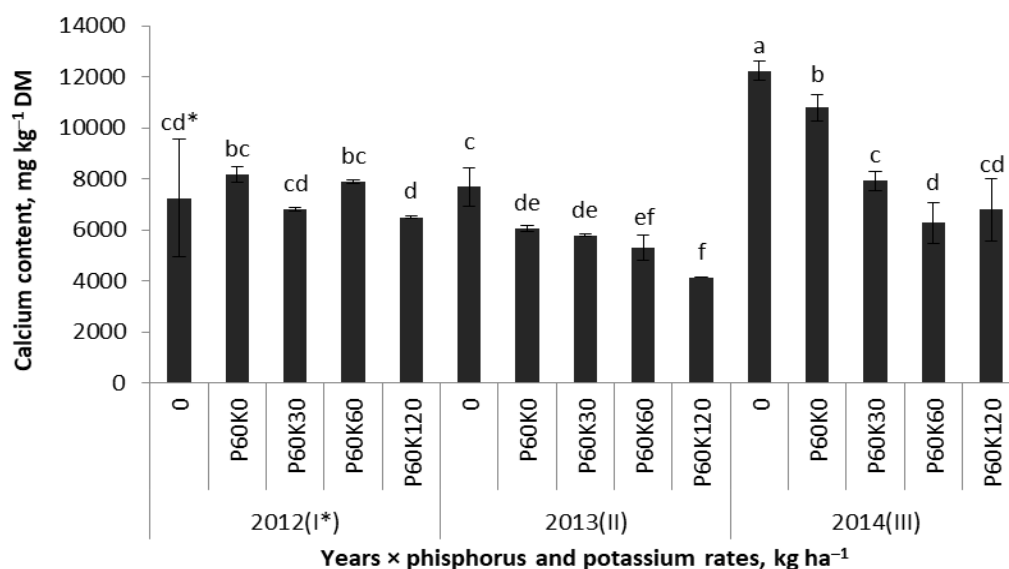


## Supplement

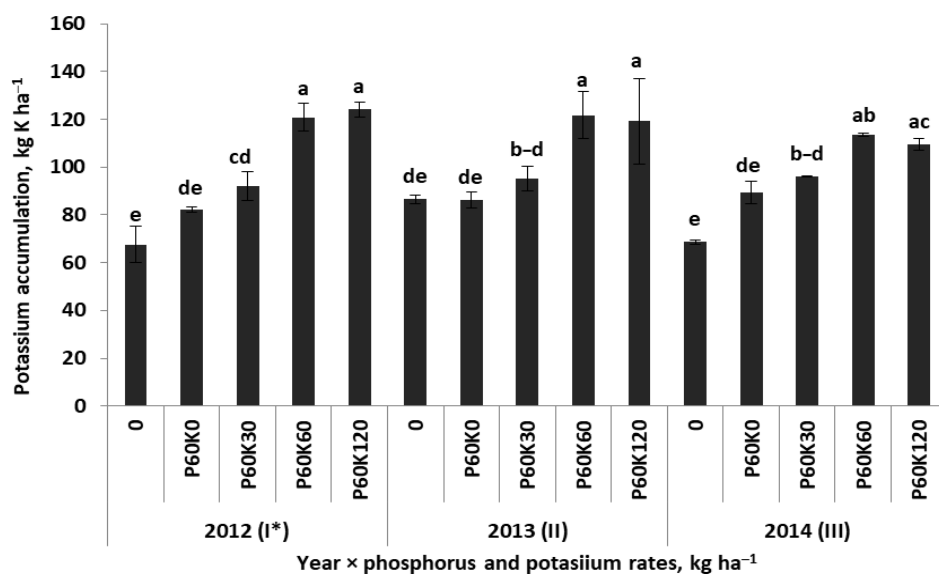
Table S1. The dependence between the content of nutrients in the sward of the alfalfa–grass mixture and total yield,  $n = 30$ .

