

Supplementary Table 1. Repeated measures mixed-effects model for a split-plot analysis of variance for all traits measured weekly with period, cultivar and reduced PPF treatment as the main effects. Residuals for the model were calculated using a first-order autocorrelation to account for the repeated weekly measures using the ASReml-R software package. Analysis revealed that period was the main influence on the variation observed for the majority of traits highlighted yellow.

Trait	Source	Component	Std.error	Z.ratio	Bound	Heritability	%Total of Variation
<b>Biomass</b>	<b>Period</b>	<b>126.97</b>	<b>145.69</b>	<b>0.87</b>	<b>P</b>	<b>0.35</b>	<b>31.67</b>
Biomass	Treatment	0	NA	NA	B	0	0
Biomass	Cultivar	26.99	26.62	1.01	P	0.12	6.73
Biomass	Treatment:Period	47.98	24.55	1.95	P		11.97
Biomass	Cultivar:Period	47.03	19.93	2.36	P		11.73
Biomass	Treatment:Cultivar	15.26	6.91	2.21	P		3.81
Biomass	Treatment:Cultivar:Period	6.03	4.99	1.21	P		1.5
Biomass	Residual	130.7	7.75	16.87	P		32.6
Biomass	Week:ldw!Week!cor	-0.19	0.04	-4.27	U		
<b>CellWallLignin</b>	<b>Period</b>	<b>2.71</b>	<b>2.79</b>	<b>0.97</b>	<b>P</b>	<b>0.34</b>	<b>29.92</b>
CellWallLignin	Treatment	0.03	0.09	0.31	P	0.01	0.31
CellWallLignin	Cultivar	1.04	0.63	1.65	P	0.17	11.5
CellWallLignin	Treatment:Period	0.13	0.12	1.08	P		1.44
CellWallLignin	Cultivar:Period	0.24	0.15	1.6	P		2.63
CellWallLignin	Treatment:Cultivar	0.05	0.07	0.74	P		0.57
CellWallLignin	Treatment:Cultivar:Period	0	NA	NA	B		0
CellWallLignin	Residual	4.86	0.28	17.12	P		53.63
CellWallLignin	Week:ldw!Week!cor	-0.19	0.04	-4.7	U		
<b>CellWallContent</b>	<b>Period</b>	<b>305.38</b>	<b>312.08</b>	<b>0.98</b>	<b>P</b>	<b>0.48</b>	<b>46.52</b>
CellWallContent	Treatment	3.58	7.23	0.5	P	0.01	0.55
CellWallContent	Cultivar	14.39	15.55	0.93	P	0.04	2.19
CellWallContent	Treatment:Period	7.18	7.4	0.97	P		1.09
CellWallContent	Cultivar:Period	26.42	14.7	1.8	P		4.02
CellWallContent	Treatment:Cultivar	0	NA	NA	B		0
CellWallContent	Treatment:Cultivar:Period	0	NA	NA	B		0
CellWallContent	Residual	299.54	17.26	17.35	P		45.63
CellWallContent	Week:ldw!Week!cor	0.1	0.05	2.15	U		
<b>CellWallAsh</b>	<b>Period</b>	<b>0.95</b>	<b>0.99</b>	<b>0.97</b>	<b>P</b>	<b>0.32</b>	<b>31.01</b>
CellWallAsh	Treatment	0.06	0.07	0.87	P	0.03	1.91
CellWallAsh	Cultivar	0.03	0.05	0.5	P	0.01	0.88
CellWallAsh	Treatment:Period	0.04	0.04	0.97	P		1.29
CellWallAsh	Cultivar:Period	0.13	0.07	1.83	P		4.36
CellWallAsh	Treatment:Cultivar	0	NA	NA	B		0
CellWallAsh	Treatment:Cultivar:Period	0	NA	NA	B		0
CellWallAsh	Residual	1.86	0.11	17.38	P		60.54
CellWallAsh	Week:ldw!Week!cor	-0.16	0.04	-3.98	U		
