Sunderman SM
FARM MANAGEMENT

Brent Larson

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Growing Non-GMO Corn & Soybeans

- Farm in Northcentral Iowa near Fort Dodge
  - Strip-till corn and no-till soybeans, mostly non-GMO

- Questioned value of traits

- Favorable yield reports from non-GMO
  - Drainage
  - Fertility, healthy crops have fewer issues
  - Hybrid placement
  - Scouting for rootworm & corn borer issues

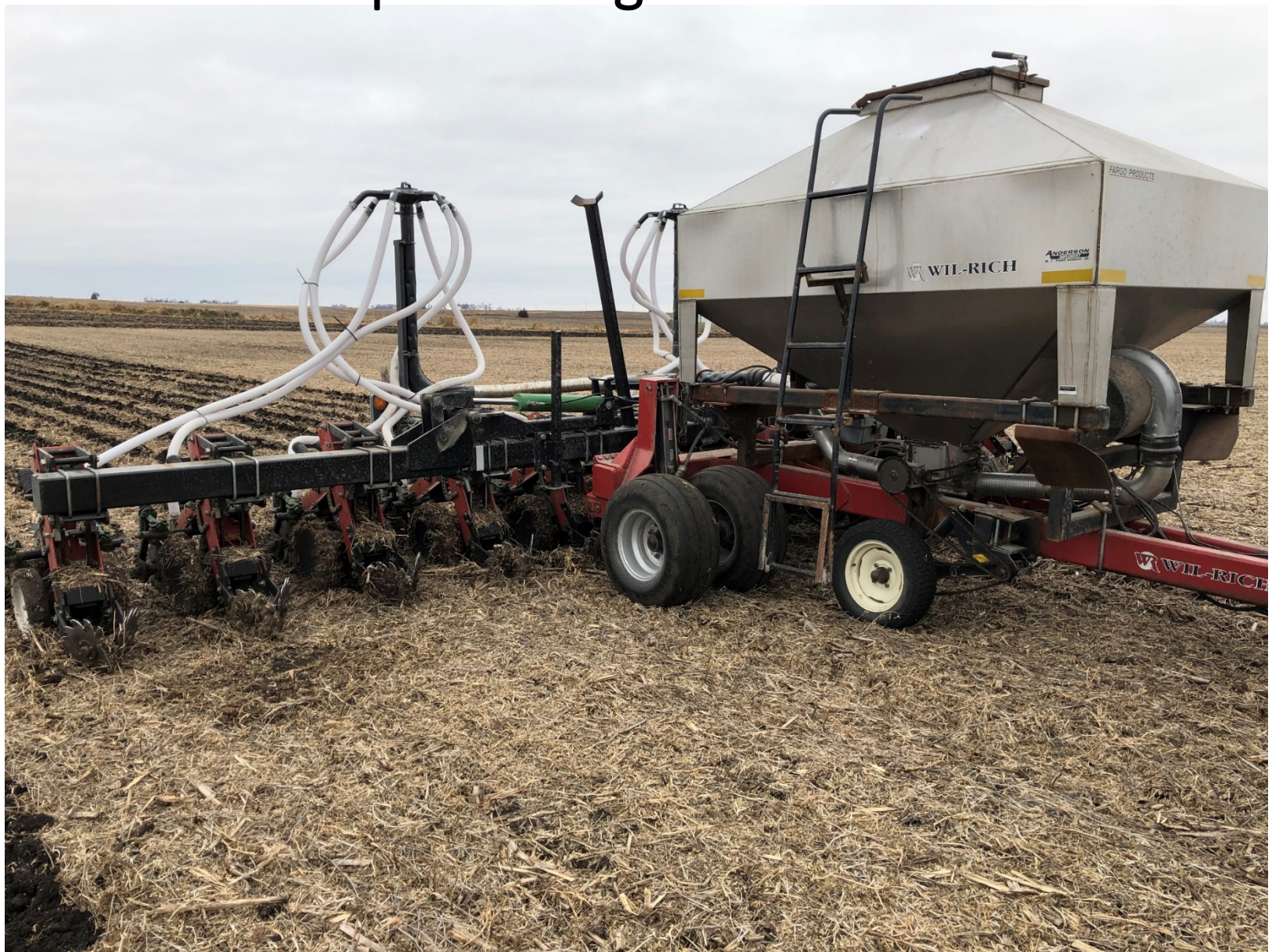
- GMO traits as a tool

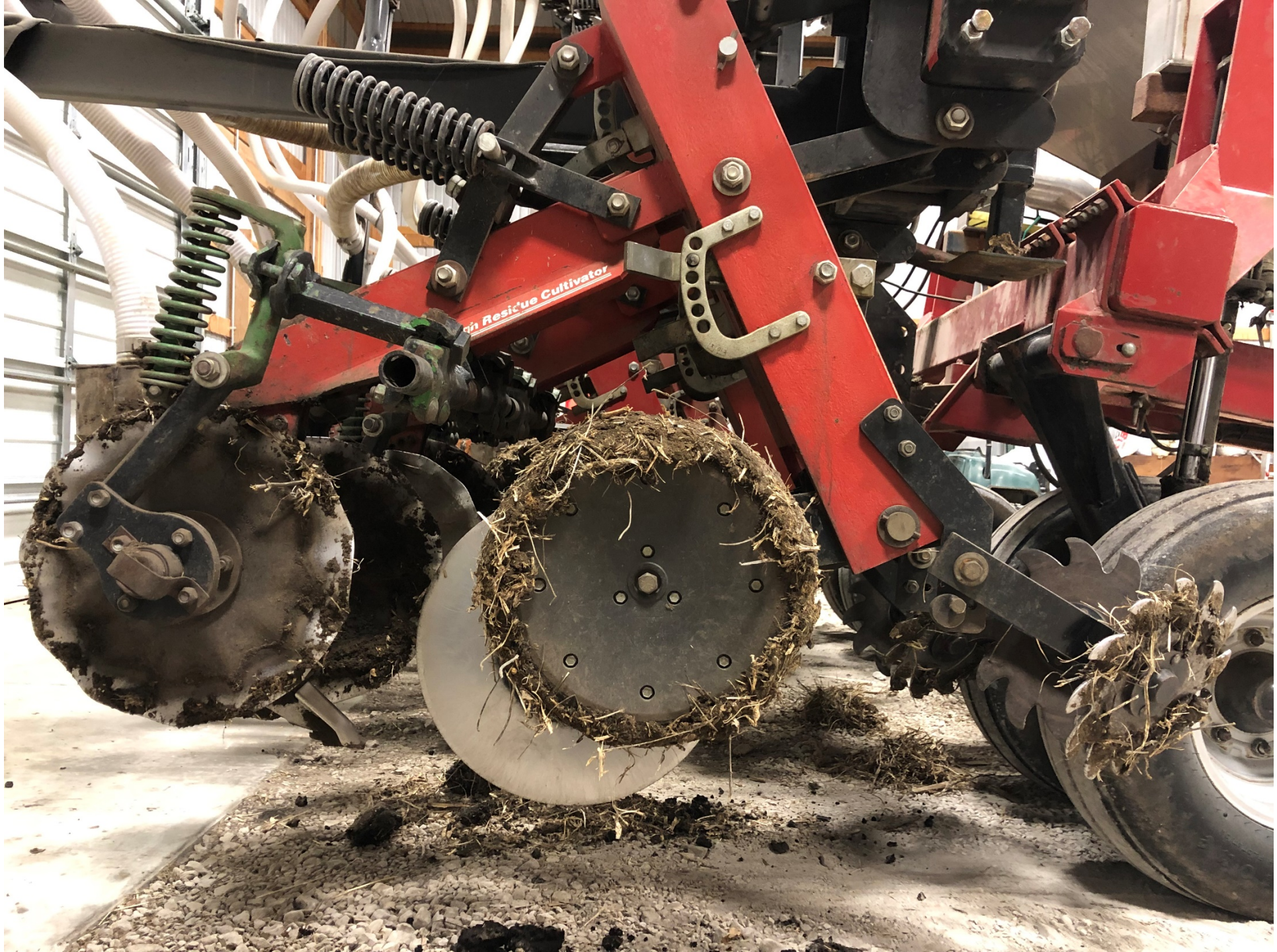
- “IP” or “Identity Preserved” Market, or Organic

