 feet. This was thought big enough to be able to work with a machine and hopefully not effect neighboring cells, but small enough to handle easily. So the block is 250 foot in the north to south direction, parallel with Lowden Road. And it is 150 foot in east west direction. The block has a tee post installed at each corner. I installed a rebar at SE and NE corners. The four GPS coordinates are as follows:

SE: N41.88292, W 089.34183 SW: N .88282, W .34230 NW: N .88337, W .34235

NE: N .88348, W .34177

We used the right of way fence on Lowden as our “traveler”, or basis of measure. The east line of block is 50 foot west of right of way fence. The north-east corner is due west of a right of way tee post that is marked with a tag.

The cells are likely within one foot of where they “should” be. Since data should not be collected within 12 feet of a cell edge we figure the cell can be off a foot easy. But the flags lined up as good as any block I have set up before.

Calculations:

$50 \times 50 = 2500 \text{ sqft.}$ $2500 \text{ sqft} \times 1 \text{ acre}/43,560 = 0.057 \text{ acre}$ in one cell

We had 30.91 pounds of seed mix that was added to 12 of the 15 cells.

$0.057 \text{ acres} \times 12 = 0.684 \text{ acres}$

So.... $30.91 \text{ pounds}/0.684 \text{ acres} = 45.2 \text{ pounds per acre}$ of seed.

This was 2.575 pounds per bag for each of 12 cells.

When I first calculated I wanted perhaps 30 pounds per acre of seed to get a robust response so I would have enough emerging plants to get a measure. But I forgot that only 12 of 15 cells get seed so my poundage is up to 45.2. Maybe this will be ok.

I took various photos on November 15, 2009 prepping the cells. Susan was very helpful in the setup and Leah hung in there all day too. Leah was with us as we set up the cells, which took maybe two hours, then Susan divided up the seed with Leah, then the three of us planted. I did the discing and harrowing. The photos are stored in the main digital photo file.

NEXT ACTIONS: SUMMER 2011. COLLECT FQI DATA.

END.