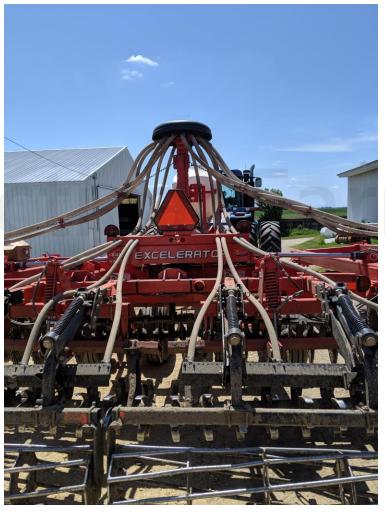


Cover Crop Seeding Methods

Presented by: Mike Unruh



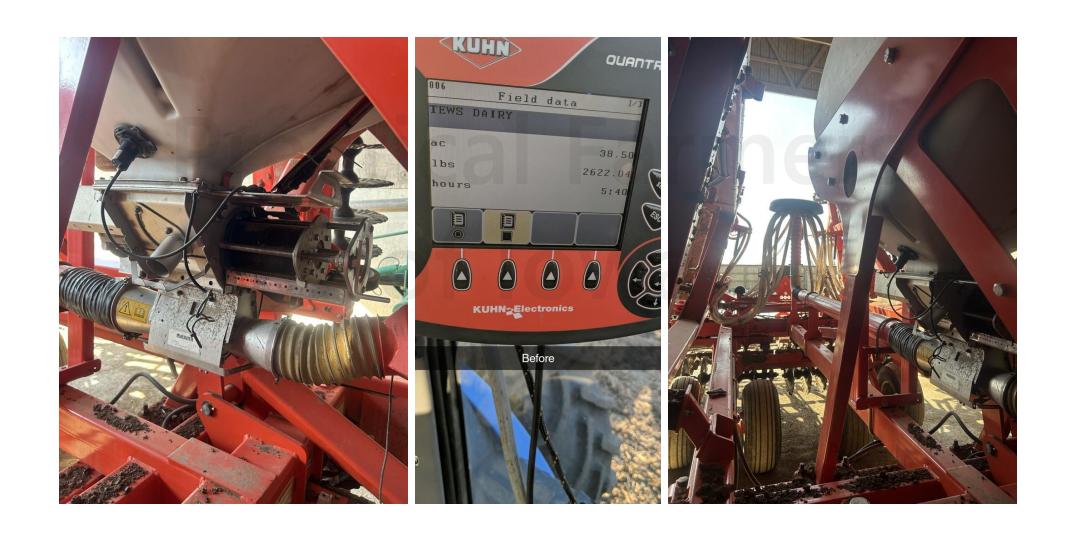




Kuhn VT with CCX Seeder Stats:

- 25 ft seeder
- Operating speeds from 2mph-17mph
- Seeding rates from 10lbs-200lbs (maybe more)
- 11 acres/hour @120lbs/acre (includes refill time)
- 15 acres/hour @50lbs/acre
- Incredibly accurate after running calibration procedure.

Kuhn VT Settings and Accuracy



Sorghum Stand













Alfalfa Behind Rye (2021)