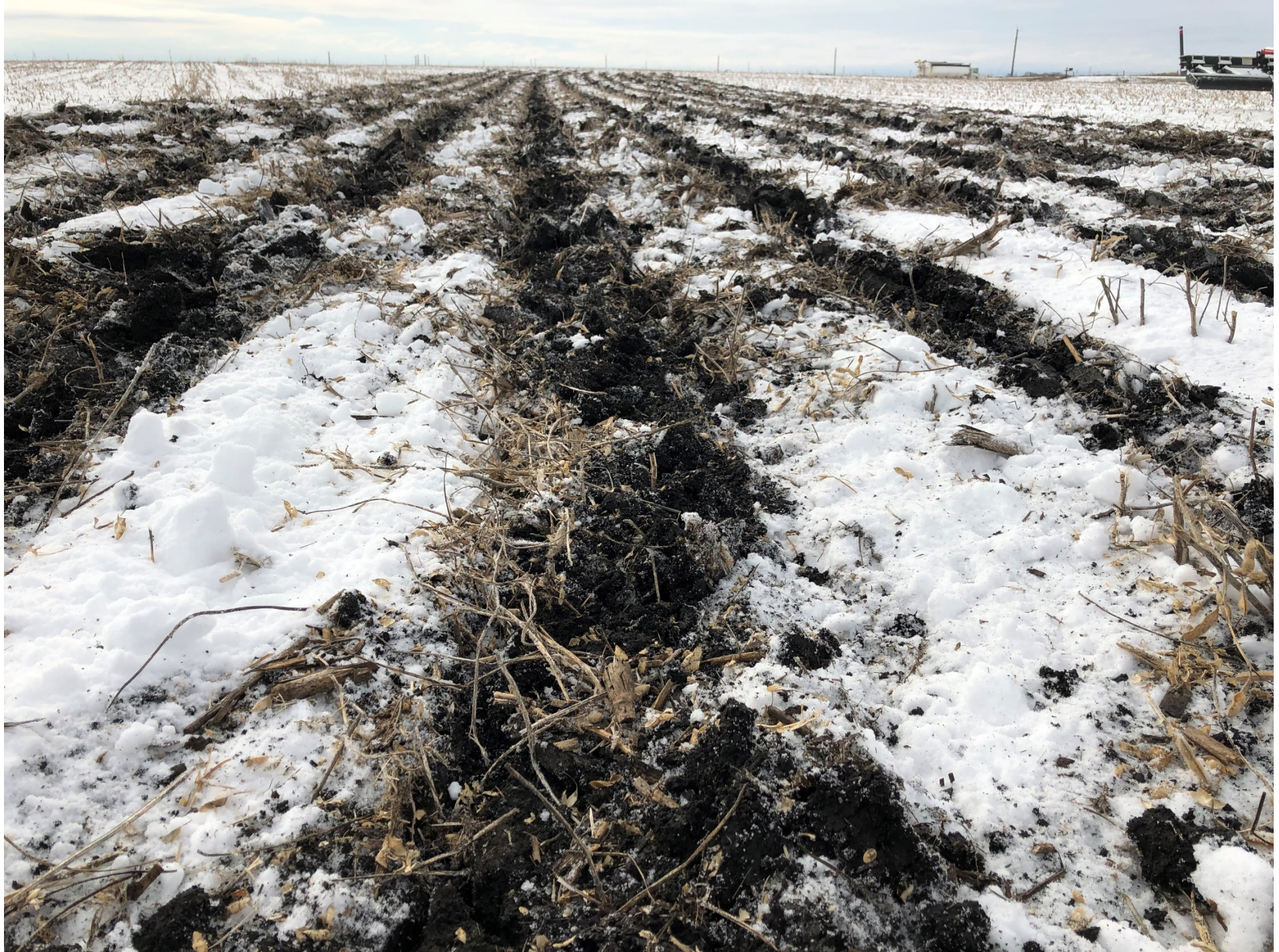
- Corn Herbicides
  - Glyphosate & Verdict before corn emerges
  - Armezon Pro before corn canopies
- Soybean Herbicides
  - Clethodim & Zidua Pro before soybeans emerge
  - Flexstar & First Rate before soybeans canopy

