

LEAD

LOCAL ECONOMIC & AGRONOMIC DECISIONS



Equipment Evaluated:

1795 ExactEmerge Planter

- Individual Row Hydraulic Downforce
- Central Tire Inflation System (CTIS)
- Frame Weight Distribution (FWD)
- Pneumatic Closing Wheels



Trial Site #1 (LEAD North)

Soil type: Clay Loam

Date Planted: May 24, 2024

Pop : 33,000 seeds/acre

Date Harvested: Oct 22, 2024

Avg yield : 151 bu/ac , Avg Moist : 19.7%

Trial Site #2 (Research 73)

Soil Type: Loam

Date Planted: May 20, 2024

Pop : 37,000 seeds/acre

Date Harvested: Nov 1, 2024

Avg yield : 195 bu/ac , Avg Moist : 19.1%

Trial Site #3 (LEAD South)

Soil Type: Loamy Sand

Date Planted: May 4, 2024,

Pop : 30,000 seeds/acre

Date Harvested: Oct 18, 2024 ,

Avg yield : 219 bu/ac , Avg Moist : 17.6%



Frame Weight Distribution – Scale Testing

FULL

70 Bu of seed & 400gal liquid starter

Main Frame @ 62 psi tire pressure

FWD PSI	0 psi	700 psi	2250psi
Right outer tire-	4040 LBS	4440 LBS	3500 LBS
Right inner tire-	5100 LBS	4700 LBS	3860 LBS
Left outer tire-	5260 LBS	4800 LBS	3780 LBS
Left inner tire-	5000 LBS	4600 LBS	3780 LBS

Right Wing @ 41 psi tire pressure

FWD PSI :	0 PSI	700 psi	2250 psi
Right outer tire	2220 LBS	2760 LBS	3900 LBS
Right Inner tire-	2120 LBS	2440 LBS	3100 LBS

Left wing @ 41 psi tire pressure

FWD PSI:	0 psi	700 psi	2250 psi
Left outer tire-	2060 LBS	2560 LBS	3740 LBS
Left inner tire-	2300 LBS	2640 LBS	3300 LBS

EMPTY

0 psi	700 psi	2250 psi
3800 LBS	3100 LBS	2440 LBS
4090 LBS	2500 LBS	2680 LBS
3940 LBS	2600 LBS	2640 LBS
4020 LBS	3620 LBS	2700 LBS

0 psi	700 psi	2250 psi
1840 LBS	2600 LBS	3480 LBS
2240 LBS	2900 LBS	3620 LBS

0 psi	700 psi	2250 psi
1900 LBS	2400 LBS	3580 LBS
2580 LBS	2860 LBS	3520 LBS



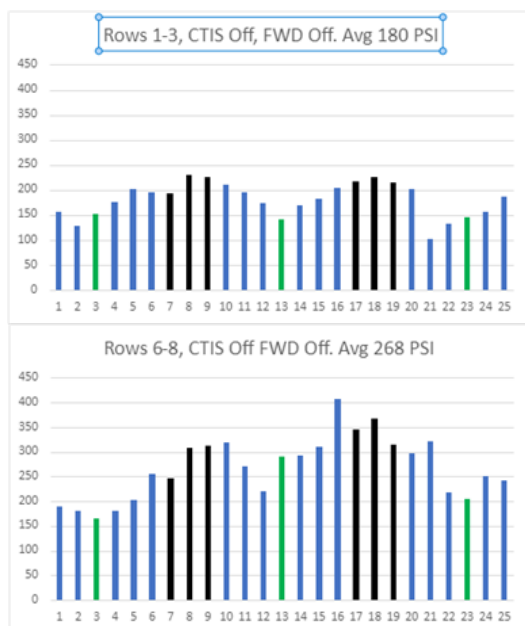
Compaction Testing

A soil compaction penetrometer was used to test the PSI of compaction every 3 inches across the planted corn rows. 1 – 12" deep.