No.	Trait	Equation	R <sup>2</sup>	<i>p</i>
1	K1	$K1 = 10.3TY - 47.1$	0.60	$\leq 0.001$
2	K2	$K2 = 5.45TY + 25.3$	0.36	$\leq 0.001$
3	K3	$K3 = 20.7TY - 172.9$	0.77	$\leq 0.001$
4	Mg1	$Mg1 = 0.71TY + 1.83$	0.83	$\leq 0.001$
5	Mg2	$Mg2 = 0.49TY + 6.36$	0.23	$\leq 0.01$
6	Mg3	$Mg3 = 1.56TY + 8.22$	0.65	$\leq 0.001$
7	Ca1	$Ca1 = -1.63TY + 50.1$	0.13	$\leq 0.05$
8	Ca2	$Ca2 = 2.89TY + 2.85$	0.07	ns
9	Ca3	$Ca3 = 4.22TY - 30.9$	0.30	$\leq 0.01$
10	Fe1	$F1 = 22TY - 116.2$	0.48	$\leq 0.001$
11	Fe2	$F2 = 9.26TY - 65.6$	0.20	$\leq 0.01$
12	Fe3	$F3 = 21.1TY - 101.9$	0.57	$\leq 0.001$
13	Mn1	$Mn1 = 4.7TY + 17.6$	0.46	$\leq 0.001$
14	Mn2	$Mn2 = 2.35TY + 87.1$	0.01	ns
15	Mn3	$Mn3 = 8.38TY - 1,27$	0.48	ns
16	Zn1	$Zn1 = 4.65TY + 35$	0.21	$\leq 0.01$
17	Zn2	$Zn2 = -0.73TY + 95.8$	0.01	ns
18	Zn3	$Zn3 = 17.4TY - 134.5$	0.60	$\leq 0.001$
19	Cu1	$Cu1 = 0.35TY + 13.7$	0.02	ns
20	Cu2	$Cu2 = 0.12TY + 18.8$	0.01	ns
21	Cu2	$Cu3 = 2.05TY - 8.7$	0.62	$\leq 0.001$

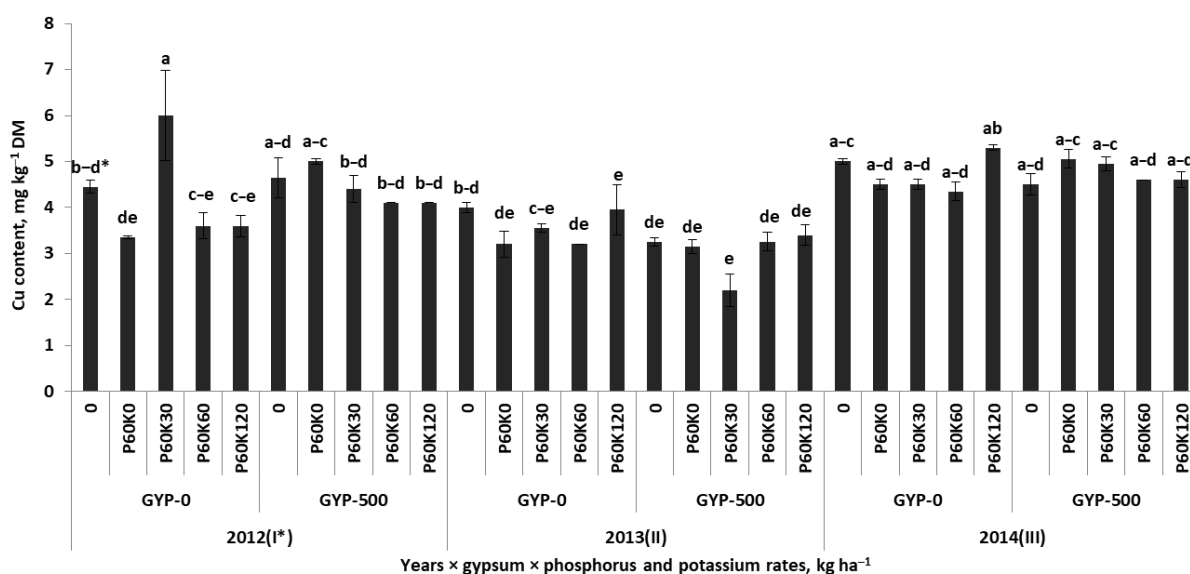
$p < 0.001$ ,  $p < 0.01$ , and  $p < 0.05$ , respectively; ns – non-significant; Legend: K, Mg, Ca, Fe, Mn, Zn, Cu – nutrients; 1, 2, 3 – successive cuts; TY – total sward yield.