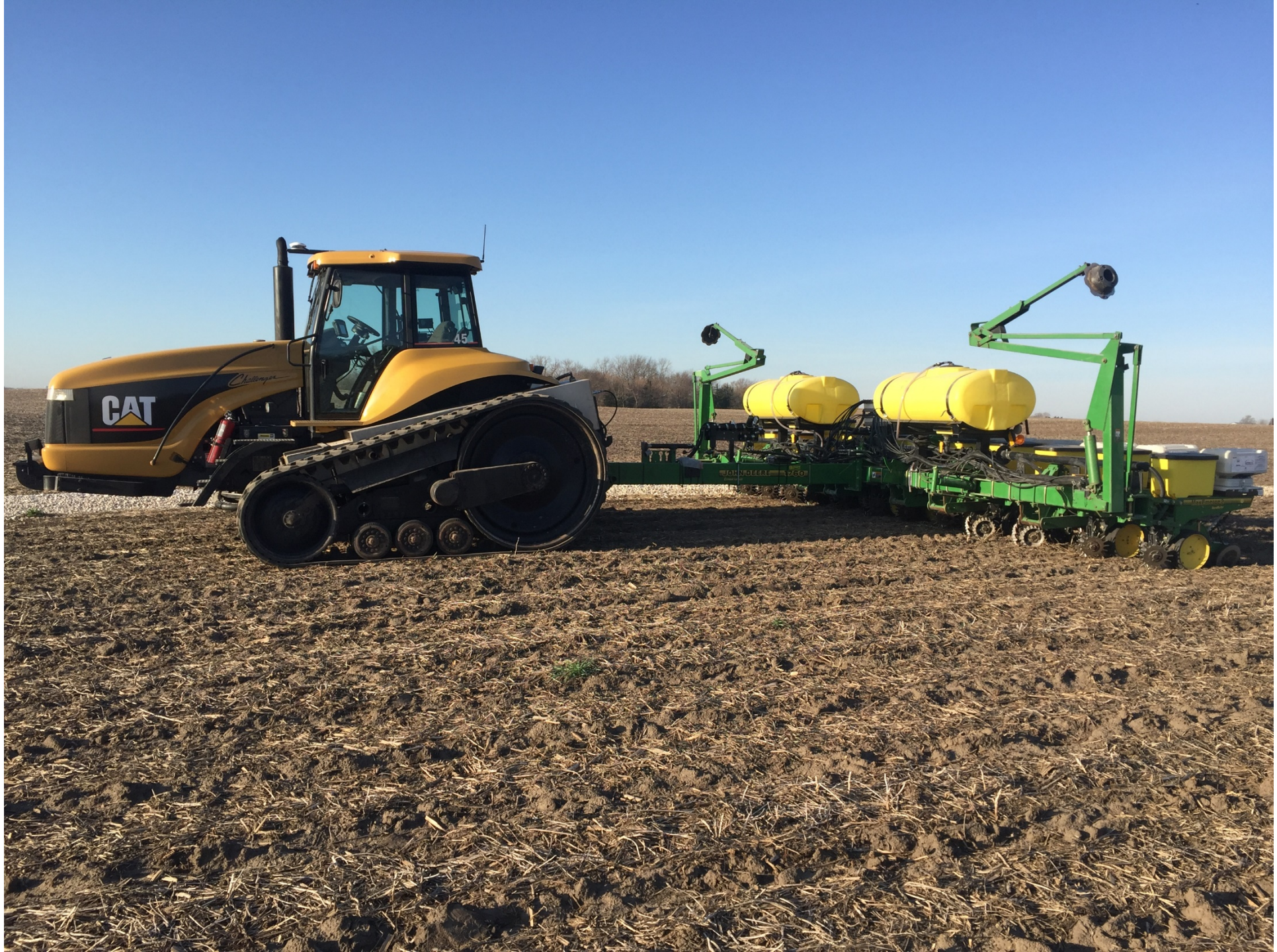
Strip-Till Rig

Modified Sukup 9400 High-Residue Cultivator



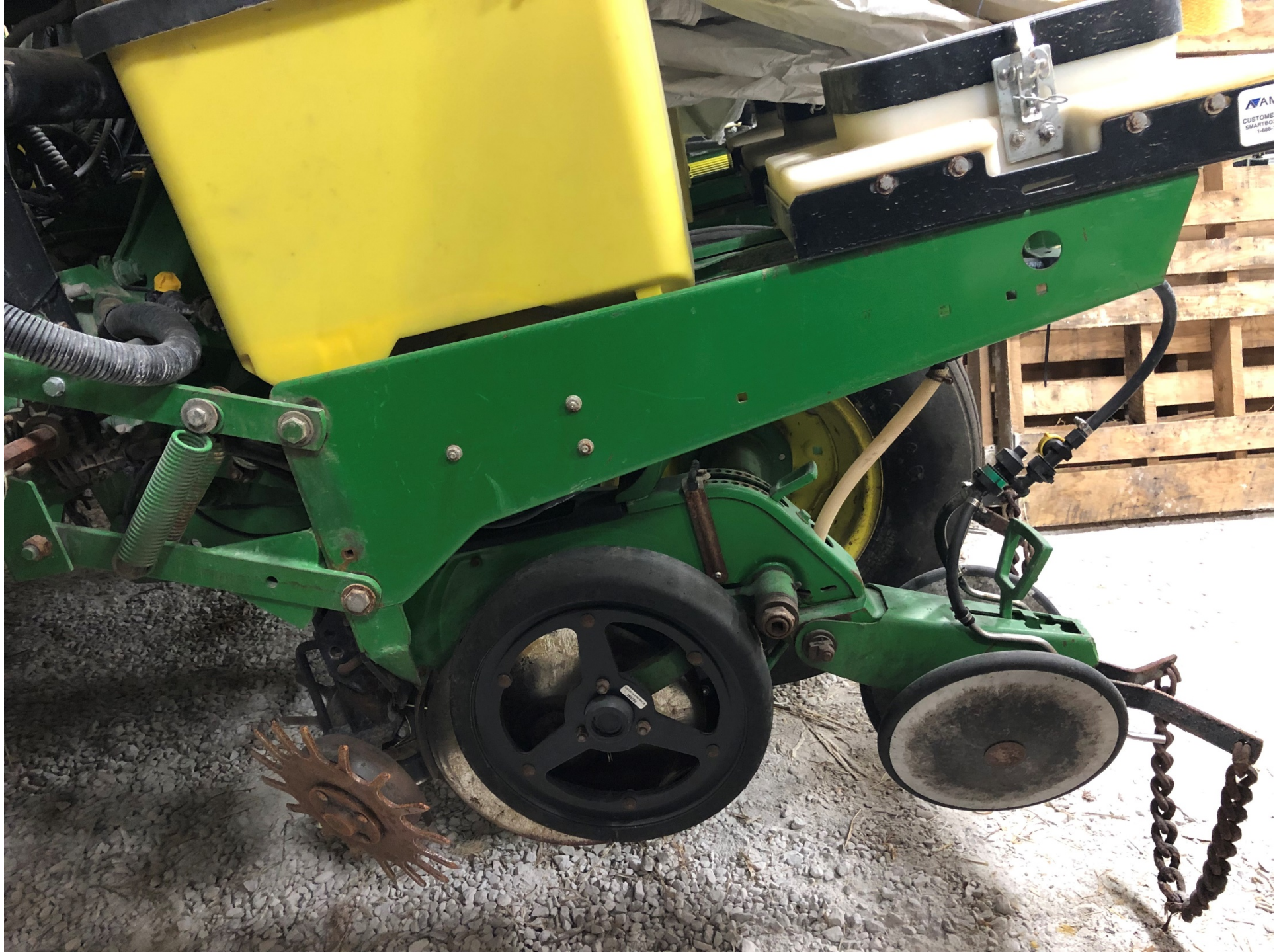

Residue Cultivator

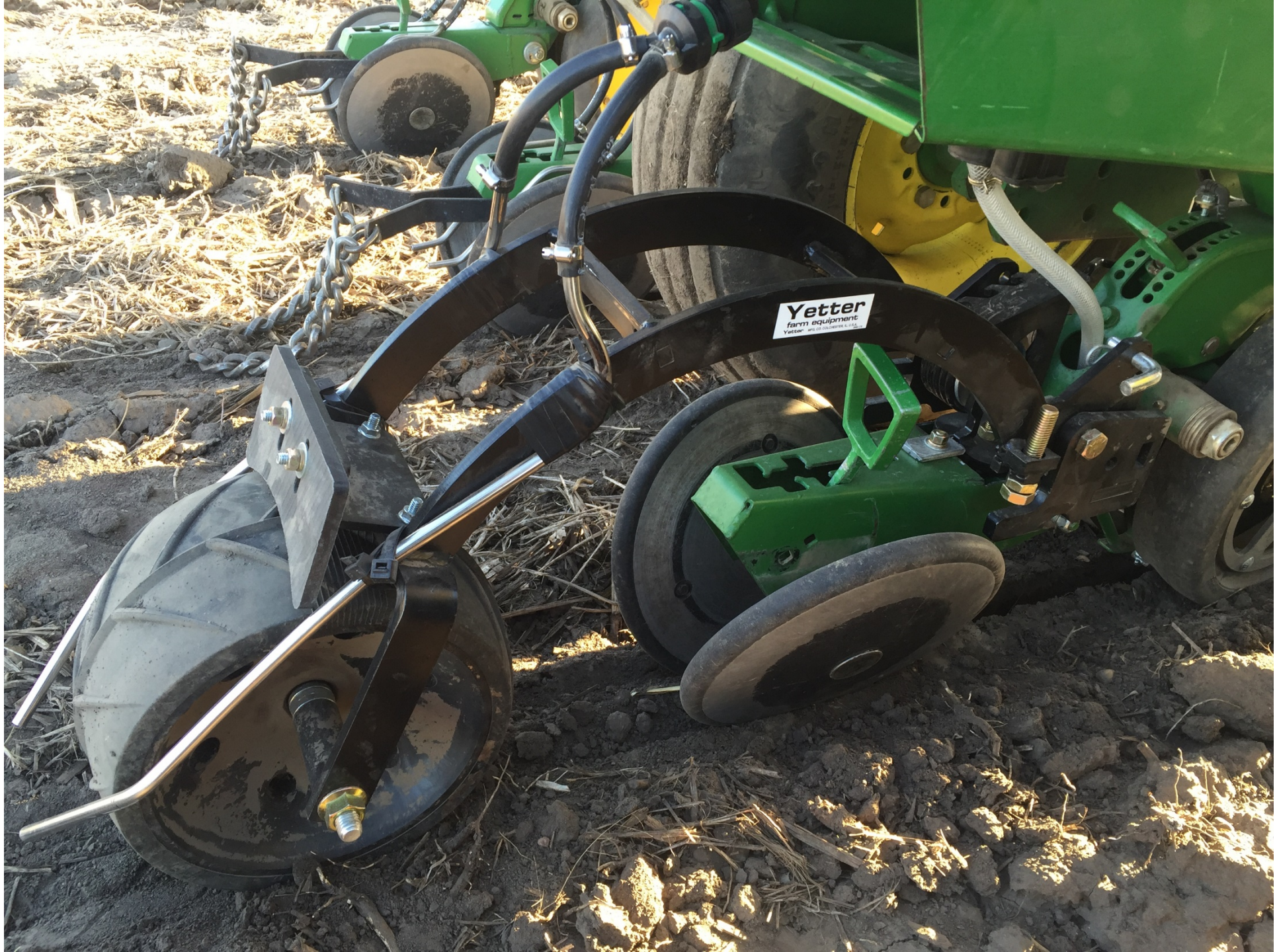



CAT
Challenger

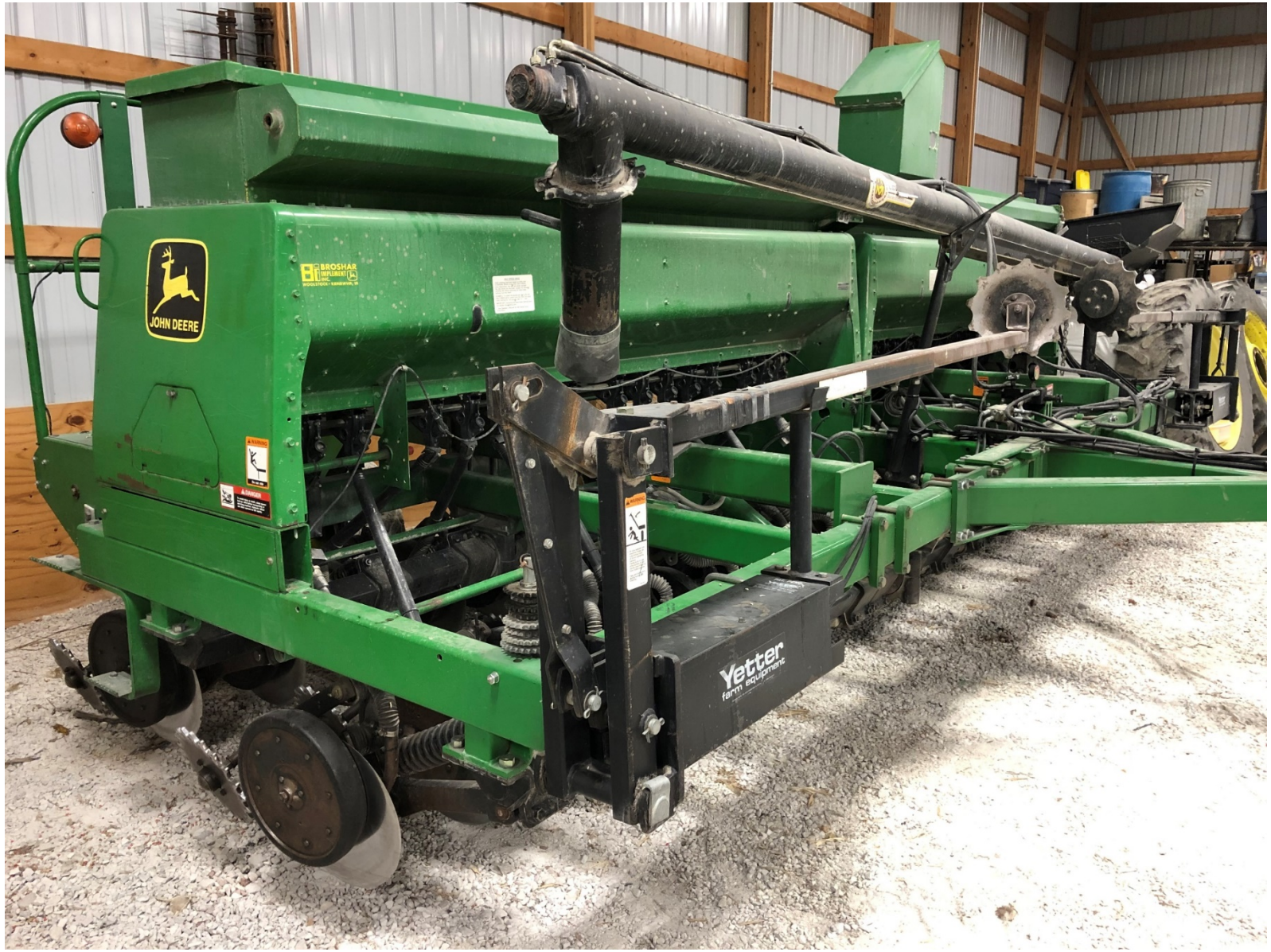
JD 1760 Planter Setup

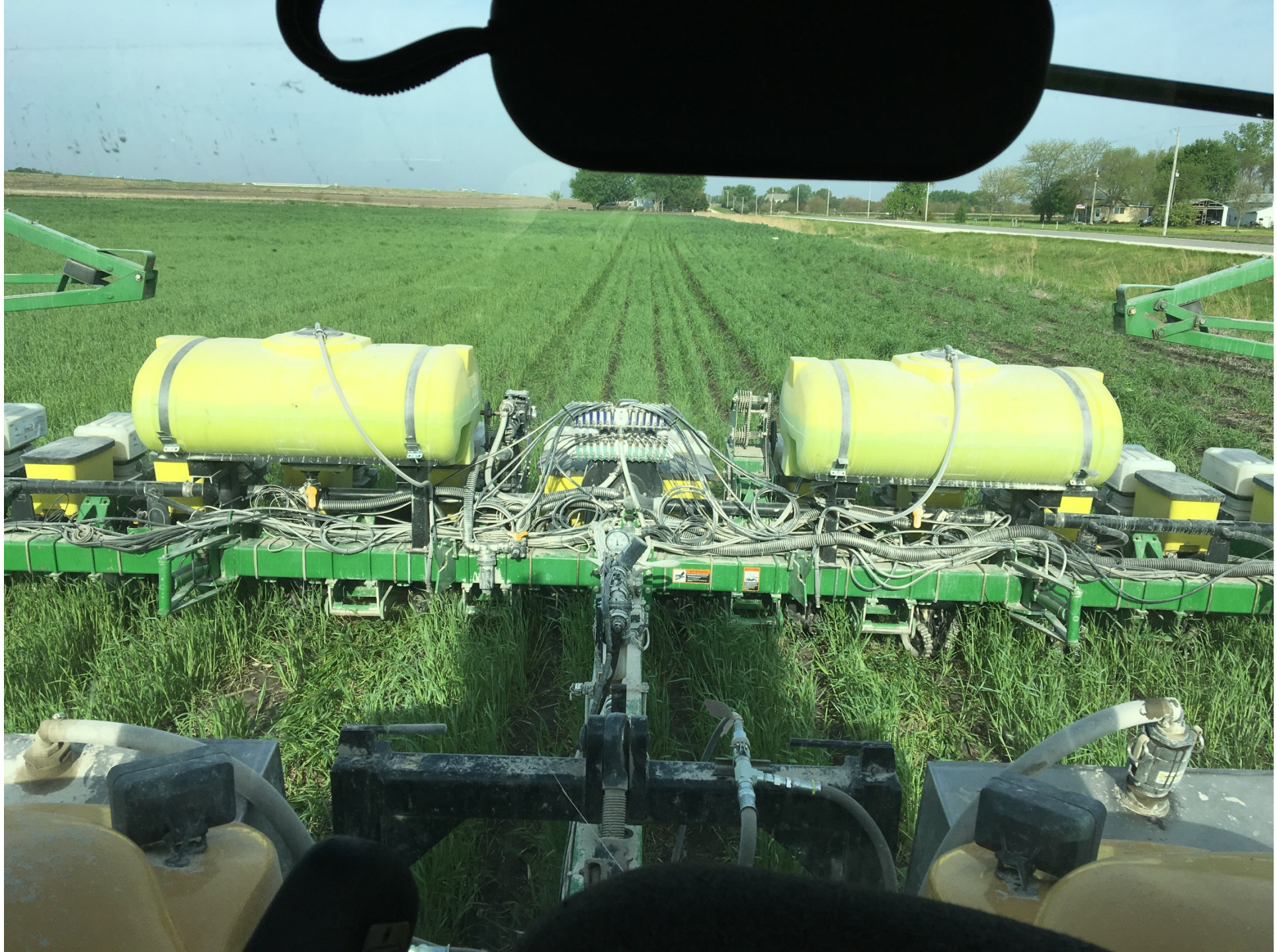
- 400 gallon liquid system to put liquid fertilizer in the furrow under the seed
  - Mounted on the planter
  - Ground driven pump, about 10 gallons per acre
- 550 gallon liquid system to put liquid fertilizer in a band behind the planter in a 2 x 0 x 2 setup. 2” to the side of the row, on the surface, on both sides of the row
  - Stainless steel tanks are on the tractor
  - Hydraulic pump, Raven 440 controller, 15 – 50 gallons/acre

