

2023

# Testing the potential use of UK wetland plant species in paludiculture using examples from the Somerset Levels

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<https://pearl.plymouth.ac.uk/handle/10026.1/21840>

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The Plymouth Student Scientist

University of Plymouth

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## Appendices

### Appendix 1



Image: Olivia Bentley

Figure 7: Final vegetation sample pellets produced using the XRF press machine.

### Appendix 2

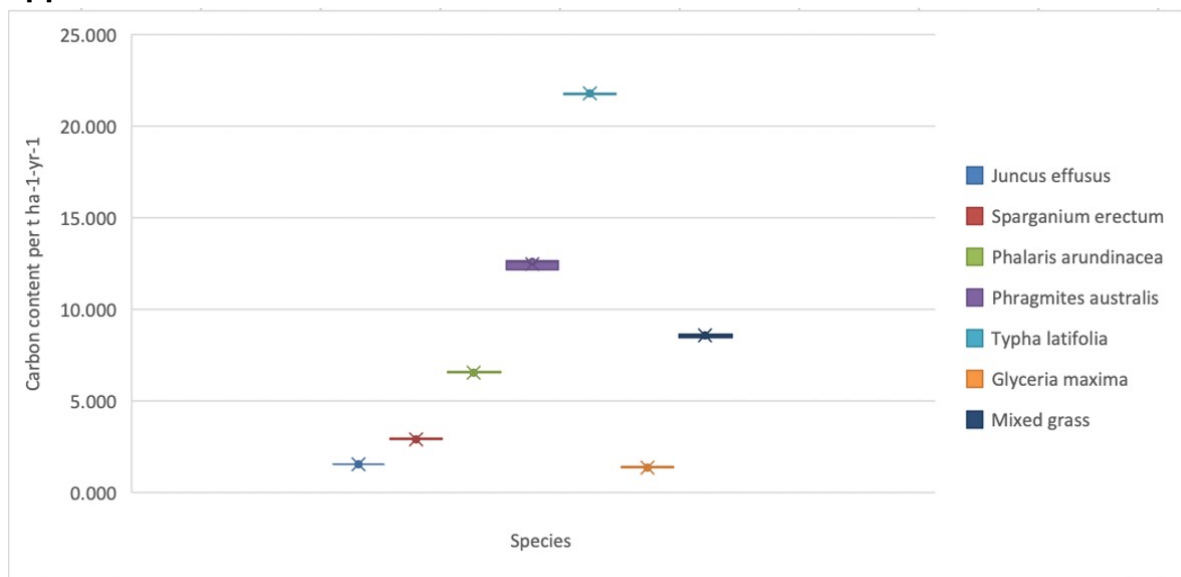


Figure 8: Box plot showing the mean carbon storage capacity per t ha<sup>-1</sup>-yr<sup>-1</sup> of each wetland plant species harvested on the Somerset levels.