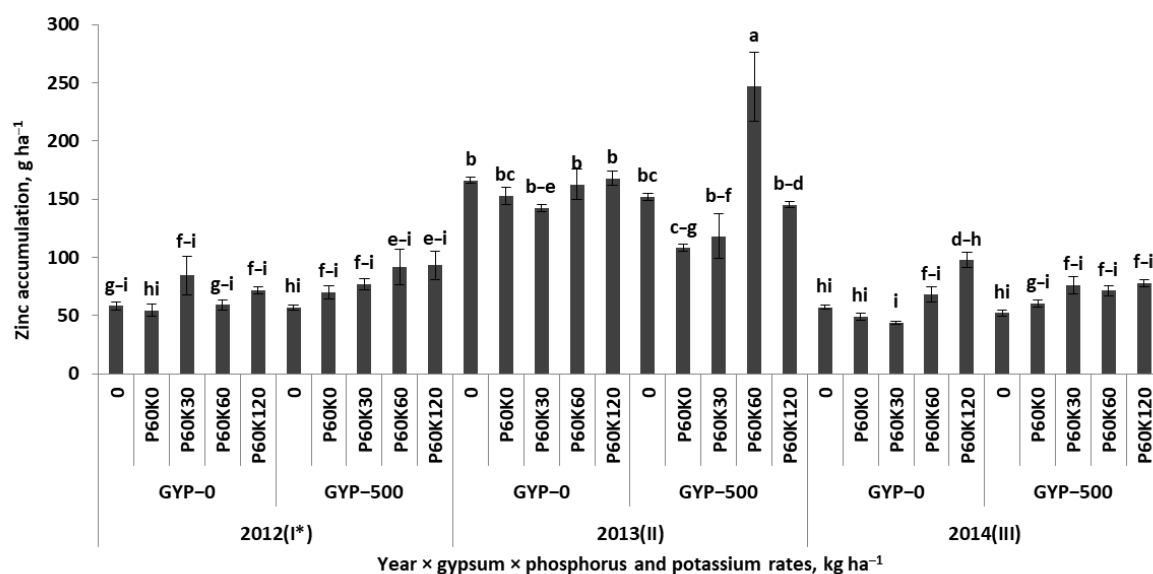
**Figure S1.** Effect of phosphorus/potassium rates in successive seasons on the content of Ca in the first cut of the alfalfa–grass mixture. \*Similar letters indicate a lack of significant differences using Tukey's test. The vertical bar in the column refers to the standard error of the mean; \*first main season of the sward use.



