

DISH update

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2024-08-26

Summary

No missing data or outliers, ready for analysis.

This document summarizes all forage yield data from 2024 collected using 1x 0.5 meter length of row cut at 3 inches above soil surface. See below for link to data.

Forage yields collected on 6May were when nodes were just emerging and not greater than 1 inch above the soil surface. Yields for 6May were low, averaging 0.6 Mg ha, which is not abnormal in a kernza stands first production year (Hunter et al. 2020). Forage yields collected on 23May were when nodes were between 2-6 inches above the soil surface. This timing was past the typical cutoff of not forage harvesting after nodes are above 3 inches from the soil surface, but this trial wanted more time for any effects of the spring herbicide application to accumulate before forage harvest. Yields from the forage harvest on 23May were more typical, averaging 2.3 Mg ha of dry matter.

Water content averaged 40% for 6May harvest and 80% for the 23May harvest. This data is likely not useful. The determination methods were different for the different harvest dates, which explains differences in variance. Water content was likely overestimated on 23May due to dew and moisture in the field during sampling. Anecdotally, sample water content felt the same on both harvest dates.

Key information

DISH = Debalin Isidor Herbicide Trial. Trial tests kernza response to certain herbicides

[DISH drive folder](#)

[DISH master with data and plot map](#)

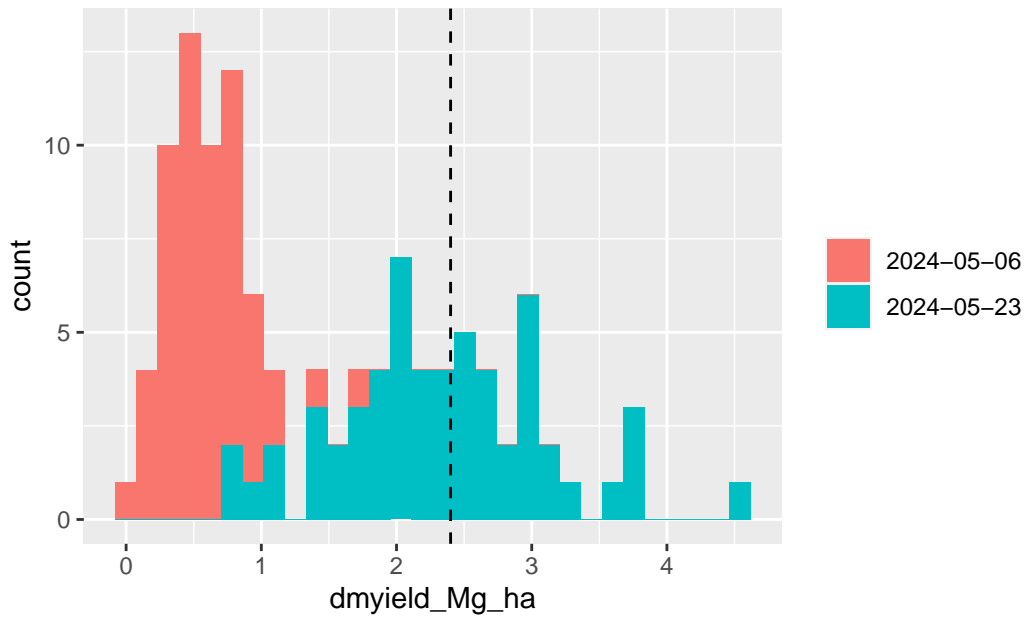
[DISH data processing files](#)

