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Soil Research

Supplementary Material

Benefits from enhanced-efficiency nitrogen fertilisers in rainfed temperate pastures are seasonally driven

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Table S1. Mean biomass productivity for all treatments at each harvest event (\pm standard error of the mean, n=4) with the LSD ($p = 0.05$) for each harvest date

Treatment	Biomass (t DM ha ⁻¹)					
	26/05/14	3/07/14	21/08/14	1/10/14	23/10/14	9/02/15
Days after fertiliser (DAF)	20	38	49	41	22	109
C	0.12	0.37	0.59	0.33	0.36	0.23
U17	0.21	0.42	0.89	0.94	0.31	0.30
U34	0.30	0.66	1.25	1.22	0.37	0.31
U50	0.23	0.68	1.43	1.29	0.41	0.45
U67	0.20	0.61	1.49	1.81	0.34	0.36
U84	0.26	0.76	1.55	1.90	0.34	0.41
EU17	0.17	0.43	0.88	0.77	0.44	0.29
EU34	0.22	0.41	1.27	1.32	0.40	0.36
EU50	0.27	0.57	1.50	1.24	0.26	0.33
NBPT17	0.12	0.51	1.13	0.92	0.28	0.35
NBPT34	0.21	0.61	1.17	1.22	0.30	0.30
NBPT50	0.17	0.67	1.34	1.47	0.34	0.34
PCU17	0.10	0.50	0.91	0.67	0.31	0.30
PCU34	0.10	0.44	1.15	0.52	0.34	0.40
PCU50	0.15	0.55	1.20	0.70	0.41	0.29
<i>LSD</i> ($p=0.05$)	<i>0.14</i>	<i>0.18</i>	<i>0.44</i>	<i>0.85</i>	<i>0.15</i>	<i>0.14</i>

Table S2. Mean Agronomic N efficiency (AE) for all treatments at each harvest event (\pm standard error of the mean, n=4) with the LSD ($p = 0.05$) for each harvest date

Agronomic N efficiency (kg DM kg ⁻¹ of N applied)						
Treatment	26/05/14	3/07/14	21/08/14	1/10/14	23/10/14	9/02/15
Days after fertiliser (DAF)	20	38	49	41	22	109
U17	5.3	3.0	17.5	35.9	-3.1	3.8
U34	5.5	8.3	19.3	26.4	0.5	2.1
U50	2.3	6.2	16.7	19.2	1.0	4.3
U67	1.2	3.6	13.5	22.1	-0.2	1.8
U84	1.7	4.6	11.4	18.8	-0.3	2.1
EU17	2.9	3.1	16.8	26.0	4.5	3.4
EU34	2.9	1.0	20.0	29.1	1.2	3.8
EU50	3.1	4.0	18.2	18.3	-1.9	1.9
NBPT17	0.4	7.9	31.5	34.6	-4.6	6.9
NBPT34	2.8	6.9	17.1	26.4	-1.8	2.0
NBPT50	1.1	5.8	14.9	22.8	-0.4	2.2
PCU17	-0.7	7.3	18.5	20.1	-2.7	4.1
PCU34	-0.5	2.0	16.4	5.7	-0.6	4.9
PCU50	0.6	3.5	12.2	7.4	1.0	1.1
<i>LSD</i> ($p=0.05$)	4.3	5.9	12.9	34.6	5.5	4.9

Table S3. Mean Apparent nitrogen use efficiency (ApNUE) for all treatments at each harvest event (\pm standard error of the mean, n=4) with the LSD ($p=0.05$) for each harvest date