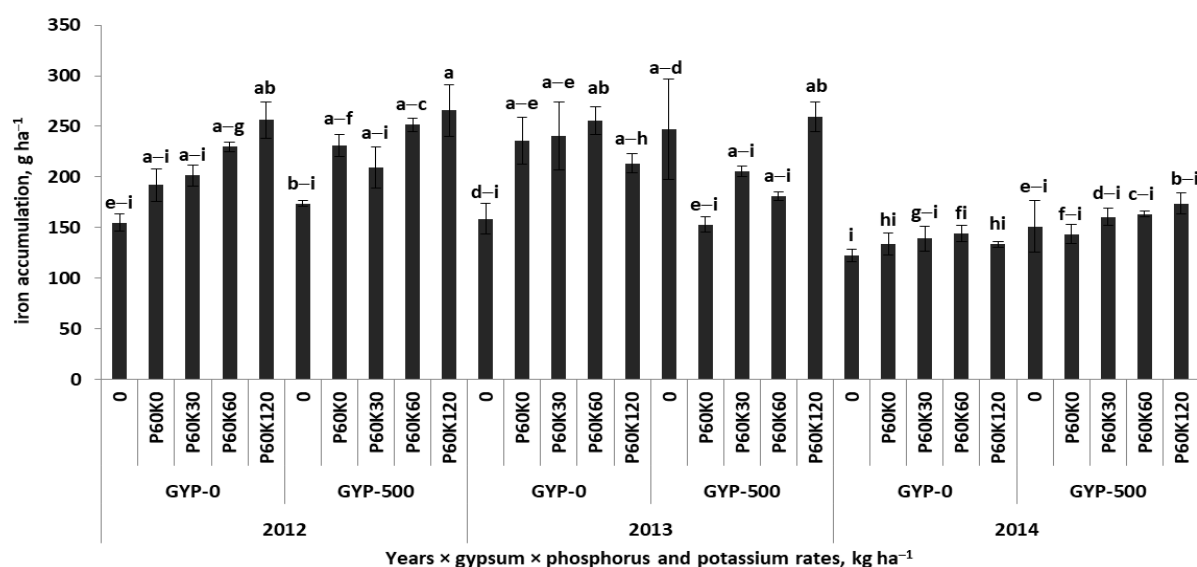
**Figure S2.** Effect of phosphorus/potassium rates in successive seasons on the accumulation of K in the second cut of the alfalfa–grass mixture. <sup>a</sup>Similar letters indicate a lack of significant differences using Tukey’s test. The vertical bar in the column refers to the standard error of the mean; \*first main season of the sward use.



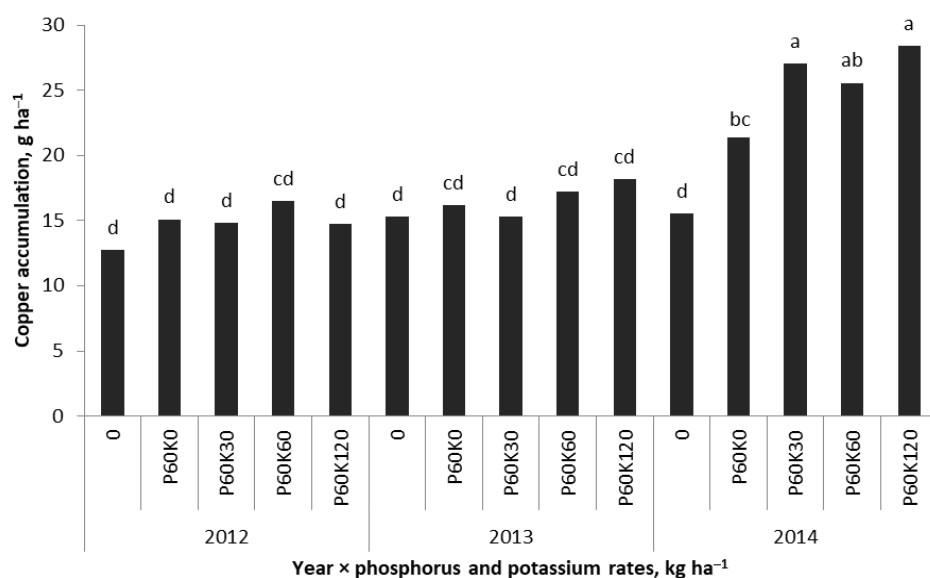
**Figure S3.** Effect of phosphorus/potassium rates in successive years on the content of copper in the third cut of the sward of the alfalfa–grass mixture. <sup>a</sup>Similar letters indicate a lack of significant differences using Tukey’s test. The vertical bar in the column refers to the standard error of the mean; \*first main season of the sward use.