Forage yield

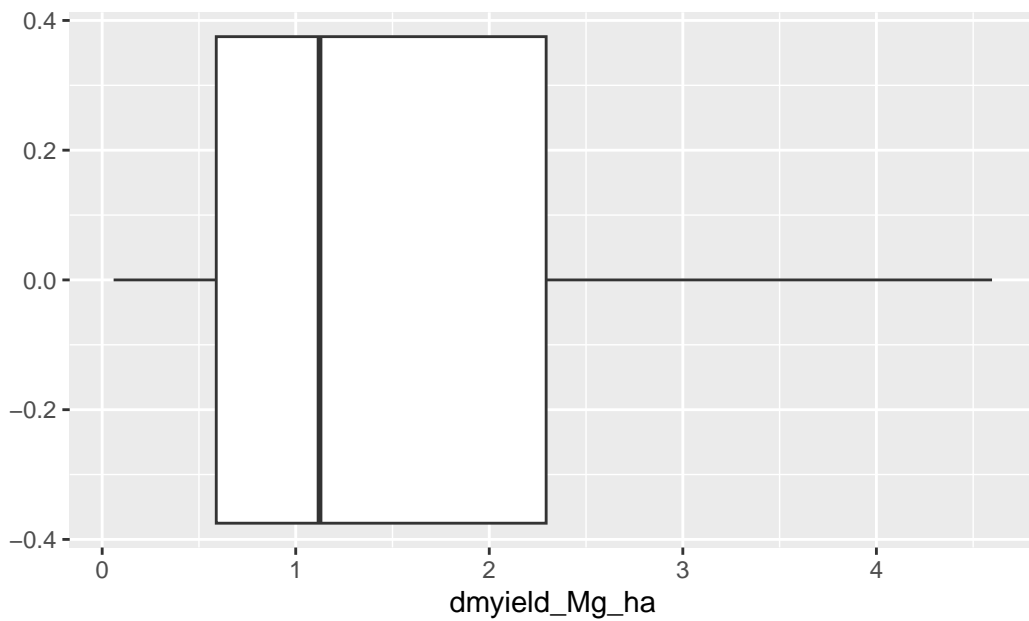
| harvest_date | timing | forage_yield_DM_Mg_ha |
|--------------|--------|-----------------------|
| 2024-05-06 | fall | 0.60 |
| 2024-05-23 | spring | 2.34 |

| herbicide | forage_yield_DM_Mg_ha |
|-----------|-----------------------|
| axial xl | 1.66 |
| control | 1.61 |
| dual | 1.41 |
| everest | 1.50 |
| finesse | 1.23 |
| outrider | 1.56 |
| prowl | 1.39 |

| plot | treatment | dmyield_Mg_ha |
|---------------|------------------|-----------------|
| Min. :101.0 | Length:114 | Min. :0.05911 |
| 1st Qu.:210.2 | Class :character | 1st Qu.:0.58946 |
| Median :360.0 | Mode :character | Median :1.12309 |
| Mean :360.0 | | Mean :1.46629 |
| 3rd Qu.:509.8 | | 3rd Qu.:2.29380 |
| Max. :619.0 | | Max. :4.59746 |

