

2019 Corn Demonstration Plot – Part I Planting

A corn demonstration was planted at Huron Tractor Exeter on June 4, 2019. The demonstration showcases four factors, tillage, seeding rate, planter speed, and planter downforce. The tillage compared on the demonstration plot include plowing, strip tillage (Soil Warrior 4530SXD), vertical tillage (Landoll 7431VT) and disc ripped (John Deere 2730). The population trials were implemented using a variable rate prescription in blocks across the farm (Figure 2). This varied from 32,000 -38,000 seeds per acre. We demonstrated seeding at 5MPH versus 7.5MPH and active versus static downforce application (Figure 2).



Figure 1: Tillage demonstrations at the Huron Tractor Exeter Location. The tillage implement used is shown above the respective map indicating the location within the field where that tillage was done.



Figure 2: Left: As applied population of corn seeding; Right: As-applied planting speed

The entire plot received 200lbs of a 50:50 blend of MAP & potash in the fall of 2018. This was all applied with the oat cover crop through the air seeder following wheat, with the exception being the strip tillage. For the strip tillage plot we applied the fertilizer in band using the John Deere Dry Rate Controller (Figure 3). In the fall, the Soil Warrior strips were applied with and without the rolling baskets on the back of the soil warrior (Figure 3). Unfortunately, we were unable to obtain the soil warrior in the spring in order to refresh our strips. Consequently, we planted the strips stale without spring tillage.

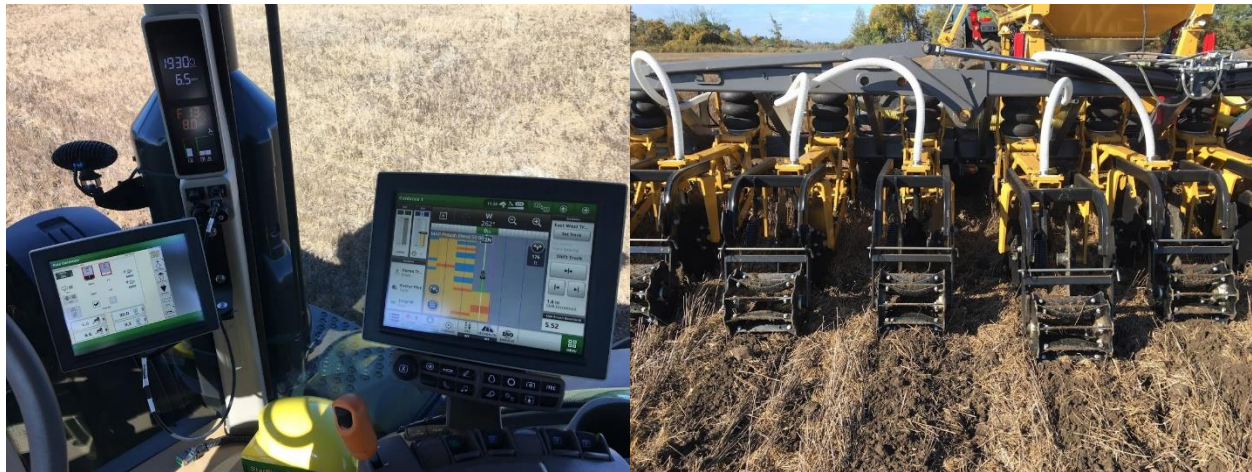


Figure 3: Left: October 2018, applying fertilizer with Soil Warrior and John Deere Dry Rate Controller; Right: Soil Warrior implement showing the rolling baskets in the down position.

The remainder of the field was tilled using the John Deere 9570R pulling a 2230FH field cultivator (Figure 4). This field cultivator is outfitted with TruSet technology for depth control of shanks, and pressure on rolling baskets. We set and verified depth at 2.5" and basket pressure at 350psi.

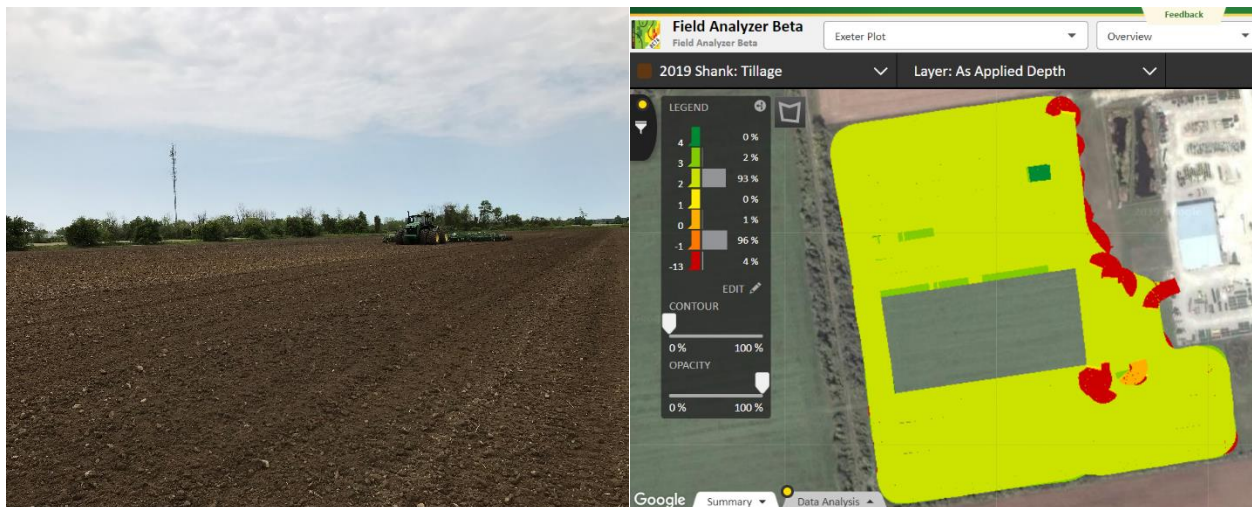


Figure 4: Left: John Deere 9570R and 2230FH Field Cultivator; Right: TruSet As-applied tillage depth

The field was planting using a John Deere Model Year 2019 1775 MaxEmerge 5e, with Generation 4 4600 and StarFire 6000 receiver (Figure 5). The 8295R tractor which was pulling this planter was utilizing JDLink Connect Subscription. Using the cellular connection we were able to wirelessly send the prescription the 4600 display and import it without using a USB. The 1775 planter has an electric motor on each row unit and theoretically could apply a different population of seed at each row. This planter was ideal for applying a precise prescription.



Figure 5: Technology utilized to plant variable rate soybean demonstration plot. Left hand images shows 1775 MaxEmerge 5e, with independent electric motors on each row. Right hand image shows the Prescription operating on the Gen4 4600 Command Center and Extended Monitor integrated in the 8295R tractor