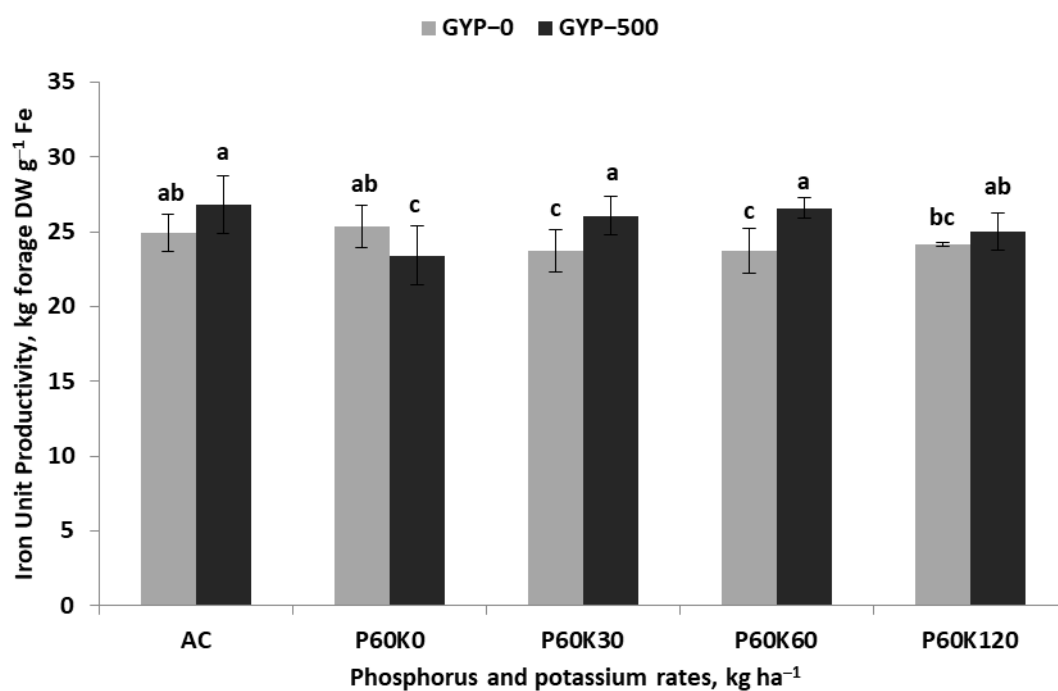
**Figure S4.** Effect of the interaction of gypsum and phosphorus/potassium rates in successive years on the accumulation of Zn in the third cut of the alfalfa–grass mixture. \*Similar letters indicate a lack of significant differences using Tukey’s test. The vertical bar in the column refers to the standard error of the mean; \*first main season of the sward use.



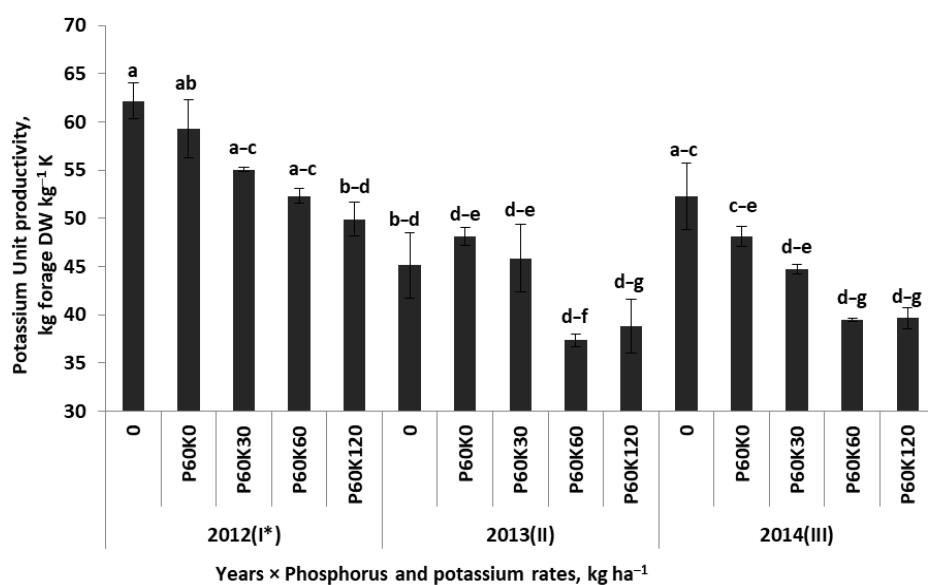
**Figure S5.** Effect of the interaction of gypsum and phosphorus/potassium rates in successive years on the accumulation of Fe in the second cut of the alfalfa–grass mixture. \*Similar letters indicate a lack of significant differences using Tukey’s test. The vertical bar in the column refers to the standard error of the mean; \*first main season of the sward use.