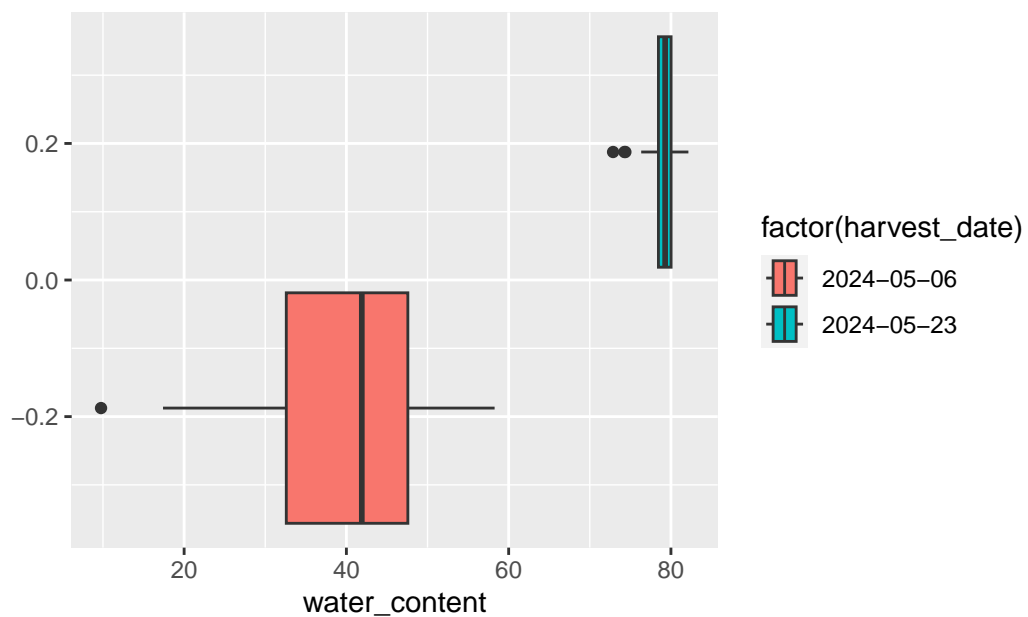
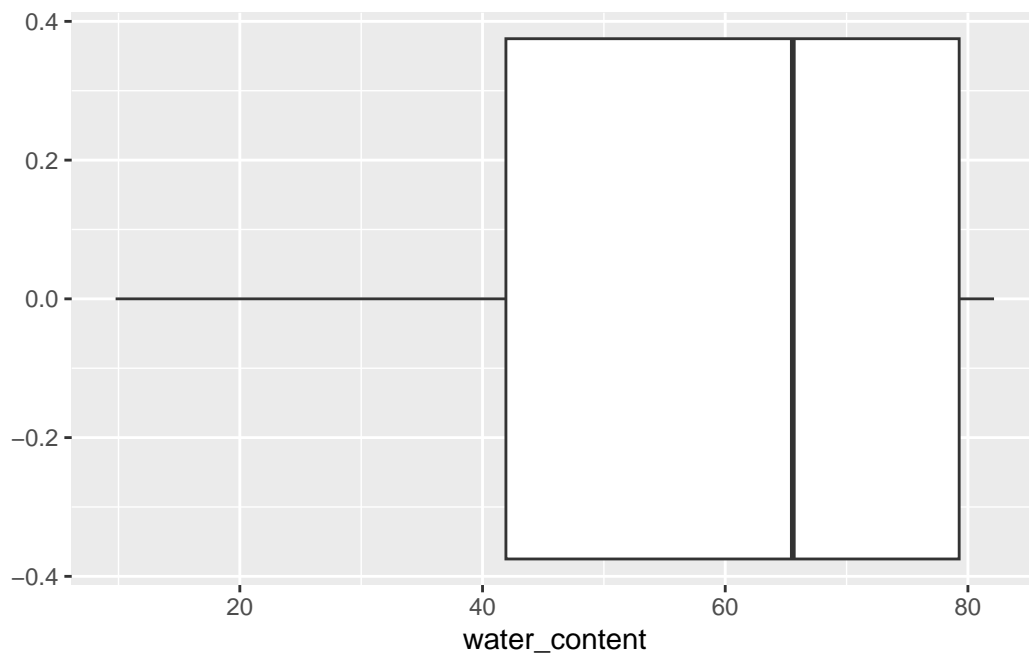


Spring forage yield is typically 2.4 Mg ha (Hunter et al 2020)



