

Table S6: Relationship between growing conditions and weed community structure measures. Estimate, standard error (Std. Error), Chi-square (Chisq), p value (p) and R^2 marginal (R^2 m) and conditional (R^2 c) of the linear mixed effects models fitted to explain the relationship between environmental factors and weed community structure measures. Biovolume, biovolume of the whole weed community; S, weed species richness; J, Pielou index; PCA1, PC3, PCA5 three axes of a principal component analysis on weed community composition; CWM community weighted mean; FDis, functional dispersion. CWM and FDis were computed for eight traits: height, specific leaf area, seed mass, growth form, functional type, life form, month of flowering onset and flowering duration.

Biovolume	Estimate	Std. Error	Chisq	p	R^2 m	R^2 c
Intercept	4.6	0.98			0.014	0.76
Preceding crop- sunflower/cereal	0.011	0.31	0.0012	0.97		
Fertilization	0.002	0.004	0.17	0.68		
Precipitation	-0.002	0.003	0.34	0.56		
S	Estimate	Std. Error	Chisq	p	R^2 m	R^2 c
Intercept	-0.03	3.52			0.44	0.80
Preceding crop- sunflower/cereal	-0.71	1.20	0.35	0.55		
Fertilization	-0.04	0.01	10.64	0.001		
Precipitation	0.04	0.01	15.52	<0.001		
J	Estimate	Std. Error	Chisq	p	R^2 m	R^2 c
Intercept	0.16	0.18			0.10	0.43
Preceding crop- sunflower/cereal	-0.004	0.07	0.003	0.95		
Fertilization	-0.0004	1,000	0.44	0.51		
Precipitation	0.001	0.001	5.56	0.02		
PCA1	Estimate	Std. Error	Chisq	p	R^2 m	R^2 c
Intercept	0.27	0.10			0.35	0.84
Preceding crop- sunflower/cereal	0.01	0.03	0.13	0.70		
Fertilization	0.001	0.0004	4.50	0.03		
Precipitation	-0.001	0.0003	12.39	<0.001		
PCA3	Estimate	Std. Error	Chisq	p	R^2 m	R^2 c
Intercept	-0.04	0.06			0.21	0.87
Preceding crop- sunflower/cereal	-0.05	0.02	5.90	0.02		
Fertilization	0.0004	0.0002	3.70	0.06		
Precipitation	0.0001	0.0002	0.60	0.50		
PCA5	Estimate	Std. Error	Chisq	p	R^2 m	R^2 c
Intercept	-0.11	0.05			0.17	0.86
Preceding crop- sunflower/cereal	-0.002	0.02	0.01	0.90		
Fertilization	0.0002	0.0002	1.40	0.24		

Precipitation	0.0003	0.0002	3.20	0.07
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CWM flower duration	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	2.60	1.00			0.11	0.62
Preceding crop- sunflower/cereal	0.68	0.35	3.87	0.05		
Fertilization	-0.001	0.004	0.12	0.73		
Precipitation	0.002	0.003	0.35	0.55		

Table B6. Continuation

CWM flower onset	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	3.74	0.63			0.02	0.70
Preceding crop- sunflower/cereal	-0.17	0.21	0.68	0.41		
Fertilization	0.001	0.002	0.09	0.76		
Precipitation	-0.001	0.002	0.14	0.71		

CWM growth form	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	1.00	0.24			0.04	0.66
Preceding crop- sunflower/cereal	0.02	0.09	0.07	0.79		
Fertilization	0.0005	0.001	0.32	0.57		
Precipitation	-0.001	0.001	0.83	0.36		

CWM SLA	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	79.67	30.47			0.14	0.82
Preceding crop- sunflower/cereal	11.32	10.54	0.20	0.66		
Fertilization	-0.03	0.11	2.32	0.13		
Precipitation	0.02	0.09	1.76	0.18		

CWM seed mass	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	23.03	4.79			0.13	0.50
Preceding crop- sunflower/cereal	0.73	1.63	1.16	0.28		
Fertilization	-0.03	0.02	1.52	0.22		
Precipitation	0.02	0.01	4.05	0.04		

CWM life form	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	-6.54	7.64			0.24	0.56
Preceding crop- sunflower/cereal	2.81	2.61	0.31	0.58		

Fertilization	-0.03	0.03	7.44	0.01
Precipitation	0.05	0.02	6.29	0.01

CWM functional type	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	1.17	0.14			0.24	0.71
Preceding crop- sunflower/cereal	-0.03	0.05	0.03	0.87		
Fertilization	0.001	0.0005	4.17	0.04		
Precipitation	-0.001	0.0004	6.25	0.01		

CWM height	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	0.94	0.33			0.03	0.67
Preceding crop- sunflower/cereal	0.02	0.12	1.15	0.28		
Fertilization	0.002	0.001	0.10	0.75		
Precipitation	-0.003	0.001	0.04	0.85		

Table B6. Continuation

FDis flower duration	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	-0.61	0.41			0.25	0.81
Preceding crop- sunflower/cereal	0.22	0.12	3.55	0.06		
Fertilization	-0.004	0.002	4.50	0.03		
Precipitation	0.004	0.001	13.72	<0.001		

FDis flower onset	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	0.07	0.27			0.07	0.59
Preceding crop- sunflower/cereal	0.05	0.10	0.31	0.58		
Fertilization	-0.001	0.001	0.58	0.45		
Precipitation	0.001	0.001	1.48	0.22		

FDis growth form	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	-0.33	0.30			0.12	0.49
Preceding crop- sunflower/cereal	-0.001	0.09	0.0001	0.99		
Fertilization	-0.001	0.001	0.23	0.63		
Precipitation	0.003	0.001	8.38	0.004		

FDis SLA	Estimate	Std. Error	Chisq	p	R² m	R² c
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Intercept	0.19	0.14			0.08	0.28
Preceding crop- sunflower/cereal	-0.12	0.05	5.94	0.01		
Fertilization	0.000	0.000	0.002	0.97		
Precipitation	0.001	0.0004	2.06	0.15		

FDis seed mass	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	-0.06	0.01			0.38	0.69
Preceding crop- sunflower/cereal	0.01	0.004	2.45	0.12		
Fertilization	-0.0001	0.000	5.05	0.02		
Precipitation	0.0002	0.0004	39.40	<0.001		

FDis life form	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	-0.03	0.31			0.13	0.58
Preceding crop- sunflower/cereal	-0.01	0.10	0.02	0.90		
Fertilization	-0.002	0.001	3.18	0.07		
Precipitation	0.002	0.001	2.84	0.09		

Table B6. Continuation

FDis functional type	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	0.19	0.50			0.02	0.41
Preceding crop- sunflower/cereal	0.002	0.18	0.0001	0.99		
Fertilization	0.0004	0.002	0.07	0.79		
Precipitation	0.001	0.002	0.83	0.36		

FDis height	Estimate	Std. Error	Chisq	p	R² m	R² c
Intercept	-0.09	0.04			0.28	0.48
Preceding crop- sunflower/cereal	0.02	0.02	2.22	0.14		
Fertilization	-0.0003	0.0001	4.74	0.03		
Precipitation	0.001	0.0001	19.91	<0.001		