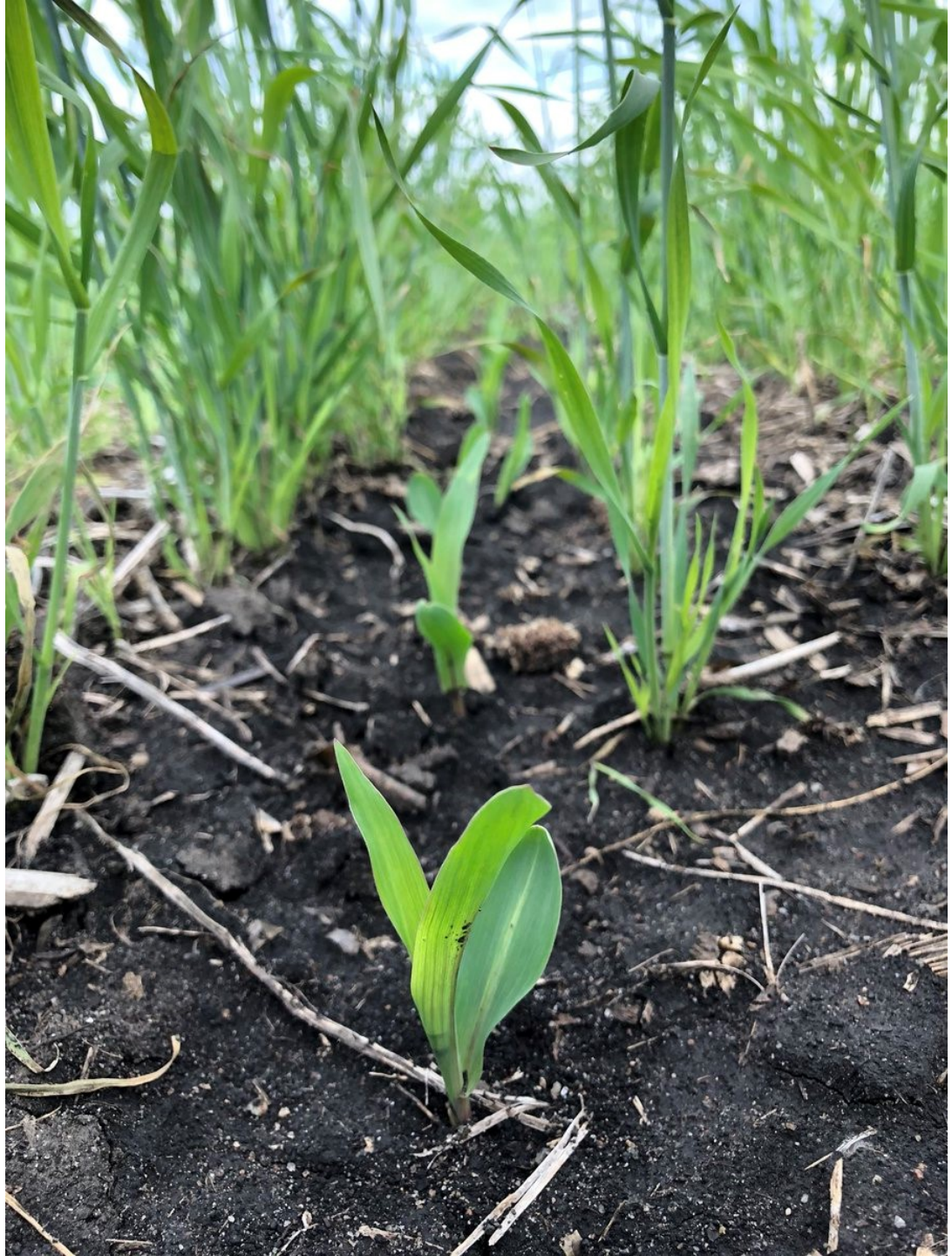


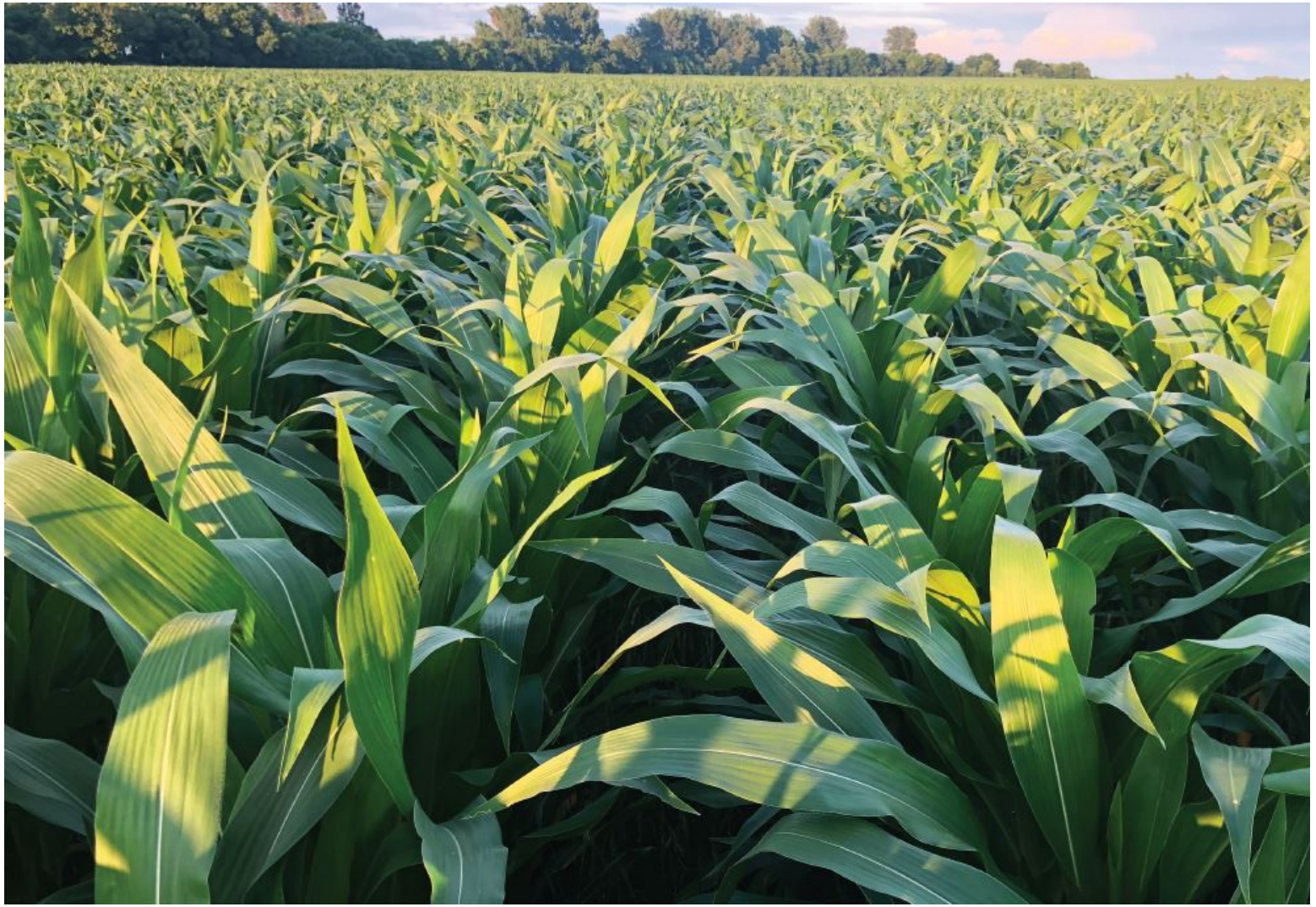

Yetter
farm equipment

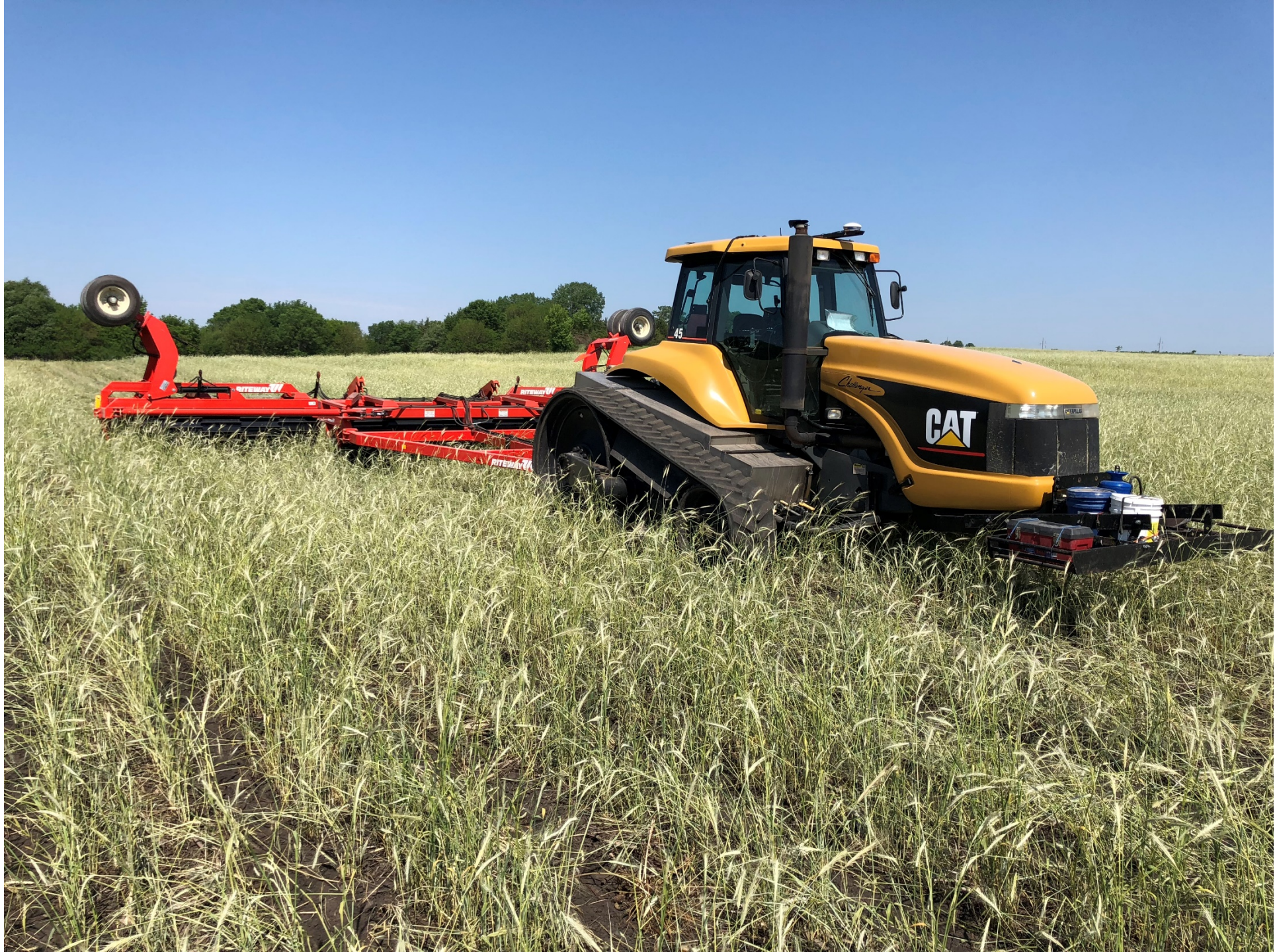