<b>WaterContent</b>	<b>Period</b>	<b>25.1</b>	<b>25.64</b>	<b>0.98</b>	<b>P</b>	<b>0.49</b>	<b>44.31</b>
WaterContent	Treatment	0	NA	NA	B	0	0
WaterContent	Cultivar	3.9	2.43	1.6	P	0.13	6.89

WaterContent	Treatment:Period	1.63	1.04	1.57	P		2.87
WaterContent	Cultivar:Period	0.14	0.39	0.36	P		0.25
WaterContent	Treatment:Cultivar	1.27	0.72	1.76	P		2.25
WaterContent	Treatment:Cultivar:Period	0	NA	NA	B		0
WaterContent	Residual	24.6	1.42	17.35	P		43.43
WaterContent	Week:Idw!Week!cor	-0.06	0.04	-1.44	U		
<b>Extractives</b>	<b>Period</b>	<b>259.32</b>	<b>265.81</b>	<b>0.98</b>	<b>P</b>	<b>0.41</b>	<b>39</b>
Extractives	Treatment	0	NA	NA	B	0	0
Extractives	Cultivar	36.52	27.52	1.33	P	0.09	5.49
Extractives	Treatment:Period	7.1	6.66	1.07	P		1.07
Extractives	Cultivar:Period	23.64	14.37	1.64	P		3.56
Extractives	Treatment:Cultivar	3.17	7.82	0.41	P		0.48
Extractives	Treatment:Cultivar:Period	0	NA	NA	B		0
Extractives	Residual	335.18	20.39	16.44	P		50.41
Extractives	Week:Idw!Week!cor	0.16	0.05	3.38	U		
<b>CellWallCarbohydrates</b>	<b>Period</b>	<b>0.76</b>	<b>1.12</b>	<b>0.68</b>	<b>P</b>	<b>0.05</b>	<b>4.66</b>
CellWallCarbohydrates	Treatment	0	NA	NA	B	0	0
CellWallCarbohydrates	Cultivar	0.71	0.58	1.22	P	0.05	4.36
CellWallCarbohydrates	Treatment:Period	1.04	0.61	1.72	P		6.43
CellWallCarbohydrates	Cultivar:Period	0.36	0.28	1.29	P		2.2
CellWallCarbohydrates	Treatment:Cultivar	0.52	0.29	1.8	P		3.2
CellWallCarbohydrates	Treatment:Cultivar:Period	0	NA	NA	B		0
CellWallCarbohydrates	Residual	12.86	0.76	16.92	P		79.14
CellWallCarbohydrates	Week:Idw!Week!cor	-0.24	0.04	-5.49	U		
<b>CellWallGlucan</b>	<b>Period</b>	<b>0.68</b>	<b>0.73</b>	<b>0.92</b>	<b>P</b>	<b>0.2</b>	<b>12.63</b>
CellWallGlucan	Treatment	0.28	0.26	1.08	P	0.1	5.26
CellWallGlucan	Cultivar	1.51	0.91	1.66	P	0.34	28.19
CellWallGlucan	Treatment:Period	0	NA	NA	B		0
CellWallGlucan	Cultivar:Period	0.36	0.17	2.12	P		6.67
CellWallGlucan	Treatment:Cultivar	0.18	0.09	2.02	P		3.42
CellWallGlucan	Treatment:Cultivar:Period	0	NA	NA	B		0
CellWallGlucan	Residual	2.34	0.13	17.39	P		43.84
CellWallGlucan	Week:Idw!Week!cor	-0.04	0.04	-0.92	U		
<b>CellWallXylan</b>	<b>Period</b>	<b>0.15</b>	<b>0.18</b>	<b>0.83</b>	<b>P</b>	<b>0.14</b>	<b>11.49</b>
CellWallXylan	Treatment	0.06	0.08	0.72	P	0.06	4.73
CellWallXylan	Cultivar	0.13	0.08	1.57	P	0.14	10.4
CellWallXylan	Treatment:Period	0.09	0.06	1.54	P		7.28
CellWallXylan	Cultivar:Period	0.03	0.02	1.39	P		2.1
CellWallXylan	Treatment:Cultivar	0.04	0.02	1.82	P		2.85
CellWallXylan	Treatment:Cultivar:Period	0	0.02	0.1	P		0.16
CellWallXylan	Residual	0.77	0.05	16.5	P		60.99
