

ReadMe file for dataset and code used for fitting the model

Title: Positive effects of plant diversity on dry matter yield while maintaining a high level of forage digestibility in intensively managed grasslands across two contrasting environments.

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Data

The two files “Yield_model_data.csv” and “Digestibility_model_data.csv” contain the processed data used for fitting the yield and digestibility responses, respectively. The data comes from Brody and Szelejewo in Poland where a variety of grassland communities consisting of various combinations of *Lolium perenne*, *Cichorium intybus*, *Trifolium repens*, and *Trifolium pratense*, were established. The two sites were characterised mainly by a difference in their soil types and the annual DM yield and the average digestibility of the forage over two years was studied to test for effects of species diversity on these responses.

Both datasets contain 180 rows. The data for yield and digestibility contain 9 and 10 columns, respectively. The columns are as follows

Name	Format	Description
Plot profile	Categorical	A value between 1 to 30, identifying each sown plot in across the two sites and three years.
Seeding density	Categorical	A value of 0 or 1, where 0 = low seeding density while 1 = high seeding density
Site	Categorical	A value of 0 or 1, identifying the site with 0 being Szelejewo and 1 being Brody
Year	Categorical	A variable showing the year of the experiment. Takes values 1, 2, and 3.
G1	Numeric	A numeric value indicating the proportion of <i>Lolium perenne</i> in a community.
G2	Numeric	A numeric value indicating the proportion of <i>Cichorium intybus</i> in a community.
L1	Numeric	A numeric value indicating the proportion of <i>Trifolium repens</i> in a community.
L2	Numeric	A numeric value indicating the proportion of <i>Trifolium pratense</i> in a community.
Yield	Numeric	The total annual yield (in tonnes/ha) for each year of the experiment.
AVG_DMD	Numeric	The average digestibility of the forage over each year of the experiment.
W_DMD	Numeric	The weighted (by yield) average digestibility of the forage over each year of the experiment

Code

The two files “Yield_final_model.sas” and “Digestibility_final_model.sas” contain the SAS code for reading the data and fitting the models shown in the paper for yield and digestibility, respectively.