JD 750 Drill, 20’ wide, 7.5” spacing







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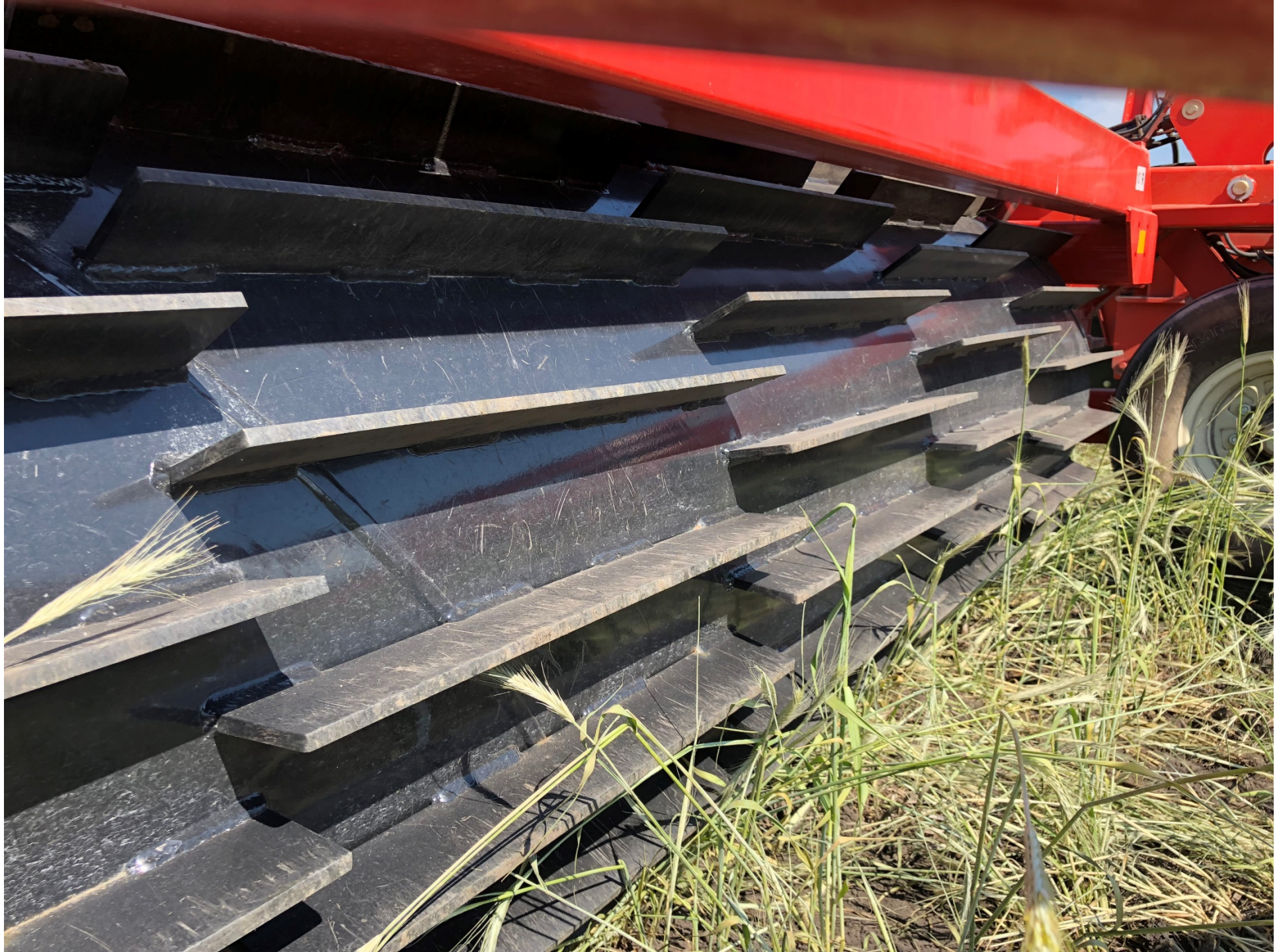