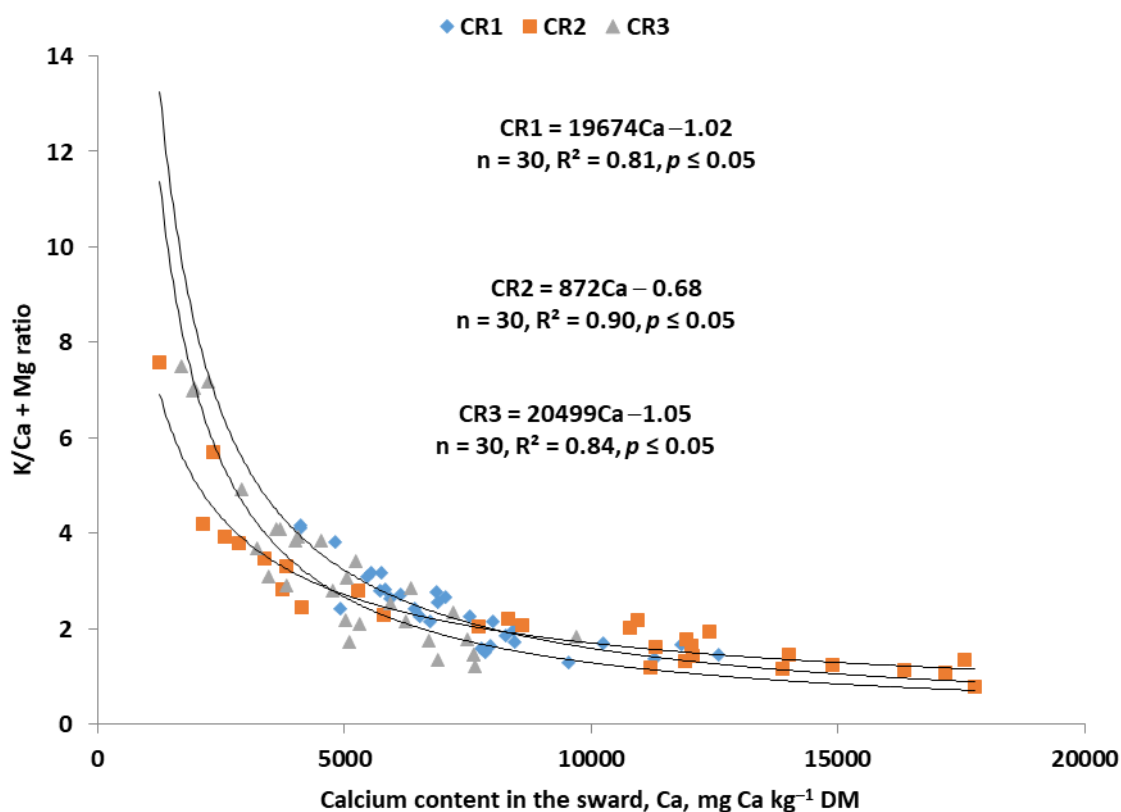
**Figure S6.** Effect of phosphorus/potassium rates in successive years on the accumulation of copper in the first cut of the alfalfa–grass mixture. \*Similar letters indicate a lack of significant differences using Tukey’s test. The vertical bar in the column refers to the standard error of the mean; \*first main season of the sward use.



**Figure S7.** Effect of gypsum and phosphorus/potassium rates on iron unit productivity in the sward of the alfalfa–grass mixture. \*Similar letters indicate a lack of significant differences using Tukey’s test. The vertical bar in the column refers to the standard error of the mean.



**Figure S8.** Effect of phosphorus/potassium rates in successive years on potassium unit productivity in the sward of the alfalfa–grass mixture. <sup>a</sup>Similar letters indicate a lack of significant differences using Tukey’s test. The vertical bar in the column refers to the standard error of the mean; \*first main season of the sward use.



**Figure S9.** The relationship between the content of calcium and the K/Ca + Mg ratio in the successive cuts of the sward of the alfalfa–grass mixture.