### Appendix 3

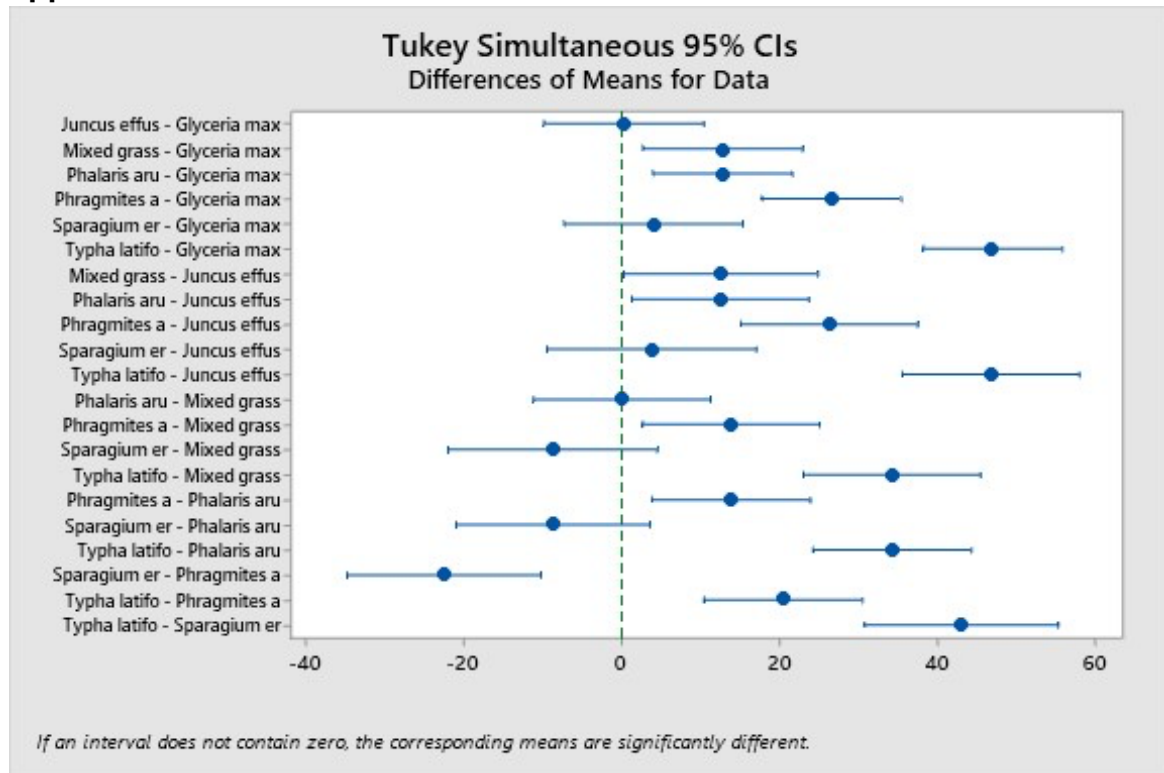


Figure 9: Grouping information of the seven plant species dry biomass production per t ha<sup>-1</sup>-yr<sup>-1</sup> obtained through a post hoc test using the Fisher LSD method. Pairings which do not a zero within the intervals are statistically significantly different.

### Appendix 4

Table 8: Output of Kruskal Wallis non-parametric test conducted on the phosphorus content (%) of the seven wetland plant species harvested on the Somerset levels.

#### Test

Null hypothesis H<sub>0</sub>: All medians are equal  
 Alternative hypothesis H<sub>1</sub>: At least one median is different

Method	DF	H-Value	P-Value
Not adjusted for ties	6	19.64	0.003
Adjusted for ties	6	19.66	0.003

*The chi-square approximation may not be accurate when some sample sizes are less than 5.*

## Appendix 5

Table 9: Output of Kruskal Wallis non-parametric test conducted on the phosphorus removal capacity ( $t\ ha^{-1}\text{-yr}^{-1}$ ) of the seven wetland plant species harvested on the Somerset levels.

### Test

Null hypothesis  $H_0$ : All medians are equal  
 Alternative hypothesis  $H_1$ : At least one median is different

Method	DF	H-Value	P-Value
Not adjusted for ties	6	12.80	0.046
Adjusted for ties	6	12.83	0.046

*The chi-square approximation may not be accurate when some sample sizes are less than 5.*

## Appendix 6

Table 10: Analysis of variance from a one-way ANOVA conducted on carbon content (%) between six plant species excluding *Typha latifolia*.

### Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Sample_1	5	795.881	159.176	426.52	0.00000000000004468
Error	12	4.478	0.373		
Total	17	800.360			

