

## Cover crop interseeded into wide row silage corn shows promise

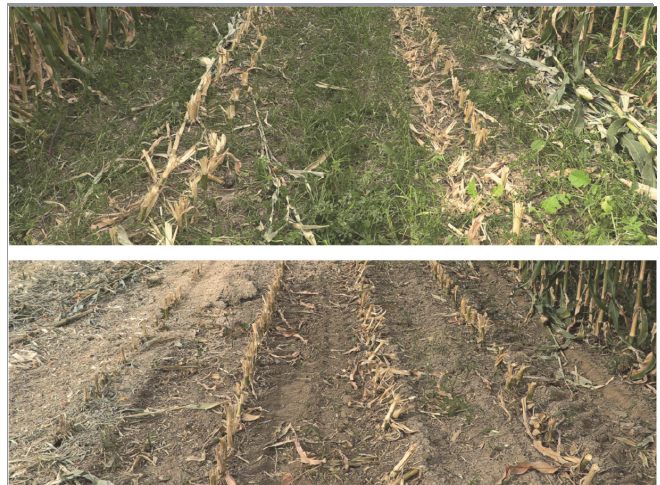
### AT A GLANCE

Establishing cover crop after silage corn harvest is a challenge. Interseeding cover crops into corn grown on wide rows shows promise for established late season cover crops.

### The Situation

Producers in Idaho use cover crops for two main purposes, to keep the soil covered after the cash crop is harvested and fall or winter forage. Cover crops can be established after cereal grain harvest easily as there is plenty of time left in the growing season. Following other crops in southern Idaho can be a real challenge due to shorter days and less heat later in the season. Interseeding cover crops into the cash crop mid-season can help get the cover crop started earlier. Producers have been interseeding cover crops into corn on standard 22 inch or 30 inch rows with some success. The corn rapidly shades the cover crop on canopy closure, so the cover crop needs about four to six weeks of growth after harvest to produce much biomass. Growers in the Midwest have been planting cover crop into grain corn grown on wider than normal row widths, generally skipping one row and planting the other row heavier.

Various research and on-farm trials have been met with mixed success in maintaining yield. Approximately 70% of the corn grown in southern Idaho is used for silage. Producers are looking for methods to increase cover crop production with minimal effects to the cash crop, questioning if silage corn could be



Post-harvest images of a corn plots comparing an interseeded plot (top) and non-interseeded yield check (bottom).

grown on wide rows while maintaining yield and producing cover crop with enough biomass to graze the same day corn silage was harvested.

### Our Response

A team of extension educators designed a three-year demonstration study to determine if silage corn yield could be maintained on wide rows. Since corn is grown on 22 inch or 30 inch rows normally, the study used treatments of 44 inch wide rows and 60 inch wide rows and used standard 30 inch rows, without cover crop, as the yield check. The corn was planted in early May and the cover crop was broadcast into the corn the third week of June, approximately the V5 growth stage of the corn. The day before corn harvest, in September, the cover crop was clipped for yield

estimation. The corn plots were harvested with a two-row forage harvester which weighed the crop and gathered samples for moisture testing. Field tours were held each year showcasing the project to producers and other agency staff.

## Program Outcomes

All three years results indicate that corn silage yield can be maintained, and even exceeded. In all years, the corn grown on 44 inch rows statistically equaled the yield of the 30 inch check plots but in actual production the 44 inch rows exceeded the yield check plots in two of the three years. The hypothesis was the 60 inch wide rows would yield the highest due to maximum sunlight reaching the plants but that was not the result.

The cover crop yield was highly variable from year to year. In two years, the 60 inch wide rows yielded more cover crop, which was expected due to wider rows and more sunlight reaching the crop. The cover crop yielded from 0.33 tons dry matter per acre in 60 inch rows up to 1.47 tons dry matter per acre, also in 60 inch corn. In all cases there was enough biomass to keep the soil covered and also enough to provide grazing on the day of harvest. Most producers will likely irrigate the cover crop and let it continue to grow until the end of the season.

The greatest impact of this work is that two producers in Twin Falls County are experimenting with the 44 inch wide rows and interseeding cover crop. One grower is in his second year of testing and has told us he would like to move to planting all his corn into wide rows because he wants his soil armored with cover crop through the winter. The second producer is also interested in soil armor rather than grazing. Another producer in western Idaho tried the practice this growing season but had poor cover crop establishment.

## The Future

There are still many things to learn about interseeding cover crop into corn. Broadcasting was the first practice employed in Idaho, but producers know that drilling or other methods might be key to better establishment success. This same team of Extension educators is now experimenting with drilling cover crop directly into the growing corn. The 2023 growing season was the first year of this demonstration so more work needs to be done. There are also questions about other row widths, corn populations, various cover crop species and mixes, and how to adapt interseeding into other crops grown in southern Idaho.

## Cooperators and Co-Sponsors

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## FOR MORE INFORMATION

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