CellWallXylan	Week:Idw!Week!cor	-0.27	0.04	-7.02	U		
<b>CellWallArabinan</b>	<b>Period</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	<b>P</b>	<b>0.01</b>	<b>0.66</b>
CellWallArabinan	Treatment	0	0	0.72	P	0.03	2.33
CellWallArabinan	Cultivar	0.01	0	1.51	P	0.09	8.3

CellWallArabinan	Treatment:Period	0	0	0.88	P		1.81
CellWallArabinan	Cultivar:Period	0	0	0.24	P		0.38
CellWallArabinan	Treatment:Cultivar	0	0	1.16	P		2.83
CellWallArabinan	Treatment:Cultivar:Period	0	0	0.39	P		1.18
CellWallArabinan	Residual	0.07	0	16.61	P		82.52
CellWallArabinan	Week:Idw!Week!cor	-0.01	0.05	-0.22	U		
<b>CellWallMannan</b>	<b>Period</b>	<b>0.01</b>	<b>0.01</b>	<b>0.88</b>	<b>P</b>	<b>0.11</b>	<b>11.1</b>
CellWallMannan	Treatment	0	0	0.26	P	0.01	0.45
CellWallMannan	Cultivar	0	0	0.66	P	0.02	1.31
CellWallMannan	Treatment:Period	0	0	1.16	P		2.96
CellWallMannan	Cultivar:Period	0	0	1.45	P		3.57
CellWallMannan	Treatment:Cultivar	0	0	0.13	P		0.17
CellWallMannan	Treatment:Cultivar:Period	0	0	0.58	P		1.45
CellWallMannan	Residual	0.04	0	16.66	P		79
CellWallMannan	Week:Idw!Week!cor	-0.21	0.04	-4.68	U		
<b>CellWallGalactan</b>	<b>Period</b>	<b>0.01</b>	<b>0.02</b>	<b>0.87</b>	<b>P</b>	<b>0.15</b>	<b>12.39</b>
CellWallGalactan	Treatment	0	NA	NA	B	0	0
CellWallGalactan	Cultivar	0.02	0.01	1.37	P	0.16	13.72
CellWallGalactan	Treatment:Period	0	0	0.84	P		0.86
CellWallGalactan	Cultivar:Period	0.01	0.01	2.17	P		11.05
CellWallGalactan	Treatment:Cultivar	0	0	0.89	P		1.15
CellWallGalactan	Treatment:Cultivar:Period	0	NA	NA	B		0
CellWallGalactan	Residual	0.07	0	17.24	P		60.84
CellWallGalactan	Week:Idw!Week!cor	0	0.05	0.1	U		
<b>CellWallAIL</b>	<b>Period</b>	<b>0.14</b>	<b>0.17</b>	<b>0.8</b>	<b>P</b>	<b>0.08</b>	<b>6.05</b>
CellWallAIL	Treatment	0.01	0.04	0.23	P	0.01	0.39
CellWallAIL	Cultivar	0.58	0.34	1.71	P	0.28	25.09
CellWallAIL	Treatment:Period	0.06	0.05	1.21	P		2.74
CellWallAIL	Cultivar:Period	0.09	0.05	1.67	P		3.92
CellWallAIL	Treatment:Cultivar	0.02	0.03	0.57	P		0.7
CellWallAIL	Treatment:Cultivar:Period	0	NA	NA	B		0
CellWallAIL	Residual	1.41	0.08	17.22	P		61.11
CellWallAIL	Week:Idw!Week!cor	0.03	0.05	0.57	U		
<b>CellWallASL</b>	<b>Period</b>	<b>0.01</b>	<b>0.01</b>	<b>0.65</b>	<b>P</b>	<b>0.09</b>	<b>8.76</b>
CellWallASL	Treatment	0	NA	NA	B	0	0
CellWallASL	Cultivar	0	0	0.57	P	0.02	1.44
CellWallASL	Treatment:Period	0.01	0.01	1.94	P		14.2
CellWallASL	Cultivar:Period	0	0	1.82	P		5.57
CellWallASL	Treatment:Cultivar	0	0	0.74	P		1.04
CellWallASL	Treatment:Cultivar:Period	0	0	0.3	P		0.64
CellWallASL	Residual	0.05	0	16.75	P		68.34
CellWallASL	Week:Idw!Week!cor	-0.15	0.05	-2.85	U		