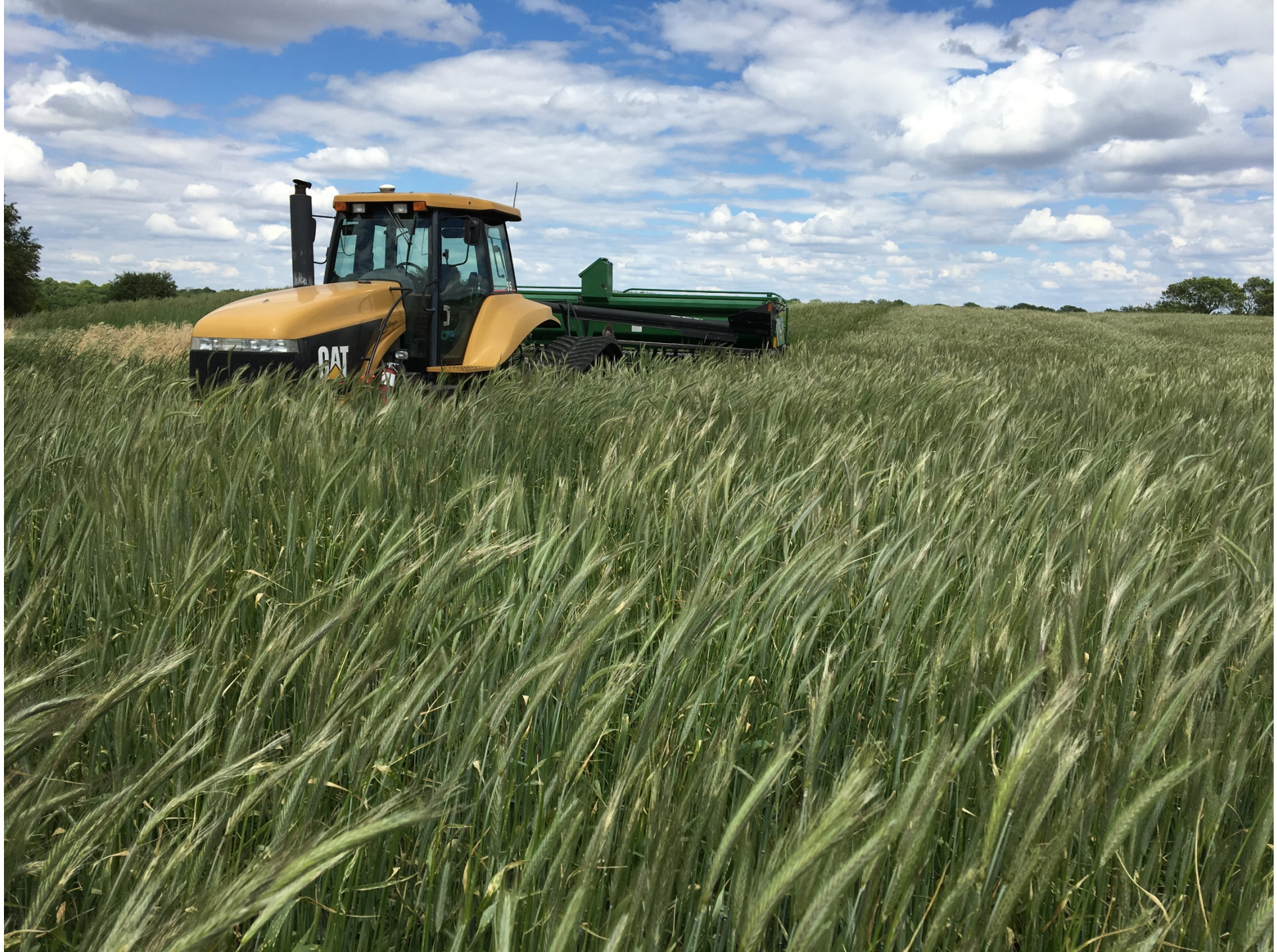
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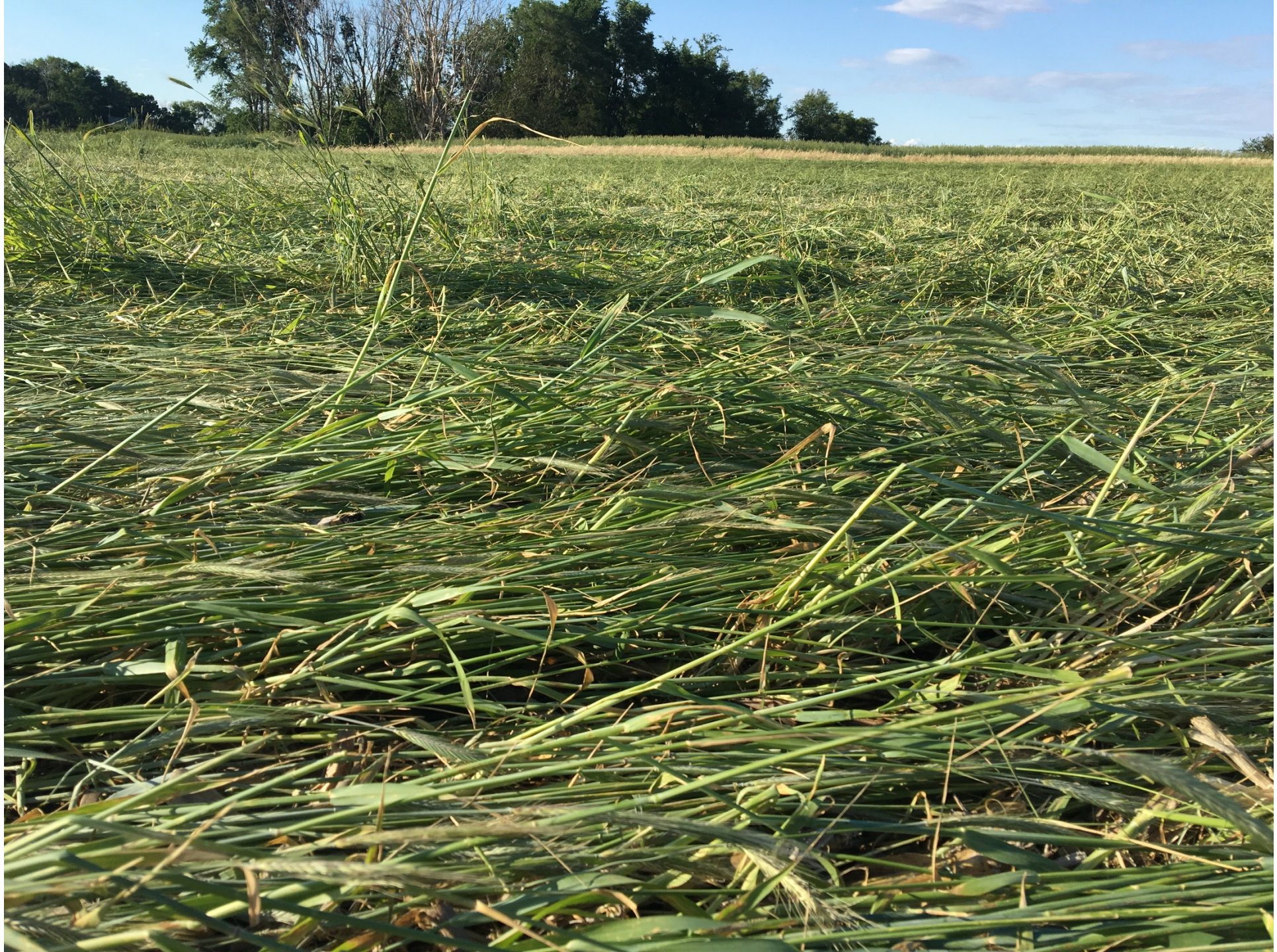

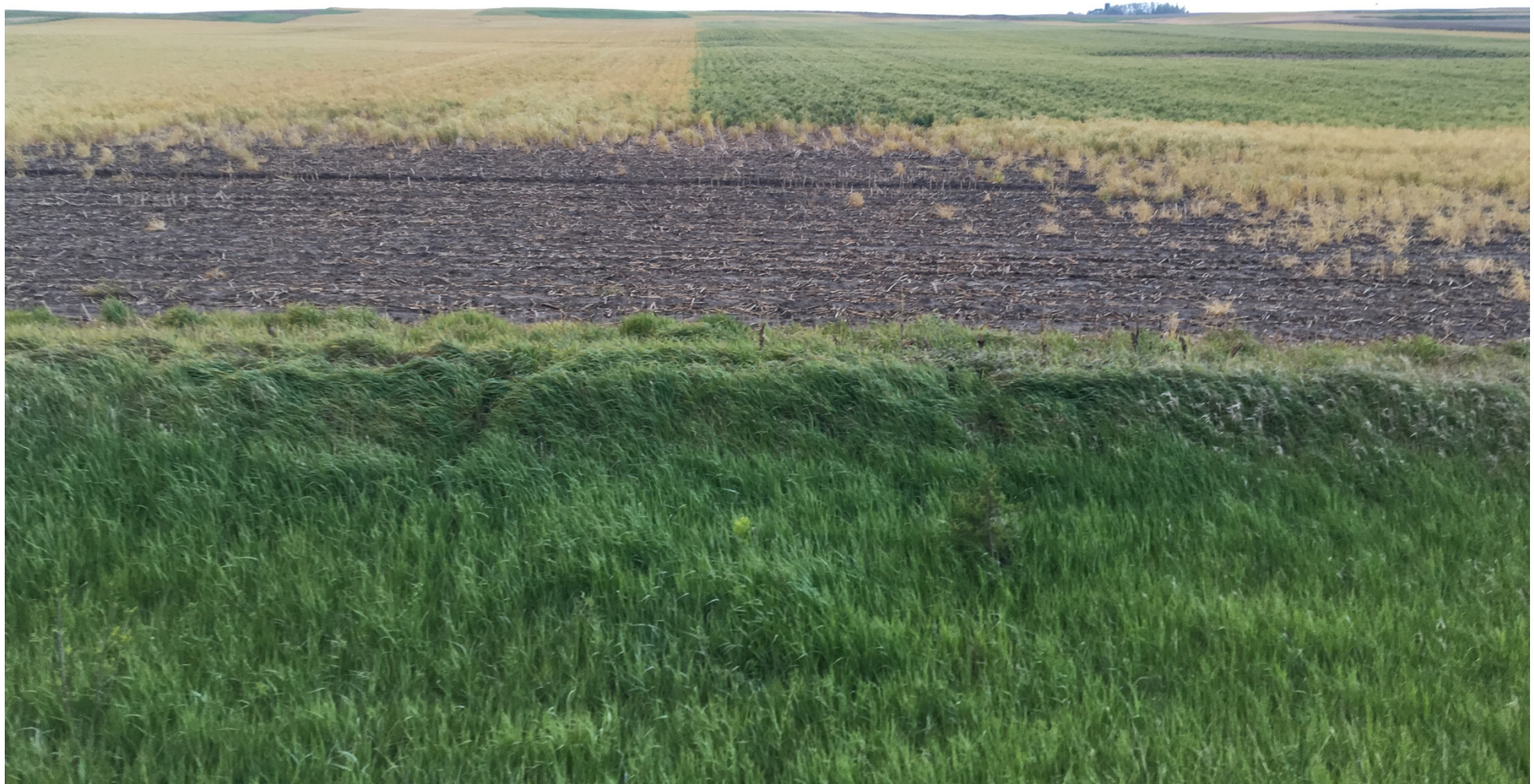

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Sunderman℠
FARM MANAGEMENT

Using Non GMO grains to Increase profit on Conventional Acres and as a tool to Transition to Organic