Rye Stands



Oats seeded with VT







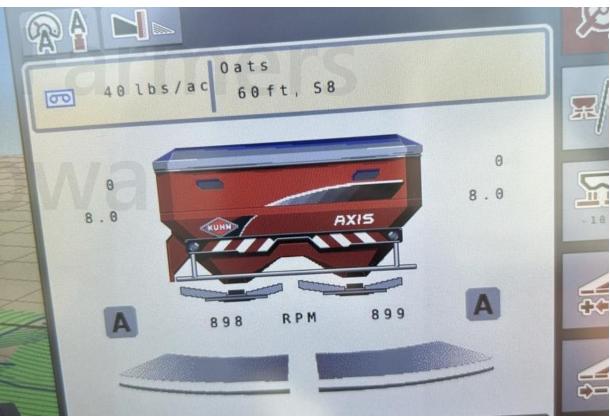


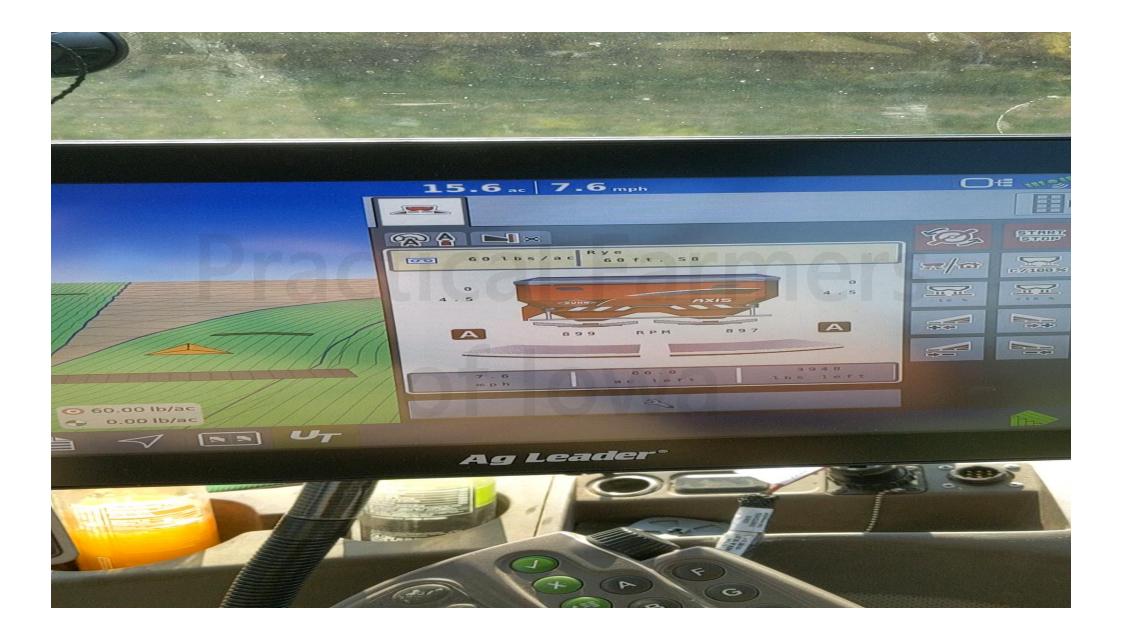
Kuhn Axis Stats

- Holds 8,000lbs of rye
 - Need a large frame tractor with suitcase weights
- 6,000 is most common (3 totes)
- Spread width from 30ft-120ft
 - o 60ft is my normal spread width for rye
 - Will use 90ft moving forward
 - Have spread at 120ft with rye
- Fully automated section control
- Hydraulic controlled spinners to control disc speed
- Full boarder spread

Computer setup







Axis Crop Stand







DJI T40 Drone



Drone Stats

- The first fully autonomous piece of equipment and it flys!
- 110lbs dry capacity
- Estimated 30 acres/hour at a 20lb seeding rate and good field size
 6.5 minute flight and battery level down to 30% or less (estimated)
- Much lower production when flying rates above 40lbs
- Change out a battery at every flight
- Production will depend on loading situation and turnaround time
- Needs software updates to get better accuracy after calibration

Licenses/Insurance

- Part 107 (Certificate to fly drones)
- Part 137 (Agricultural applicators certificate) or Farmitude
 - Part 44807 Heavy exemption above 55lbs
 - N# registration (work direct with FAA)
 - Handful of other exemptions needed to obtain 137
- Chemical Applicators license (if flying any chem)
 - Part A,B,and C
 - If only flying for yourself you currently need to take commercial applicators test.
 - Liability insurance if flying commercial (\$5,000+)
- Register with MNDOT and pay fees
- File NOTAM's when flying









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Contact Information



Mike Unruh

• 507-458-2977

Facebook: Unruh Cover Cropping

• Michael.unruh121@hotmail.com