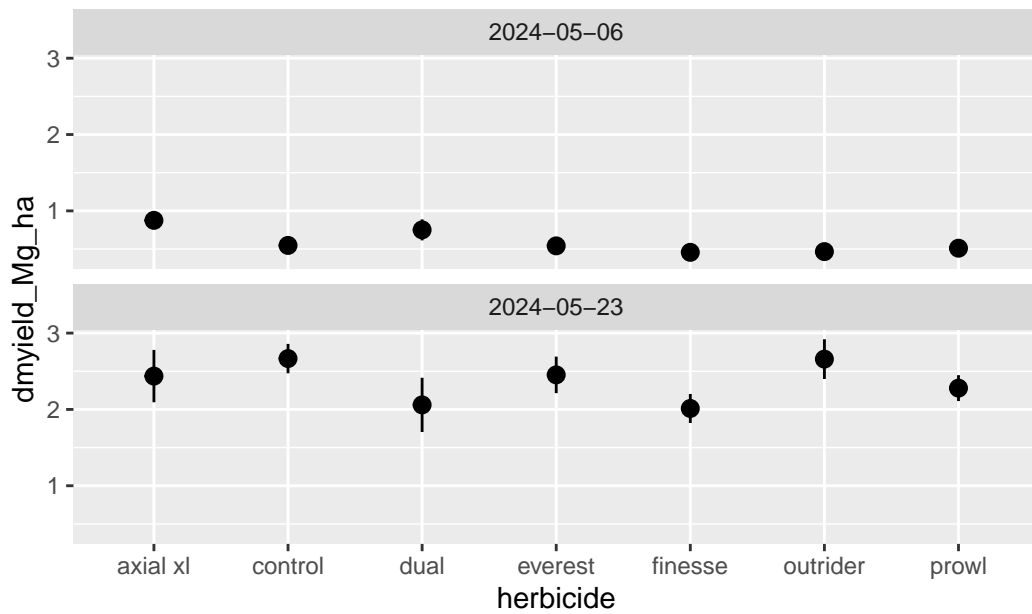
outliers were double checked and are correct

water content

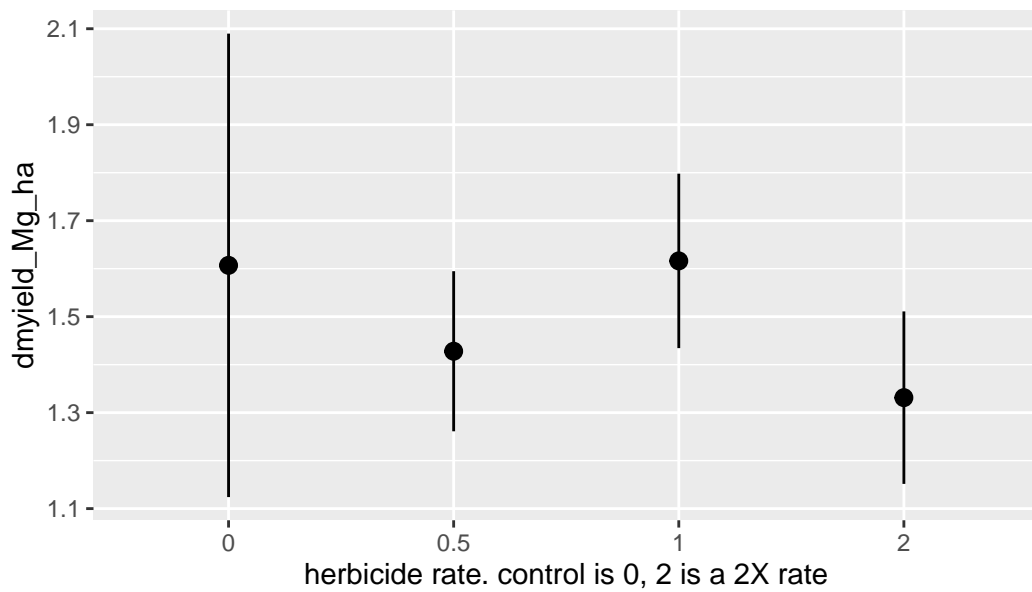


water content averaged 40% in early may and 80% in late May

treatment differences



finesse may have lower DM yield than control at both harvest points



Control has greater variance due to less observations.
No obvious injury though 2X rates averaged lower forage yield

References

Hunter, Mitchell C., Craig C. Sheaffer, Steven W. Culman, William F. Lazarus, and Jacob M. Jungers. 2020. “Effects of Defoliation and Row Spacing on Intermediate Wheatgrass II: Forage Yield and Economics.” *Agronomy Journal* 112: 1862–80. <https://doi.org/10.1002/agj2.20124>.