Apparent nitrogen use efficiency (kg N taken up by pasture kg ⁻¹ of N applied)						
Treatment	26/05/14	3/07/14	21/08/14	1/10/14	23/10/14	9/02/15
Days after fertiliser (DAF)	20	38	49	41	22	109
U17	21.8	46.7	71.3	90.2	-0.5	4.7
U34	26.3	38.7	68.9	56.1	6.7	1.7
U50	10.6	24.6	64.4	52.2	8.4	3.2
U67	4.7	26.5	57.4	66.9	4.7	2.4
U84	8.8	20.9	35.9	57.2	3.5	3.0
EU17	14.9	0.8	63.9	71.9	16.5	7.0
EU34	12.7	14.4	74.8	71.4	7.3	2.9
EU50	16.0	19.2	75.2	51.4	-2.0	2.2
NBPT17	5.3	48.3	119	90.6	-3.9	6.6
NBPT34	14.6	27.7	51.7	57.6	-0.8	0.0
NBPT50	5.1	28.8	63.6	65.5	4.6	1.6
PCU17	-1.7	35.5	81.6	57.6	1.4	6.3
PCU34	-1.7	11.6	69.7	16.1	0.9	6.9
PCU50	2.4	19.5	42.3	25.5	4.9	1.1
<i>LSD</i> ($p=0.05$)	18.7	26.4	47.2	92.6	15.4	7.9

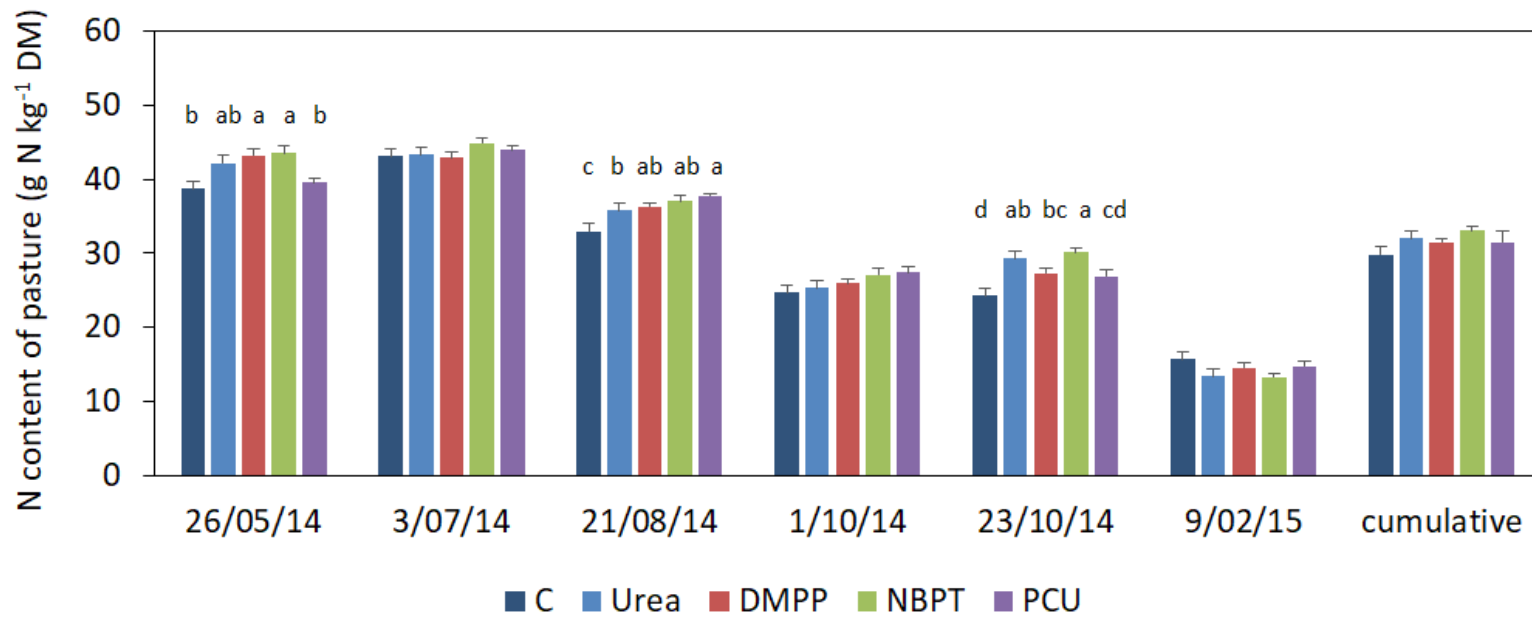


Figure S1. Nitrogen content of pasture at each harvest event, averaged for the control and for the 17, 34 and 50 kg N ha⁻¹ rate for each fertiliser treatment. Different letters above columns on each date indicate significant differences between treatments. Where no letters are provided there is no significant treatment effect on those dates.