

The development of shorter season soybean varieties has some producers in the Prince Albert region looking at soybeans as an alternative crop that could be grown to help lengthen crop rotations. Soybeans are seldom grown in this region of the province, as the shorter growing season and risk of damaging spring or fall frosts tend to result in low yields. In order to test these new shorter season varieties for use in the region, examine the potential benefits of using tillage to warm the soil in the spring, as well as assess the potential risks of an early seeding date on the risk of frost damage, a trial was conducted near Prince Albert SK in 2020.

Five soybean varieties were seeded in the spring of 2020: NSC Newton, NSC Leroy, NSC Watson, NSC Redvers, and NSC Wynyard. Two replicates were rototilled prior to seeding and two were direct seeded into canola stubble. Three separate blocks were seeded on: May 13 (Early), May 23 (Mid), and June 3 (Late).

Soybean yields were low in all treatments (Figure 1). Soybean production was challenging due to cool spring temperatures, an early fall frost (-3.6°C on September 8), and animal grazing. The latest spring frosts occurred prior to emergence of soybeans in any of the seeding dates and is not expected to have influenced yields. Yields in the mid treatment may also have been negatively impacted by accidentally seed-placing phosphorus fertilizer.

There were important differences in yield between soybean varieties (Figure 1) ($p < 0.001$). NSC Leroy was consistently among the highest yielding varieties across all seeding dates (Figure 1). NSC Watson and NSC Wynyard had the highest yields of the early seeded soybeans. NSC Redvers and NSC Newton were the lowest yielding varieties. NSC Redvers and NSC Newton were the least mature varieties when the frost hit, which contributed to higher yield losses.

Blackening the soil by tillage did not significantly improve soybean yields (Figure 2). Rototilling did increase spring soil temperature by a few degrees but that did not translate to improved yields.

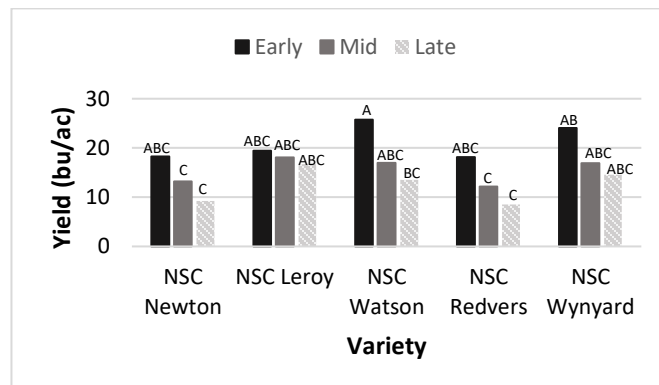


Figure 1. Soybean yield by variety and seeding date at the CLC in 2020.

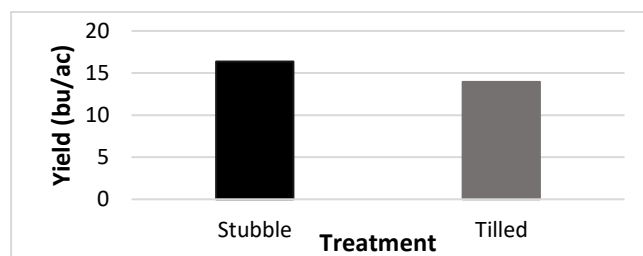


Figure 2. Soybean yield by soil treatment at the CLC in 2020.

Earlier seeding led to significantly higher yields (Figure 3) ($p = 0.001$). This suggests that early seeding of soybeans may not be as detrimental as previously thought.

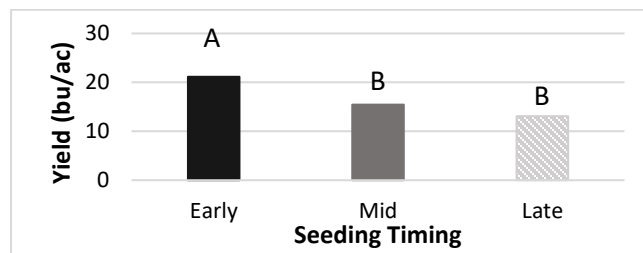


Figure 3. Soybean yield by seeding date at the CLC in 2020.

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