A & W Farms

Caleb Akin and Noah Wendt

Summary

- Our Journey with Non GMO grain production
- How
  - Production and marketing
- Budget
- Challenges/Opportunities
- The future of Non GMO on our farm

Our Journey with Non GMO grain production

- First year we did it to reduce production cost
- Second year we added Identity preserved to our grain marketing plan
- When we decided to transition to Organic production we were able to use it as a method to capture a grain premium to help income in the transition years
  - This still remains a good option for the transition acres
- Continues to be a commonly used production system in our operation to help lower cost of production
  - We feel like the cost savings are worth growing Non-GMO

Our Journey with Non GMO

- Diverse crop mixture adds harvest logistic challenges
  - We are finding out that our extremely diverse crop mixture is adding to harvest challenges and thus increasing our production costs
    - Has us considering growing the non GMO to save on production costs, but we may not sell them into IP market so we don’t have to segregate all the production
- Like many things in production ag it takes time to figure out what the right “combination” is for the operation

How do we grow and market Non GMO

- Began by selecting fields that would be good fits
  - Square, no waterways
  - Previously had good weed control
  - Strategically located closer to bins
- Did not sell for a premium in the first year
  - More concerned about how to grow the Non GMO crop
  - Figured we could cross the road of marketing for premium later
- Worked on grain premium the second year
  - Search out who is buying Non-GMO
    - Cargill in CR was our closest market and happened to have the best premium so we went with them

How do we grow and market Non GMO

- Setting up our infrastructure to handle the change in production methods
  - Staying on top of weed control
    - Importance of a good pre emergence herbicide program.
    - Timely scouting and spraying post emergence
    - Needed to purchase our own sprayer to make sure we had timely application
    - Realized that we may need to row crop cultivate to help with weed control
  - Became more dependent on crop rotation
    - Switched away from Corn on corn in the initial years of non GMO Corn production
      - No rootworm protection with the seed
    - Now that we have a better understanding of growing non GMO we are going back to more Corn on corn production and using an insecticide with the planter
      - Still seeing good yield results

How do we grow and market Non GMO

- Setting up our grain handling infrastructure to handle Non GMO
  - Coordinating bin space and location to accommodate storage of the crop
    - Most Non-GMO purchasers will buy on allocations only
      - Need to have good storage and get the grain dry so it stores well.
      - Need to take cost of carry into consideration
        - In certain cases you may be better off just selling it as regular grain and stopping your cost of carry
      - In addition to the premium we usually do see a better basis at the facilities that take non GMO crops to.
    - Shuffling and allocating bin space adds some challenges
  - Had to upgrade our semis and trailers to make sure we were more road worthy to make it a longer distance

Budget vs GMO

2020	COCNG	COC	COBNG	COB	BOCNG	BOC
Yield	185	185	195	195	50	50
Preharvest Machinery						
Disk	$16.94	$16.94	$0.00	$0.00	$16.94	$16.94
Pre-Plant Spray	$8.00	$8.00	$8.00	$8.00	$8.00	$8.00
Field Cultivate	$17.60	$17.60	$17.60	$17.60	$17.60	$17.60
Dry Spread	$6.00	$6.00	$6.00	$6.00	$6.00	$6.00
Plant	$25.14	$25.14	$25.14	$25.14	$23.00	$23.00
Post Plant Spray	$8.50	$8.50	$8.50	$8.50	$8.50	$8.50
Row Crop Cultivate	$0.00	$0.00	$0.00	$0.00	$17.00	$17.00
Side-dress Nitrogen	$12.00	$12.00	$12.00	$12.00	$0.00	$0.00
	$94.18	$94.18	$77.24	$77.24	$97.04	$97.04
Cash Rent						
Rent Payment-March 1	$115.00	$115.00	$115.00	$115.00	115	115
Rent Payment-Dec 1	$115.00	$115.00	$115.00	$115.00	115	115
	$230.00	$230.00	$230.00	$230.00	$230.00	$230.00
Seed, Chemical, Etc.						
Seed	$73.04	$106.38	$73.04	$85.11	$30.00	$53.00
ATS	$8.30	$8.30	$8.30	$8.30	$0.00	$0.00
Nitrogen-32%	$75.00	$75.00	$56.25	$56.25	$0.00	$0.00
P/K Fertilizer	$50.00	$50.00	$50.00	$50.00	$35.00	$35.00
Herbicide	$33.00	$31.00	$33.00	$31.00	$37.00	$34.00
Planter Insecticide	$21.00	$0.00	$0.00	$0.00	$0.00	$0.00
RA/Hail Insurance	$14.00	$14.00	$14.00	$14.00	$13.00	$13.00
	$274.34	$284.68	$234.59	$244.66	$115.00	$135.00
Interest on Pre-Harvest Variables	$14.09	$14.40	$12.38	$12.69	$9.42	$10.02
Harvest Machinery						
Combine	$39.60	$39.60	$39.60	$39.60	$38.61	$38.61
Haul to Elevator	$20.35	$20.35	$21.45	$21.45	$5.50	$5.50
	$59.95	$59.95	$61.05	$61.05	$44.11	$44.11
Total Expenses	$672.56	$683.21	$615.26	$625.64	$495.57	$516.17
Break-even per yield goal	$3.64	$3.69	$3.16	$3.21	$9.91	$10.32

Challenges and Opportunities

- Coordinating harvest and storage
- Getting a good enough premium
  - 10% of sales price seems to be the typical premium paid
    - We feel like this needs to be closer to 20-25% to make it worth marketing as IP
- Managing weed control
- Managing logistics hauling corn to processor
- Make sure that the IP purchaser is reputable for paying and taking allocations when they say they will
  - Another reason this drew us to Cargill to start out
- Pest issues
- Easier to manage input costs with this method of production

Challenges and Opportunities

- Keeps us on our toes to save money and always has us considering the next opportunity
- Clearly is a must in the organic production
  - This is the type of premium we enjoy collecting
- Doesn’t take many years to learn how to grow and market
- Helps make the lender more at ease

The Future of Non GMO in our Operation

- Continue to use Non-GMO for all of our organic transition acres
- Search out better premium markets
  - Would help allow us to continue to grow it for a premium
- Continue to grow Non GMO on our commercial acres
  - Mainly due to lower production costs
- Evaluate our operation comprehensively and determine how we can logistically make it continue to fit into our operation
  - There likely can be a win-win for decreased production cost and increased grain prices
    - Just need to find that right combination
      - Having organic in the mix adds to the challenges

Non-GMO
Corn and Soybeans

Non-GMO Corn Premiums

- Premium Range (Yellow Corn): .10-.30/bu above posted bid.
- Premium Range (White Corn): .10-1.50/bu above posted bid.
- Premium Range (Blue Corn): 2.00/bu above posted bid.

Non-GMO Corn Specs

- Barges:
  - Yellow Corn
    - US#2 Corn
    - 15.0% Moisture
    - 97% Non-GMO Purity
  - White Corn
    - US#1 Corn
    - 14.5% Moisture
    - 97% Non-GMO Purity
- Containers:
  - Yellow Corn
    - US#2 Corn
    - 14.5% Moisture
    - 97% Non-GMO Purity
- Feed:
  - Yellow Corn
    - US#2 Corn
    - 15.0% Moisture
    - 95% non GMO Purity

Non-GMO Food Corn Specs

- US#1 Corn (56-60 Test Weight)
- 14.0% Moisture
- 99.1% Non GMO Purity
- 5-10% Stress Cracks

Non-GMO Soybean Premiums

- Clear Hilums: 1.50 – 3.00/bu above posted bid.
- Black Hilums: 1.25 – 2.00/bu above posted bid.
- Brown/Buff Hilums: .50 – 1.50/bu above posted bid.
- Variety specific premiums.

Non-GMO Soybean Specs

- Food Grade
  - US#1 Soybeans
  - 13.0% Moisture
  - 99.1% Non-GMO Purity
- Feed Grade
  - US#2 Soybeans
  - 13.5%-14.0% Moisture
  - 99.1% Non-GMO Puri

- Dirty seed coats.
- Edging seed coats.
- Purple molding.
- 2nd crop soybeans/after wheat beans.
- Cracked seed coats/artificial drying.

Marketing

- Firm contract specs.
- Acres vs Bushel program.
- Next best market.
- Rejection.
- Purity testing.
- Lower moisture.
- Samples.

Questions?

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