



## Aeration and Harrow Trial 2021 – Three Meadows and Zylstra Lake Pasture Composition and Compaction Results

**Table 1.** Mean  $\pm$  standard deviations (SD) for aeration treatments

Observation	No aeration	With aeration	$p^1$
<b>Three Meadows Farm</b>			
Bare ground, %	2.75 $\pm$ 2.91	2.54 $\pm$ 3.27	0.900 <sup>†</sup>
Grass cover, %	96.7 $\pm$ 3.51	97.3 $\pm$ 3.90	0.590 <sup>†</sup>
Legume cover, %	32.1 $\pm$ 20.3	36.0 $\pm$ 24.9	0.4624
Forb cover, %	0	0.292 $\pm$ 1.04	0.229 <sup>†</sup>
Soil penetration (in.)	17.1 $\pm$ 5.33	16.7 $\pm$ 4.17	0.9906
<b>Zylstra Lake Preserve</b>			
Bare ground, %	3.75 $\pm$ 2.89	2.96 $\pm$ 4.02	0.422 <sup>†</sup>
Grass cover, %	89.8 $\pm$ 8.91	83.5 $\pm$ 15.0	0.066083
Legume cover, %	55.2 $\pm$ 17.7	46.0 $\pm$ 16.4	0.08153
Forb cover, %	9.33 $\pm$ 10.8	7.42 $\pm$ 8.04	0.5519
Soil penetration (in.)	22.5 $\pm$ 5.61	24.6 $\pm$ 5.09	0.107 <sup>†</sup>

**Table 2.** Mean  $\pm$  standard deviations (SD) for harrow treatments

Observation	No harrow	With harrow	$p^1$
<b>Three Meadows Farm</b>			
Bare ground, %	2.97 $\pm$ 3.07	2 $\pm$ 3.03	0.691 <sup>†</sup>
Grass cover, %	96.9 $\pm$ 3.54	97.2 $\pm$ 4.07	0.596 <sup>†</sup>
Legume cover, %	30.5 $\pm$ 23.7	41.2 $\pm$ 18.8	0.1150
Forb cover, %	0.16 $\pm$ 0.88	0.13 $\pm$ 0.34	0.862 <sup>†</sup>
Soil penetration (in.)	17.57 $\pm$ 5.43	16.2 $\pm$ 3.93	0.5077
<b>Zylstra Lake Preserve</b>			
Bare ground, %	3.62 $\pm$ 3.24	3.08 $\pm$ 3.76	0.577 <sup>†</sup>
Grass cover, %	<b>83.1 <math>\pm</math> 15.2</b>	<b>90.2 <math>\pm</math> 8.27</b>	<b>0.038113*</b>
Legume cover, %	50.8 $\pm$ 17.6	50.4 $\pm$ 17.8	0.93573
Forb cover, %	8.04 $\pm$ 8.55	8.71 $\pm$ 10.5	0.8722
Soil penetration (in.)	24.5 $\pm$ 5.34	22.7 $\pm$ 5.42	0.186 <sup>†</sup>

<sup>1</sup>The probability value associated with the treatment in the analysis of variance.

\*For observations where a significant treatment effect ( $p \leq 0.05$ ) was indicated, values are highlighted in bold and denoted with an asterisk. Values that are not available are indicated as NA.

<sup>†</sup>Probability values calculated using PERMANOVA for distributions requiring non-parametric tests.



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### **Trial Methods**

8/28 – 9/4/21 – Aerated and chain drag harrowed

11/17/21 – Sampled forage functional percent cover at both sites

11/17/21 – Measured soil penetration at Three Meadows Farm site

2/21/22 – Measured soil penetration at Zylstra Lake Preserve site

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### **Citation**

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