



## Aeration and Harrow Trial 2021 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

### **Acknowledgements**

*This research trial was conducted in collaboration with Adam Greene and Sarah Pope of Oak Knoll Farm, Friday Harbor, WA. Access to Zylstra Lake Preserve was provided by San Juan County Conservation Land Bank. This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2017-38640-26913 the Western Sustainable Agriculture Research and Education program under subaward number FW18-021. USDA is an equal opportunity employer and service provider. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.*

### **Citation**

Walton Andrews and Brook Brouwer. 2022. *Aeration and Harrow Trial 2021 Pasture Composition and Compaction Results*. Washington State University Extension San Juan County Trial Report. <https://extension.wsu.edu/sanjuan/agriculture/ag-research-reports/>