



THE OHIO STATE
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COLLEGE OF FOOD, AGRICULTURAL,
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Effect of DUST Seed Lubricant on Soybean Stand, Vigor, and Yield Compared to a Traditional Seed Lubricant, 2018

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INTRODUCTION

The objective of this trial was to compare the effect of DUST seed lubricant (Low Mu Tech, Calamus, IA) to a traditional seed lubricant and untreated control on soybean stand, early season vigor, and yield.

FIELD PLOT DESIGN

This experiment was conducted during the 2018 growing season at two locations: Northwest Agricultural Research Station near Custar, Ohio, and Western Agricultural Research Station near South Charleston, Ohio. The trial was a randomized complete block design with four replications of treatments. Treatments included: 1) Seed treated with DUST seed lubricant, 2) Seed treated with a traditional lubricant (graphite), and 3) Seed treated with no lubricant (untreated control).

At both locations, the previous crop was corn, and soybean variety was 'Golden Harvest 3324X' treated with fungicide and insecticide. Soybean were planted in 15-inch rows at 140,000 seeds/acre. Each plot consisted of 7 rows of soybean with the center 5 rows harvested for yield.

METHOD OF CONDUCTING TRIALS

Entries in Trials. This experiment was funded by Low Mu Tech. Application protocol and product rate were provided by the company.

Statistical comparison. A least significant difference (LSD) was calculated for each trial location to compare the effect of seed lubricant seed treatment on soybean stand, early season vigor, and yield. Differences among treatments were calculated at the 90% level.

MEASUREMENTS AND RECORDS

Stand count is reported as the number of 1,000 plants per acre. Stand counts were conducted for each plot and location in the spring approximately 7, 14, and 21 days after planting.

Early season vigor. Normalized difference vegetation index (NDVI) was used to measure early season vigor ("greenness") using a handheld Greenseeker sensor approximately 7, 14, and 21 days after planting.

Yield. Soybeans were harvested when the moisture content was between 8 and 13% and yields reported in bushels per acre at 13% moisture.

Table 1: Site Descriptions

	Northwest Wood Co.	Western Clark Co.
Soil	Hoytville	Strawn
Soil pH	6.2	5.8
Soil Test P-Mehlich (ppm)	26	14
Soil Test K (ppm)	178	79
Plant date	May 29	May 13
7 days after planting	June 7	May 21
14 days after planting	June 12	May 29
21 days after planting	June 21	June 4
Harvest date	Oct. 3	Oct. 18

RESULTS

There was no statistically significant difference among the treatments for stand, vigor, and grain yield. Untreated seed performed equally well to seed treated with DUST seed lubricant and the graphite seed lubricant.

DATA USE. Inclusion of entries in this trial does not constitute an endorsement of a particular entry by the Ohio State University, Ohio Agricultural Research and Development Center, or Ohio State University Extension.



Table 2. Effect of DUST Seed Lubricant on Soybean Emergence, Vigor, and Yield Compared to a Traditional Seed Lubricant at the Northwest Agricultural Research Station, 2018.

Treatment Name	Soybean stand (1000 plants/acre)			NDVI			Yield (bu/acre)
	7 DAP	14 DAP	21 DAP	7 DAP	14 DAP	21 DAP	
DUST	134.3 A	142.5 A	138.5 A	0.15 A	0.24 A	0.28 A	72.5 A
Graphite	130.8 A	136.5 A	133.8 A	0.16 A	0.25 A	0.26 A	71.5 A
Untreated control	126.8 A	144.3 A	141.5 A	0.15 A	0.25 A	0.27 A	73.9 A
LSD(0.10)	14.0	16.1	7.9	0.01	0.01	0.02	4.1

Same letters within a column indicates no statistically significant difference at the 90% confidence level.

Table 3. Effect of DUST Seed Lubricant on Soybean Emergence, Vigor, and Yield Compared to a Traditional Seed Lubricant at the Western Agricultural Research Station, 2018.

Treatment Name	Soybean stand (1000 plants/acre)			NDVI			Yield (bu/acre)
	7 DAP	14 DAP	21 DAP	7 DAP	14 DAP	21 DAP	
DUST	73.5 A	118.8 A	107.8 A	0.17 A	0.18 A	0.16 A	55.4 A
Graphite	82.0 A	116.0 A	101.0 A	0.16 A	0.18 A	0.17 A	51.9 A
Untreated control	76.5 A	98.0 A	102.5 A	0.16 A	0.17 A	0.16 A	55.0 A
LSD (0.10)	10.5	21.5	14.5	0.01	0.01	0.02 A	3.9

Same letters within a column indicates no statistically significant difference at the 90% confidence level.