

## Appendix

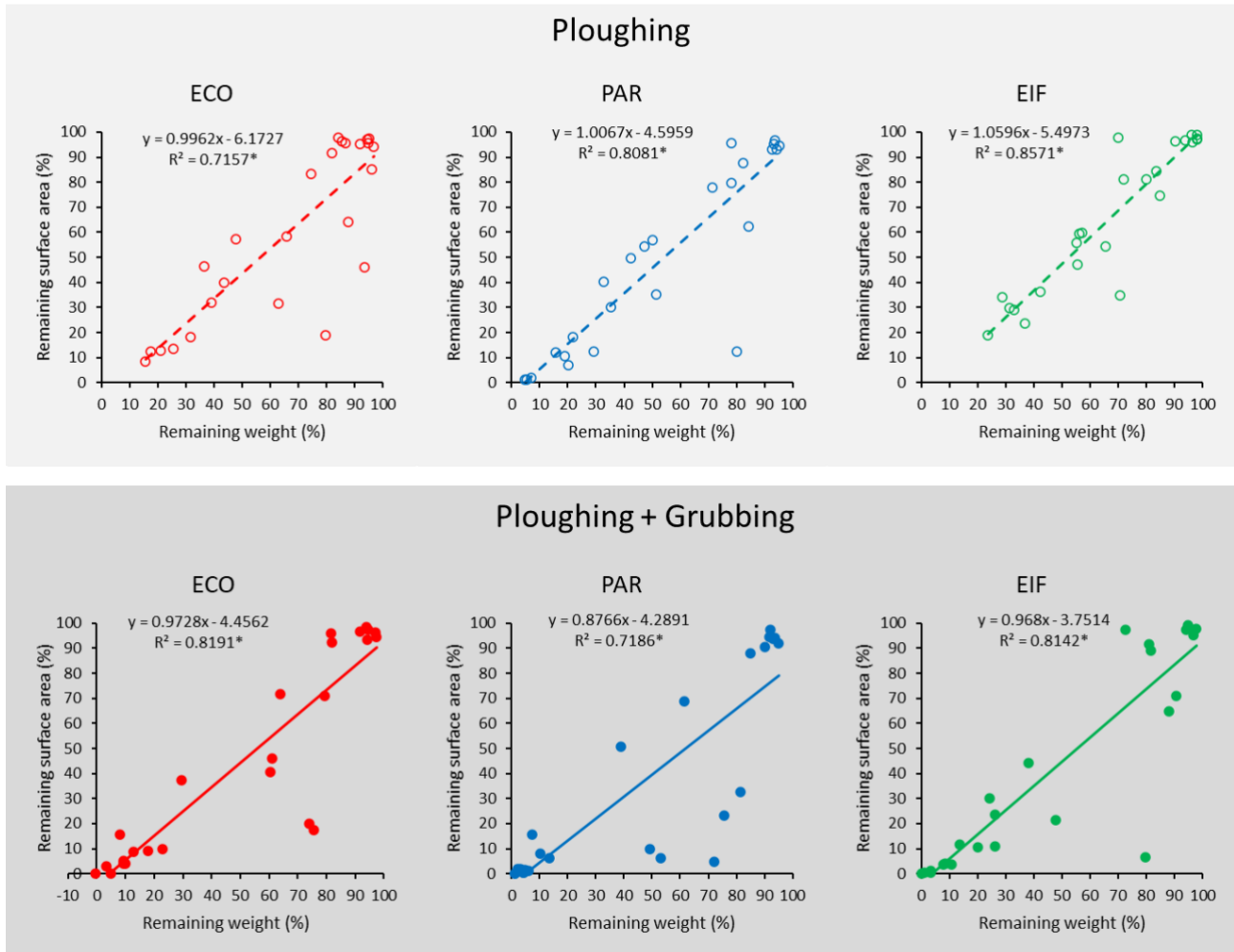


Figure S1. Relationship between the mulch film 'remaining mass' and 'remaining surface area'. ECO, Ecopac; PAR, Pardini; EIF, Eiffel. \*P<0.05.

**Table S1. ANOVA within sampling dates for soil tillage and mulch films and sampling dates (from November 2020 to September 2021, T1-T5, ~2-month intervals), with the overall means that report the non-transformed proportions of weight loss and surface area loss over the study period.**

Variable	Source of variation	Sampling date	df	F	P	Ploughing	Ploughing + grubbing	Ecopac	Pardini	Eiffel	
Weight loss (% remaining)	Tillage × Film	T1	2	0.52	0.60						
		T2	2	0.01	0.99						
		T3	2	0.60	0.56						
		T4	2	0.61	0.55						
		T5	2	2.70	0.09						
	Tillage	T1	1	0.04	0.84		95.33±0.52	94.56±0.58			
		T2	1	2.12	0.16		81.06±3.02	78.23±3.69			
		T3	1	22.52	0.00		61.89±5.39 a	47.06±6.76 b			
		T4	1	36.49	0.00		46.96±5.22 a	13.96±4 b			
		T5	1	32.42	0.00		25.74±4.37 a	6.89±1.69 b			
	Film	T1	2	11.03	0.00				94.81±0.88 a	93.32±0.66 b	96.71±0.65 a
		T2	2	3.59	0.04				83.52±3.92 a	72.89±7.88 b	82.53±3.83 ab
		T3	2	1.10	0.35				57.97±11.95	53.43±10.09	52.01±11.67
		T4	2	2.60	0.10				38.61±13.32	18.82±7.07	33.96±10.42
		T5	2	10.49	0.00				17.58±4.97 a	7.18±3.03 b	24.19±9.76 a
Surface area loss (% remaining)	Tillage × Film	T1	2	0.52	0.60						
		T2	2	0.01	0.99						
		T3	2	0.60	0.56						
		T4	2	0.64	0.54						
		T5	2	2.83	0.08						
	Tillage	T1	1	0.04	0.84		96.03±0.47	95.82±0.62			
		T2	1	2.13	0.16		86.16±3.51	78.18±4.89			
		T3	1	22.54	0.00		52.24±5.83 a	19.79±3.4 b			
		T4	1	36.86	0.00		37.02±4.83 a	8.26±2.91 b			
		T5	1	32.98	0.00		18.42±4.01 a	3.6±1.57 b			
	Film	T1	2	11.09	0.00				96.27±0.6 a	94.04±0.91 b	97.47±0.55 a
		T2	2	3.59	0.04				89.06±4.48 a	71.44±9.48 b	86.01±5.52 a
		T3	2	1.10	0.35				38.31±9.64	29.71±11.25	40.02±12.46
		T4	2	2.69	0.09				27.48±10.58	12.71±5.33	27.73±10.63
		T5	2	10.96	0.00				10.64±4.09 a	2.46±1.58 b	19.93±8.35 a

Different letters indicate significant differences (P=0.05, Tukey tests).