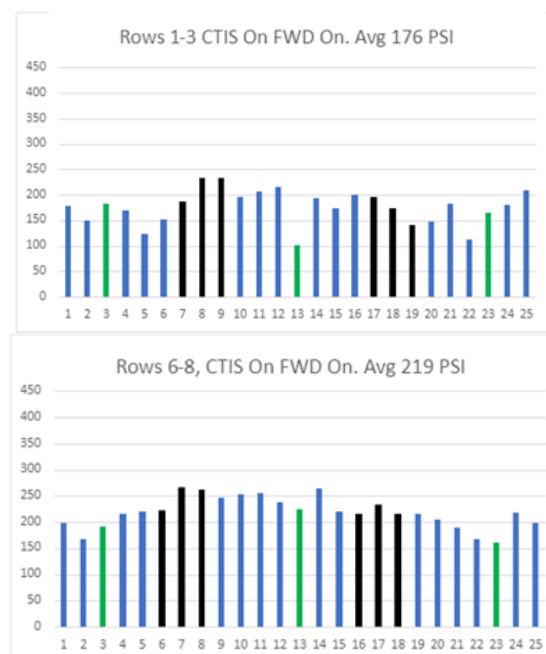
CTIS OFF , FWD OFF

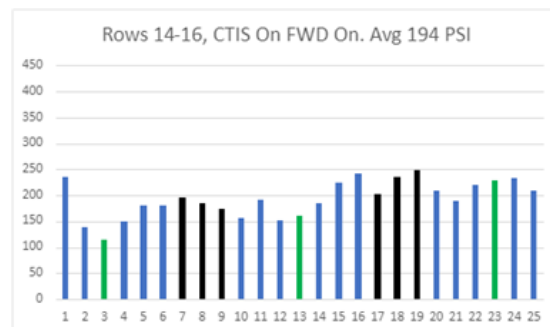
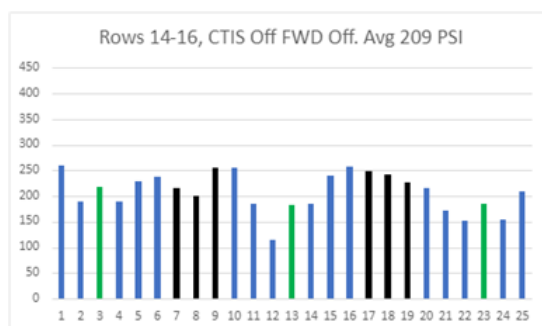
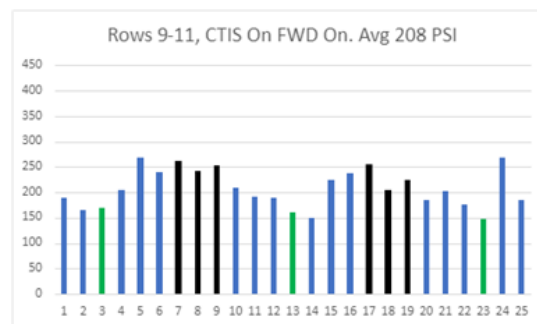
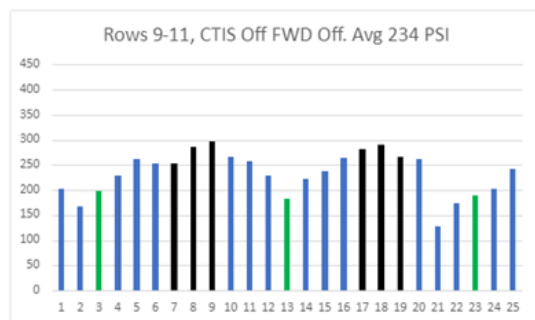
Average Compaction = 222 PSI



