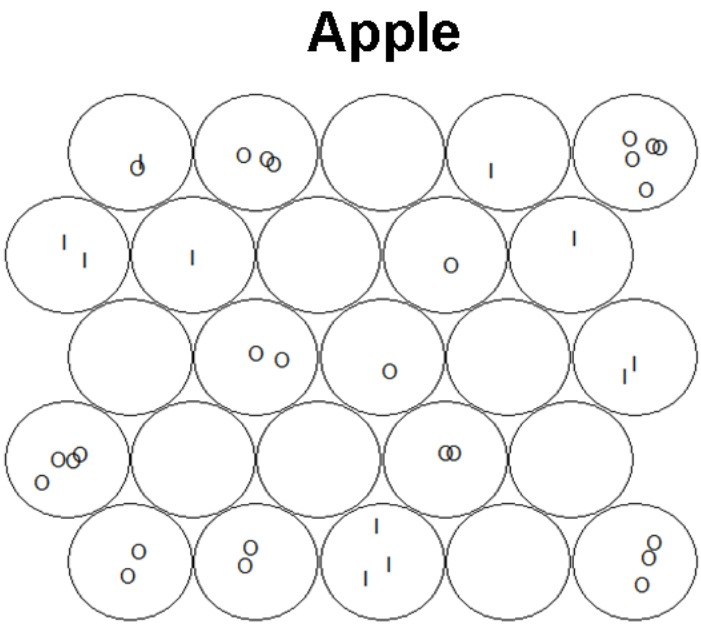


Figure S1. Mapping plot of the trained SOM performed for the long-term cropping system on the categorical group "management" for the two categorical variables considered: integrated (I), organic (O)

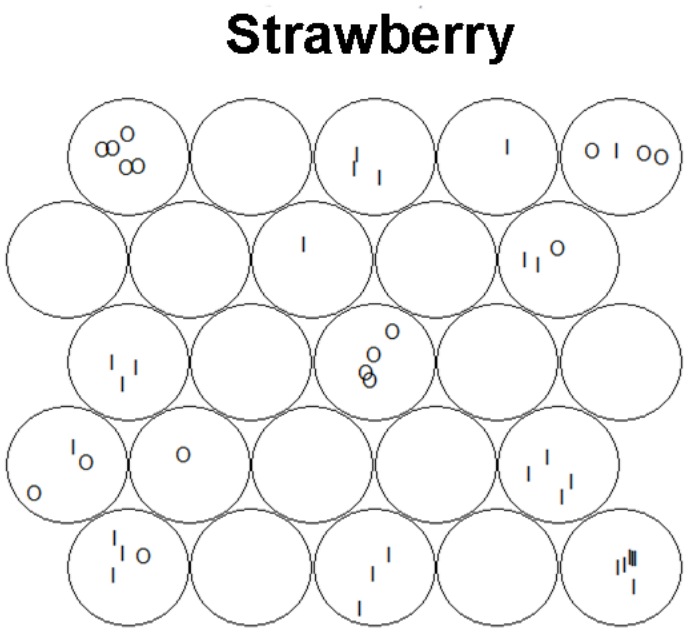


Figure S2. Mapping plot of the trained SOM performed for the medium-term cropping system on the categorical group "Management" for the two categorical variables considered: integrated (I), organic (O)

Table S1: List of fields and their characteristics used for the SOM analysis.

Country	Cropping system	Management	Previous Crop	Previous Crop_Group	TrialCode
Austria	Long-term	Organic	Apple	Rosaceae	2AOFf-TUG
Austria	Long-term	Integrated	Apple	Rosaceae	3AIFf-TUG
Italy - ER	Long-term	Organic	Wheat	Poaceae	4AOFf-CRP
Italy - ER	Long-term	Integrated	Peach	Rosaceae	5AIFf-CRP
Germany - BW2	Long-term	Organic	Apple	Rosaceae	6AOFf-FOE
Germany - BW2	Long-term	Organic	Maize	Poaceae	7AOFf-FOE
Germany - BW	Long-term	Organic	Grass and Clover	Poaceae + Fabaceae	8AOFf-KOB
Poland	Long-term	Organic	Apple	Rosaceae	9AOFp-INH
Germany - BW2	Long-term	Organic	Apple	Rosaceae	12AOFp-FOE
Germany - BW2	Long-term	Integrated	Apple	Rosaceae	13AOFp-FOE
Austria	Short-term	Integrated	Grassland	Poaceae	15SIFf-TUG
Italy - ER	Short-term	Integrated	Strawberry	Rosaceae	16SIGf-CRP
Poland	Short-term	Integrated	Oat	Poaceae	17SIFp-INH
Poland	Short-term	Organic	Buckwheat	Polygonaceae	18SOFp-INH
Slovenia	Short-term	Integrated	Buckwheat + Clover	Polygonaceae + Fabaceae	19SIFp-KIS
Slovenia	Short-term	Organic	Buckwheat + Clover	Polygonaceae + Fabaceae	20SOFp-KIS
Denmark	Short-term	Organic	Pumpkin	Cucurbitaceae	21SOFp-UCP
Denmark	Short-term	Integrated	Wheat	Poaceae	22SIFp-UCP
Italy - PI	Short-term	Integrated	Strawberry	Rosaceae	23SIGp-UNI
Italy - PI	Short-term	Integrated	Potato	Solanaceae	24SIGp-UNI
Italy - ER	Short-term	Organic	Mix of grasses, leguminous, cruciferous	Brassicaceae + Poaceae + Fabaceae	25SOGp-CRP

Table S2. Median value of each variable analyzed for the long-term (apple) and medium-term (strawberry) cropping systems in the group "management" for the two categorical variables considered: integrated (I) and organic (O). Different letters indicate significant differences, $p \leq 0.05$ (Kruskal-Wallis test).

Variables	**Apple management**		**Strawberry management**	
	I	O	I	O
Silt	20[a]	32[a]	23[a]	54[b]
Clay	4[a]	3[a]	10[a]	20.4[a]
Sand	77[a]	59[a]	67[b]	15.8[a]
OM	12.2[a]	16.6[b]	33.8[a]	21.2[a]
pH	6.3[a]	6.8[a]	7.3[a]	7.8[b]
P	405[a]	600[a]	630[a]	488[a]
K	944[a]	1079[a]	985[a]	1103[b]
Ca	3780[a]	3915[a]	3350[a]	3365[a]
Mg	1105[a]	1699[b]	2058[b]	1039[a]
observed_bact	575[a]	563[a]	564[a]	607[a]
diversity_shannon_bact	5.8[a]	5.8[a]	5.8[a]	5.9[a]
evenness_pielou_bact	0.9[a]	0.9[a]	0.9[a]	0.9[a]
observed_fung	352[a]	335[a]	237[a]	240[a]
diversity_shannon_fung	4.6[a]	4.5[a]	4[a]	4.3[a]
evenness_pielou_fung	0.8[a]	0.8[a]	0.7[a]	0.7[a]