

**Project Title:** 2023 Clearfield winter wheat trial

**Objective:** Pre-commercialization demonstration of required 2x tolerance to Beyond herbicide with SY Clearstone as the genetic standard.

**Personnel:** C. Beiermann, S. Mondal, J. Pavelka, J. Torrion, D. Larson

**Summary:**

Ten varieties of winter wheat were planted on 11 October 2022 and harvested on 9 August 2023. The 10 varieties were paired with two different herbicide applied: one being conventional practice and the other with 2x the recommended rate of Beyond replicated three times.

Amongst treated entries with 2x Beyond, the average yield was 129.3 Bu/A with SY Clearstone 2CL the highest (156.5 Bu/A) and StandClear CLP the lowest (120.2 Bu/A). Average protein was 12.4% with MTCS20158 having the highest (13.2%) and MTCS22128 along with SY Clearstone 2CL the lowest (11.6%). Average test weight was 62.8 lbs./Bu with MTCS22128 having the highest (66.3 lbs./Bu) and SY Clearstone 2CL the lowest (62.6 lbs./Bu).

Amongst the conventionally treated entries, average yield was 137.3 Bu/A with MTCS22128 being highest (153.3 Bu/A) and MTCS20156 the lowest (120.9 Bu/A). Average protein was 12.1% with MTCS20158 the highest (12.6%) and SY Clearstone 2CL the lowest (11.1%). Average test weight was 62.9 lbs./Bu with StandClear CLP the highest (63.4 lbs./Bu) and MTCS22127 (62.3 lbs./Bu).

**Table 1.** Management Information

Seeding date:	10/11/2022 (284)	Field Location:	Y1
Seeding rate:	N/A	Harvest date:	8/9/2023 (221)
Previous crop:	Peas	Soil type:	Creston Sandy Loam
Herbicide:	12oz/a Imazamox + MSO 2% v/v +UAN 5% v/v, Cleansweep, Axial Bold	Tillage:	Conventional
Insecticide:	N/A	Soil Residual Nutrient (NO <sub>3</sub> <sup>-1</sup> , P, K lb/A):	103.5, 7, 123
Fungicide:	N/A	Nutrient fertilizer applied (N, P2O5, K2O lb/A):	143, 50, 90

**Table 2.** Agronomic Performance of entries treated with 2x Beyond

ID	INJURY	DTH (Days)	DTM (Days)	H (in)	TWT (Lbs./Bu)	PRO (%)	YLD (Bu/A)
MTCL19151	1.3	<b>157</b>	202.7	27.2	63	12.8	132.9
MTCL2010	0.2	<b>157</b>	203.7	29.8	62.8	13	128
MTCS20151	<b>2.7</b>	160	203.3	32.3	62.7	12.3	124.2
MTCS20156	1.3	160	203.7	29.7	62.7	12.8	128.2
MTCS20158	0.7	159	202	26.9	63.1	<b>13.2</b>	118.6
MTCS22127	1	156	200.7	32.7	62.4	12.5	127.5
MTCS22128	0.3	160	204.7	20.8	<b>63.3</b>	11.6	141.5
MTCS22129	0.7	160	205.3	32.1	62.7	12.1	114.9
StandClear CLP	0.3	158	<b>201</b>	31.9	63.2	12.2	120.2
SY Clearstone 2CL	0.3	159	203.7	<b>36.4</b>	62.6	11.6	<b>156.5</b>
Mean	0.9	158.6	203.1	31	62.8	12.4	129.3
CV	169.4	0.3	0.05	4.7	0.4	2.7	6.3
LSD	2.6	0.8	1.7	2.5	0.4	0.6	13.9
Genotype sig. (P-Value)	0.7	0.0	0.0	0.0	0.0	0.0	0.0

**Bold**= Highest value in column, DTH = days to heading, DTM= days to maturity, H= height, TWT= test weight, PRO= protein, YLD= yield

**Table 3.** Agronomic Performance of entries conventionally treated

ID	INJURY	DTH (DAYS)	DTM (DAYS)	H (in)	TWT (Lbs./Bu)	PRO (%)	YLD (Bu/A)
MTCL19151	0	<b>157</b>	204.3	30.3	63	12.3	144.6
MTCL2010	0	<b>157</b>	204.3	29.6	63	12.5	141.8
MTCS20151	0	160	203	32.3	62.7	12.1	141.5
MTCS20156	0	158	203	31.1	62.8	12.5	120.9
MTCS20158	0	159	203	29.5	63.2	<b>12.6</b>	134.4
MTCS22127	0	156	<b>201.3</b>	31.4	62.3	12	134.6
MTCS22128	0	160	202	31.8	63.2	11.4	<b>153.3</b>
MTCS22129	0	160	204.7	32.8	62.9	11.8	124.8
StandClear CLP	0	158	200.7	30.4	<b>63.4</b>	12.4	124.9
SY Clearstone 2CL	0	159	202	<b>34.7</b>	62.5	11.1	152.4
Mean	0	158.4	202.8	31.4	62.9	12.1	137.3
CV	0	0.6	0.8	5.3	0.3	0.35	4.2
LSD	0	1.5	2.9	2.9	0.3	0.7	10
Genotype sig. (P-Value)	0.0	0.0	0.1	0.0	0.0	0.0	0.0

**Bold**= Highest value in column, DTH = days to heading, DTM= days to maturity, H= height, TWT= test weight, PRO= protein, YLD= yield