CTIS ON , FWD ON

Average Compaction = 200 PSI

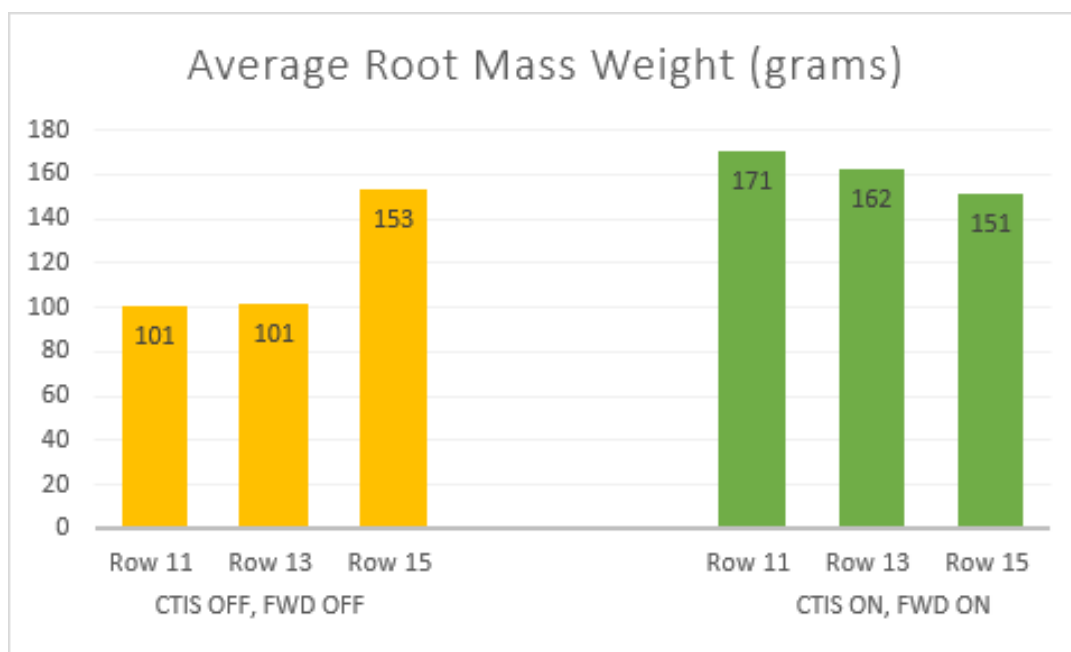




Root Mass Weight was also measured to determine overall health of plant.

Higher Root Mass Weight = Healthy Growing Roots

Lower Root Mass Weight = Stressed Roots from compaction



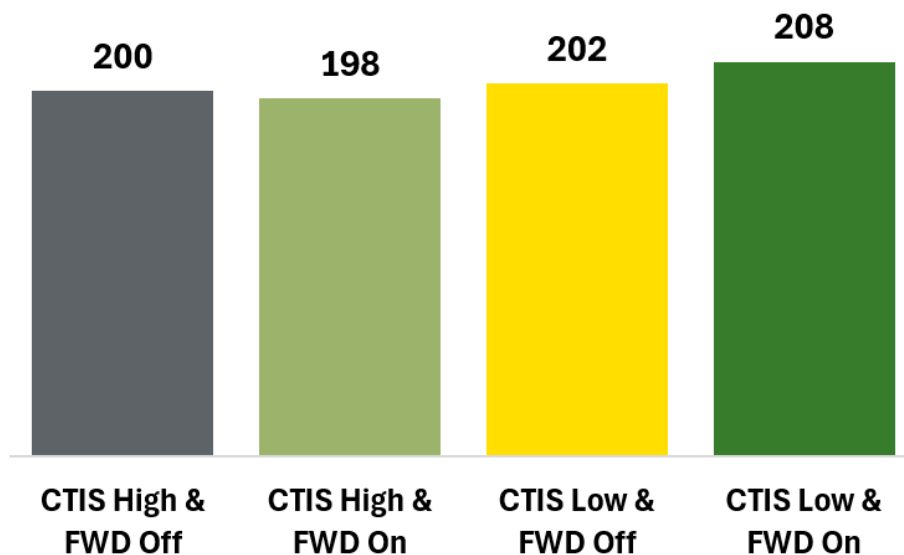
CTIS OFF , FWD OFF

CTIS ON , FWD ON



Final Yield Results

Impact of Planter Tire Inflation and Weight Distribution on Corn Yield (bu/acre)



Lbs/Ac	CTIS High FWD Off	CTIS High FWD On	CTIS Low FWD Off	CTIS Low FWD On
LEAD South	12325	12560	12931	13678
LEAD North	9415	9173	9101	9431
Research 73	13261	13000	13411	13338
AVERAGE	11667	11578	11814	12149
Wet Bu/Ac	CTIS High FWD Off	CTIS High FWD On	CTIS Low FWD Off	CTIS Low FWD On
LEAD South	220.09	224.29	230.91	244.25
LEAD North	168.13	163.80	162.52	168.41
Research 73	236.80	232.14	239.48	238.18
AVERAGE	208.34	206.74	210.97	216.95
Dry Bu/Ac	CTIS High FWD Off	CTIS High FWD On	CTIS Low FWD Off	CTIS Low FWD On
LEAD South	214.62	218.71	225.17	238.18
LEAD North	159.77	155.66	154.44	160.04
Research 73	226.71	222.25	229.28	228.03
AVERAGE	200.37	198.87	202.96	208.75