

## Low Mu Tech Corn Trial

**Purpose:** Compare Low Mu Tech Against a Commercial Graphite/Talc Lubricant for Performance in Plantability, Emergence, Early Plant Growth, and Overall Yield in Corn.

**Methods:** Lubricants were applied to seed at the recommended rate of 1 cup per 80,000 kernel bags of seed. A CaseIH lubricant that is composed of 50% blend of graphite and talc was used. Plots were planted with an Almaco Seed Pro360 precision plot planter with the specifications mentioned below (Table 1). Drop population was recorded for each plot in which there was no difference detected between treatments. Planter units were cleaned between each lubricant treatment to prevent cross-contamination of lubricants. Herbicides were applied with a SpraCoupe 4660 at 10 gallon per acre. Plant emergence was documented daily per marked 20 foot of row. A corn plant was considered emerged when it reached true collar stage. Subjective vigor ratings were collected on 5/18 and 5/25, and were based on a 1 to 9 scale with 9 indicating the most vigor. Results for the 5/25 rating were not included due to lack of differences in treatments. Plant spacing was recorded between 20 plants in each plot, and spacing variability was determined by calculating the standard deviation for each plot. At 21 days after planting, 5 consecutive plants were cut at the base and weight recorded. Data was subjected to analysis of variance (ANOVA) via a mixed model in SAS JMP Pro 13. Replicated blocks were treated as random factors. Data residuals that were greater than 3 standard deviations from the mean were considered outliers and excluded from analysis. Means were separated using Fisher's protected LSD ( $\alpha=0.05$ ) when significance was detected.

**Table 1.** Agronomic Management Information for the Low Mu Tech Corn trial.

STUDY INFORMATION	
Hybrid	BECKS 5829A4
Planted	4/31/2018
Row Width	30"
Population	33,000 Plants/Ac
Tillage	Vertical Tillage
Herbicides	PRE: Outlook 16 OZ + Atrazine 2 LBS AI/A+ Callisto 6 OZ/A + Roundup PowerMax 16 OZ/A POST: Roundup PowerMax 32 OZ/A + Impact 0.5 OZ/A
Fertility	183-65-115
Plot Size	10' (W) X 60' (L)
Design	Randomized CBD
Replications	4
Soil Type	Putnam Silt Loam

### Result Comments:

There were no statistical differences were detected for any of the early data collected (Tables 2 & 3). Although it was not statistically significant, emergence for the graphite blend and Low Mu Tech products trended slightly higher than no lubricant (Figure 1). In regards to variation in

plant spacing, there were no statistical differences between treatments (Figure 2). Early plant growth trended higher with the Low Mu Tech lubricant compared to the other treatments. This trend was evident in both fresh weight and vigor ratings, but was not statistically significant. (Figure 3 & 4)

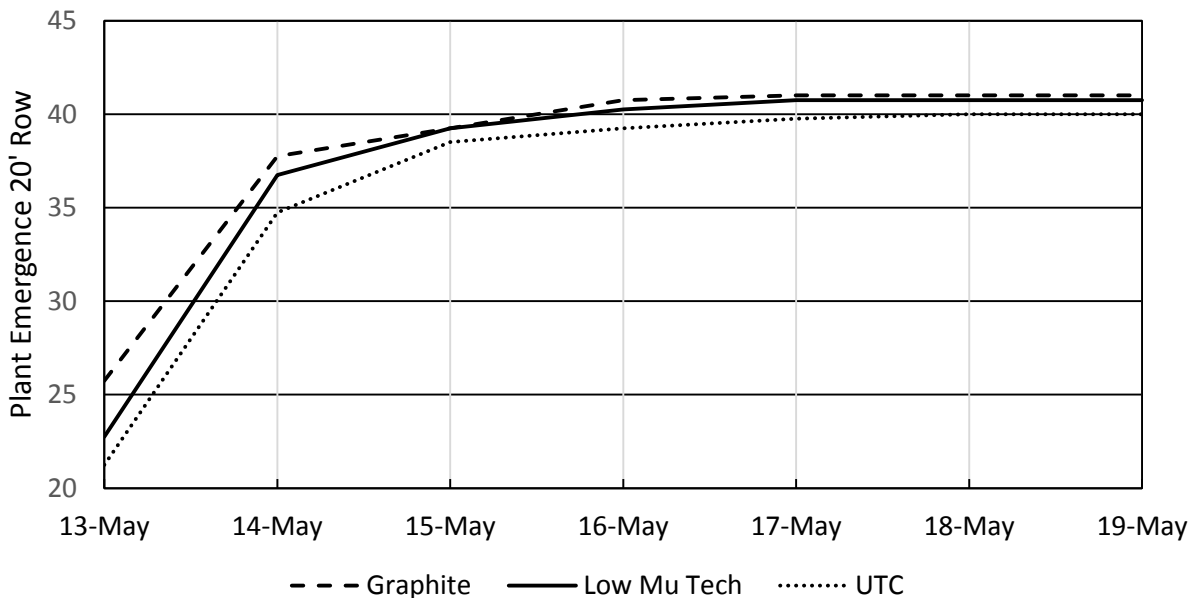
**Table 2.** Analysis of Variance for Corn Emergence Counts.