## Appendix 7

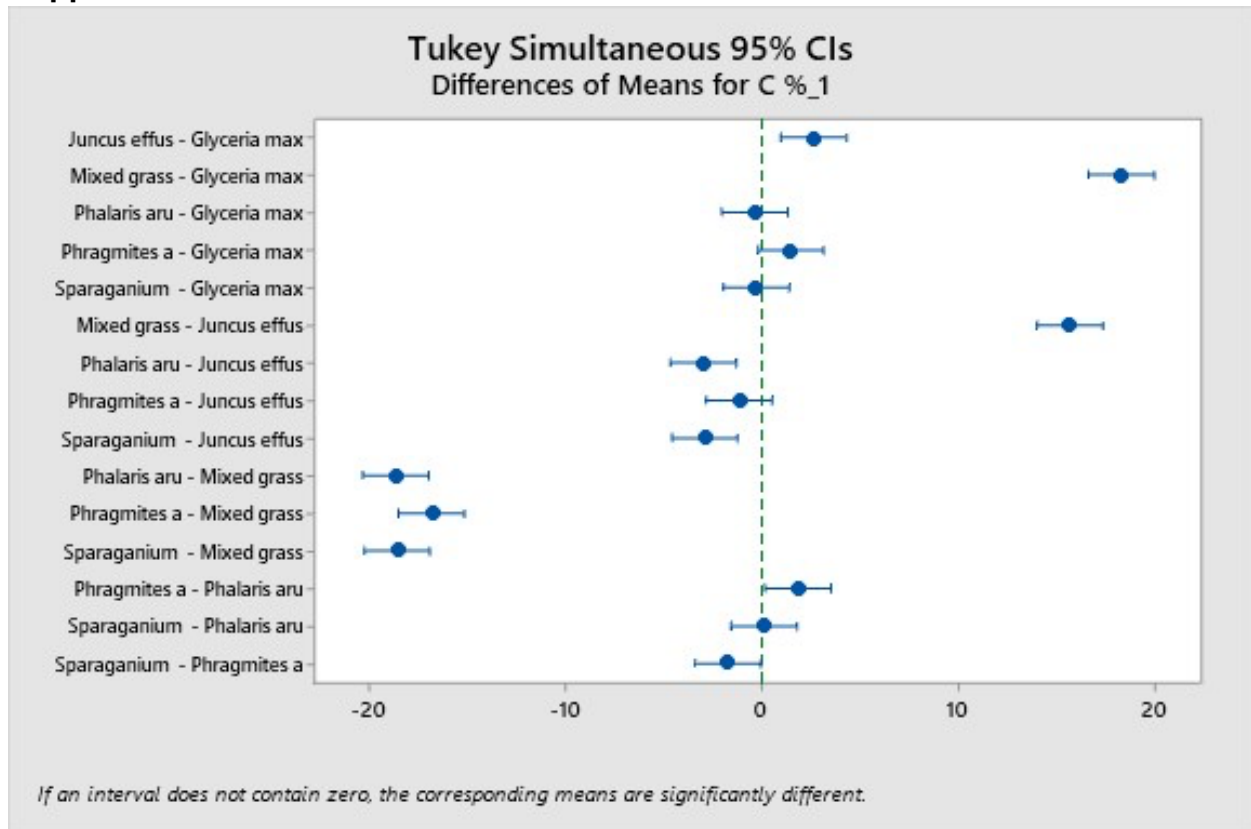


Figure 10: Grouping information of the six plant species carbon content (%), excluding *T.latifolia*, obtained through a post hoc test Tukey test. Pairings which do not a zero within the intervals are statistically significantly different.

## Appendix 8

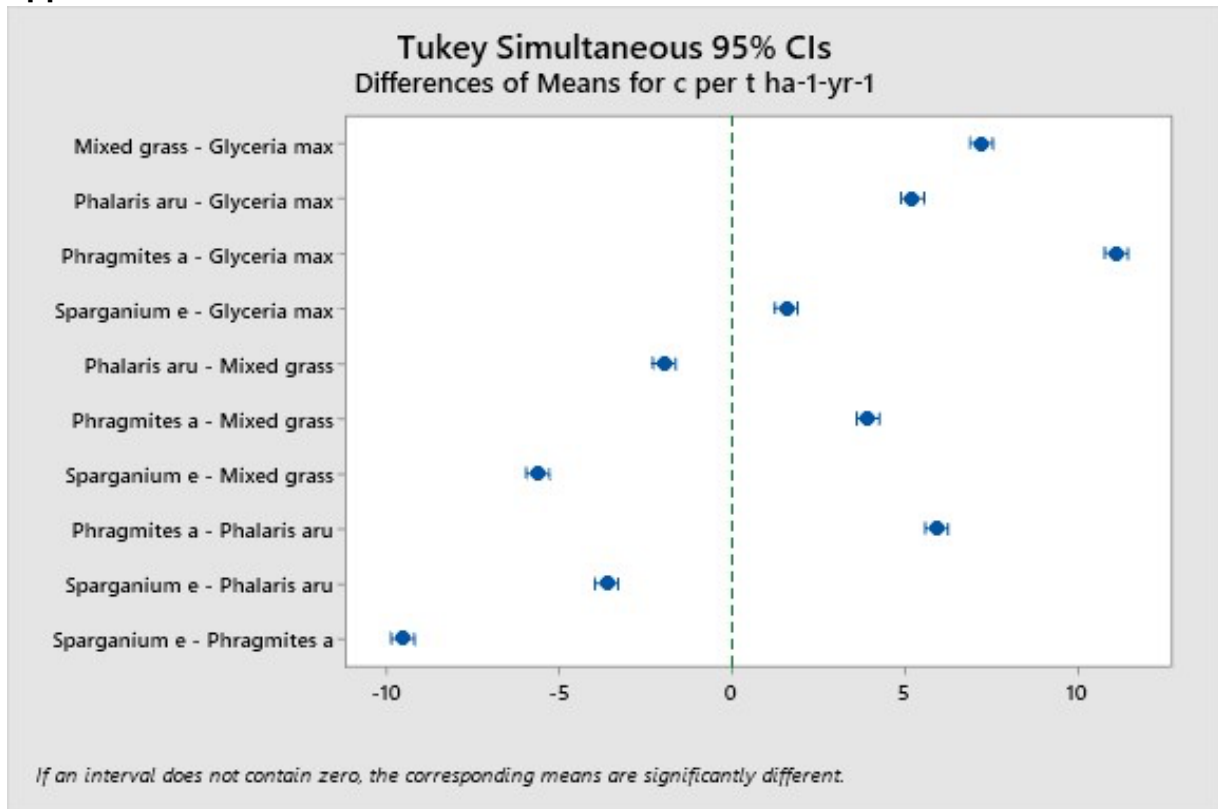


Figure 11: Grouping information of five plant species carbon storage capacity (t ha<sup>-1</sup>-yr<sup>-1</sup>), excluding *T.latifolia* & *J. effusus*, obtained through a post hoc test Tukey test. Pairings which do not a zero within the intervals are statistically significantly different.