

Supplementary Material

Yield and nutritional quality of intercropped forages for organic production in a hot-summer Mediterranean oak grassland ecosystem

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Table S1. Yield and nutritional quality parameters of the six FA, in two GS (mean±standard deviation).

FA	GS	DM (kg/ha)	Moisture (%)	ADF (%)	NDF (%)	Lignin (%)	DMD (%)	CP (%)	EE (%)	NFE (%)	ME (kcal/kgDM)	UFL	Ash (%)
VT	2019	1,160±392	55.63±10.16	30.72±1.12	49.57±2.06	5.85±0.80	60.07±2.36	10.09±2.03	1.26±0.23	31.92±2.09	2,114±72	1.02±0.04	7.18±0.93
	2020	2,582±2,200	62.29±3.83	31.34±2.53	47.17±2.69	3.30±3.42	58.95±7.06	11.89±3.12	0.96±0.23	31.95±2.29	2,054±225	0.99±0.11	8.03±1.87
VR	2019	1,460±419	55.47±3.77	33.88±0.97	55.85±3.28	5.40±0.92	55.47±3.68	8.14±1.43	1.44±0.38	28.93±1.74	1,987±122	0.96±0.06	5.64±0.89
	2020	2,080±1,354	58.44±3.47	31.32±3.66	47.10±4.12	5.35±5.97	58.91±5.27	12.41±1.86	0.91±0.22	30.57±4.42	2,034±173	0.98±0.08	9.02±3.59
VO	2019	1,320±478	55.90±7.16	29.70±2.83	51.87±3.27	5.54±0.89	58.80±2.49	9.58±2.01	1.36±0.56	30.32±3.89	2,079±80	1.00±0.04	6.88±1.05
	2020	2,496±846	65.36±6.63	28.56±4.91	46.45±3.08	3.33±3.38	58.83±6.04	12.86±2.16	1.35±0.26	30.89±1.61	2,057±202	0.99±0.10	8.45±0.93
PT	2019	1,593±501	51.52±6.62	31.27±2.10	50.93±3.76	5.25±0.47	60.87±2.38	8.28±1.45	1.45±0.21	33.35±2.91	2,164±73	1.05±0.04	5.99±0.68
	2020	2,110±1,267	52.23±6.02	30.13±2.22	48.03±3.21	2.48±2.51	58.79±7.36	9.76±2.53	1.24±0.12	35.68±1.99	2,103±255	1.02±0.12	5.29±0.96
PR	2019	1,980±645	50.97±7.15	33.28±1.08	54.87±2.22	5.67±1.03	56.65±2.72	7.53±0.71	1.41±0.21	29.67±1.88	2,005±86	0.97±0.04	6.55±1.27
	2020	2,499±1,502	49.03±3.38	31.71±5.28	49.12±4.79	2.00±1.66	59.98±8.67	10.15±2.24	1.24±0.14	33.05±2.48	2,126±307	1.03±0.15	6.45±0.80
PO	2019	1,373±479	60.57±4.93	32.97±1.11	55.63±1.94	6.37±1.53	54.68±2.93	7.81±1.20	1.45±0.21	28.45±3.21	1,936±81	0.94±0.04	6.67±1.31
	2020	2,053±1,126	50.47±11.65	31.50±2.43	49.94±2.48	2.26±1.50	57.90±5.91	8.94±1.55	1.36±0.32	32.02±1.51	2,042±203	0.99±0.10	7.33±1.54

FA: forage association, GS: growing season, DM: dry matter, ADF: acid detergent fiber, NDF: neutral detergent fiber, DMD: dry matter digestibility, CP: crude protein, EE: ether extract, NFE: nitrogen-free elements, ME: metabolizable energy, MFU: milk fodder unit, VT: vetch-triticale, VR: vetch-rye, VO: vetch-oats, PT: pea-triticale, PR: pea-rye, and PO: pea-oats

Table S2. Nutritional quality in terms of mineral elements composition of the six FA in two GS (mean±SD).

FA	GS	P (g/kg)	K (g/kg)	Ca (g/kg)	Mg (g/kg)	S (g/kg)	Na (g/kg)	Cu (ppm)	Mn (ppm)	Zn (ppm)
VT	2019	1.44±0.23	7.40±1.14	5.94±2.61	1.03±0.26	1.69±0.51	0.23±0.09	5.40±1.07	93.20±21.54	19.99±2.84
	2020	3.06±0.72	9.81±2.15	5.97±2.17	1.16±0.32	0.56±0.30	0.21±0.08	4.76±1.02	112.74±44.17	24.27±10.07
VR	2019	1.17±0.23	7.12±0.85	3.32±1.64	0.76±0.17	1.04±0.30	0.14±0.07	4.51±.91	57.18±9.33	15.25±3.28
	2020	3.28±0.74	9.37±1.25	6.43±2.52	1.19±0.28	0.54±0.20	0.26±0.14	4.71±.74	101.57±27.50	28.62±14.46
VO	2019	1.15±0.39	6.81±1.17	4.00±1.80	0.88±0.24	1.01±0.30	0.68±0.18	4.07±.81	95.96±24.80	14.63±4.13
	2020	3.94±0.65	11.91±2.10	6.73±1.98	1.28±0.19	0.60±0.26	0.20±0.05	5.46±.92	117.52±34.63	28.97±9.95
PT	2019	1.19±0.12	5.31±0.67	5.37±2.41	0.99±0.23	1.02±0.29	0.13±0.03	3.84±.44	66.40±19.86	16.17±4.05
	2020	1.97±0.40	6.19±0.76	3.78±1.33	0.87±0.20	0.37±0.13	0.17±0.05	3.38±.84	87.47±28.76	13.16±3.41
PR	2019	1.01±0.19	5.67±0.55	3.21±1.25	0.75±0.18	0.80±0.15	0.12±0.06	3.86±.67	56.36±12.09	13.98±3.94
	2020	2.25±0.24	6.79±0.77	5.28±2.12	1.01±0.21	0.44±0.14	0.14±0.04	3.62±.41	80.88±30.95	15.14±4.28
PO	2019	1.14±0.17	5.70±0.62	2.80±0.94	0.77±0.13	0.85±0.10	0.83±0.33	3.44±.45	71.61±11.75	13.00±1.67
	2020	2.24±0.38	8.01±1.63	4.32±1.30	1.00±0.17	0.48±0.17	0.15±0.03	3.31±.50	99.97±52.51	13.45±2.47

FA: forage association, GS: growing season, VT: vetch-triticale, VR: vetch-rye, VO: vetch-oats, PT: pea-triticale, PR: pea-rye, and PO: pea-oat