	Emergence 5/13	Emergence 5/14	Emergence 5/15	Emergence 5/16	Emergence 5/17	Emergence 5/18	Emergence 5/19
<b>Lubricant</b>	0.3534	0.1583	0.8143	0.2519	0.4768	0.5291	0.5291
<b>CV%</b>	17.7	5.3	4.8	2.8	3.5	3.0	3.0

**Table 3.** Analysis of Variance for Corn Collected Data Traits.

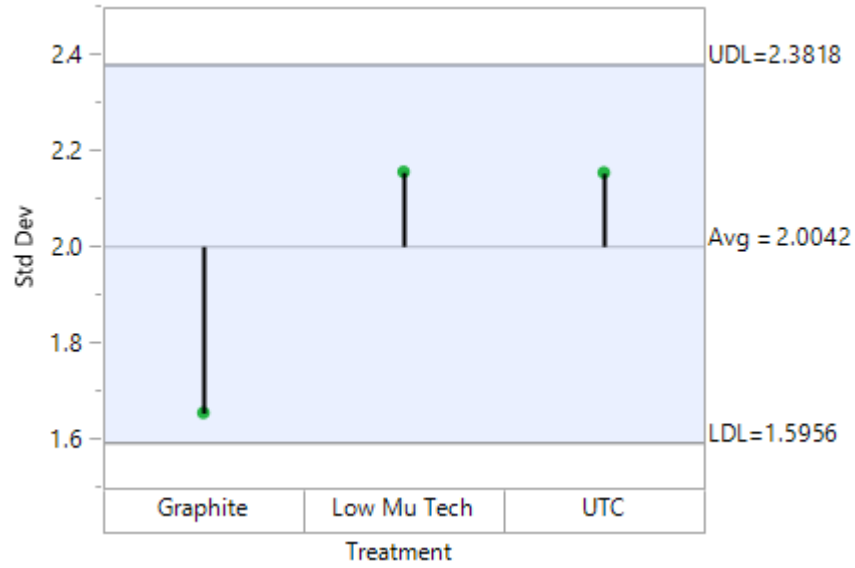
	Drop Pop	Vigor 5/18	5 Plant Weight	Plant Spacing (Inches)	Plant Spacing Standard Deviation
<b>Lubricant</b>	0.4267	0.178	0.9328	0.7023	0.1371
<b>CV%</b>	0.6	19.4	31.2	3.2	16.2

**Figure 1.** Emergence of Corn Over Time for Each Lubricant Treatment.

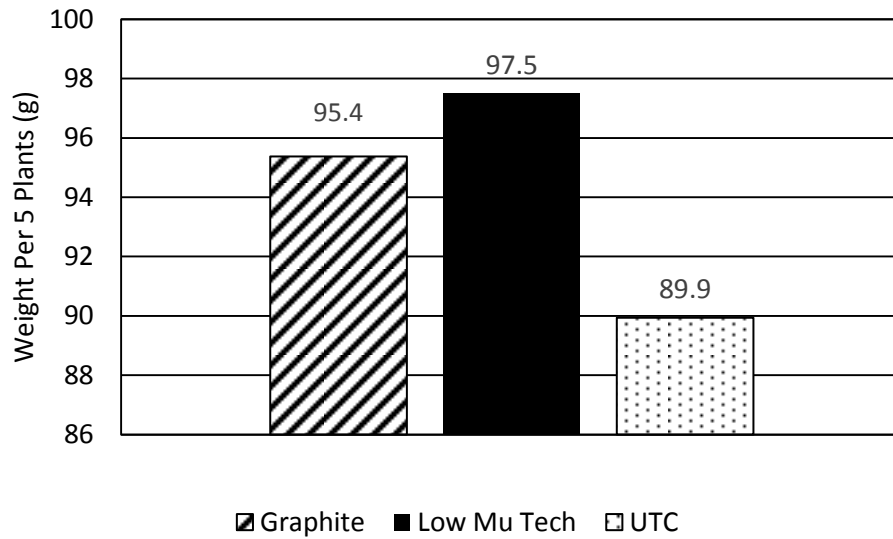


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**Figure 2.** Plant Spacing Stand Deviation Averaged For Each Lubricant Treatment.



**Figure 3.** 5 Plant Weight Averaged for Each Lubricant Treatment 21 Day After Planting.



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Figure 4. Average Vigor Rating For Each Treatment Recorded 5/18.

