

Grassland Oregon

Blog

July 19, 2018

Always new experiments happening on our Iowa Research Farm!

Cover Crop Matrix

By Brent Jones

On April 16, 2018 I prepped an area for my Spring Cover Crop Matrix. This would be a block consisting of 6' x 6' plots of Mustard, Purple Top Turnips, German Millet, Daikon Radish, Buckwheat, Phacelia, Frosty Berseem Clover, Survivor Winter Peas, Spring Oats and Sun Hemp. Seeding rates were as follows:

Mustard 3#/A
Purple Top Turnips 2#/A
German Millet 10#/A
Daikon Radish 2#/A
Buckwheat 15#/A
Phacelia 2#/A
Frosty Berseem 8#/A
Survivor Peas 20#/A
Spring Oats 20#/A
Sun Hemp 8#/A

The area was plotted out and dragged with a harrow. Seed was broadcast, raked in then rolled to make a firm seed bed. The goal of this trial was to see which species established the quickest, provided the most ground coverage and ultimately provided the best spring weed suppression.

The Survivor Peas and Spring Oats were the first to emerge on April 25th. Soil temperatures remained in the upper 40's to low 50's until late in April which was the coldest April in 100 years in Iowa, so emergence of most species was slow.



The Radishes, Millet, Turnips and Frosty started growing around May 7th with Phacelia, Sun Hemp and Mustard the last to get going around May 12th. The timing of growth was very important for weed suppression. By May 20th, the ground came to life with a sprout of purslane unlike I have ever seen before in the 5 years we have been on the Richland, IA Research Farm. There was sufficient moisture available when the soil temperature warmed up to the point where purslane germinates so it came on with a vengeance.



The next flush of weeds to express their personality was the dreaded pigweed around the first week in June. By this time, it was abundantly clear which species and combination of species were best for spring weed control. Ranking them in order of their effectiveness, I would say Peas, Oats, Millet and Buckwheat were the clear winners. Our weather in June was very hot and wet so the radish and turnips were set back by a foliar disease otherwise they would rank as one of the better species for weed control as well.

Combinations of Peas and Oats, Peas and Millet, Peas and Buckwheat, Buckwheat and Millet, Buckwheat and Oats all did a great job of keeping the weeds at bay.

As we head into the dog days of summer, we will be planning our Fall trials which will include a silage trial for harvest next spring and a lot of cold tolerance trials. I will be harvesting seed from a block of Frosty Berseem clover that survived -19* last winter and continuing selection work to improve the cold tolerance of the next Frosty generation.

I hope everyone has a great summer!