

# Supplementary material

**Table S1.** Soil chemical properties of all studied vineyards at 10 depths classified by site and land use.

	Depth (cm)	pHw	pHk	C -----%-----	N	C/N	OM %	Nax	Kx	Cax	Mgx	SB	Alx	eCEC
	0-2	7.0	6.3	9.1	0.6	14.6	15.6	1.5	1.7	19.5	4.4	27.1	<0.7	27.1
	2-4	6.5	5.6	3.8	0.2	17.4	6.6	1.3	1.1	8.9	2.2	13.5	<0.7	13.5
	4-6	5.8	4.9	2.3	0.1	20.5	3.9	1.0	0.8	5.8	1.8	9.4	<0.7	9.4
	6-8	5.3	4.3	2.0	0.1	21.9	3.4	0.4	0.8	4.4	1.6	7.2	<0.7	7.2
	8-10	5.1	3.9	1.8	0.1	24.5	3.0	0.4	0.7	3.4	1.3	5.9	0.6	6.5
	10-15	4.8	3.5	1.7	0.1	23.2	2.9	0.4	0.7	2.0	1.1	4.1	1.4	5.5
	15-20	4.5	3.4	1.9	0.1	19.8	3.3	0.4	0.7	2.2	0.9	4.3	2.3	6.5
	20-30	4.5	3.4	1.9	0.1	20.2	3.3	0.4	0.7	2.2	0.8	4.0	2.5	6.5
	30-40	4.7	3.5	1.7	0.1	23.9	2.9	0.3	0.7	2.6	0.9	4.6	1.2	5.8
	40-50	5.1	3.8	1.3	0.1	21.7	2.3	0.4	0.8	3.2	1.2	5.6	0.5	6.1
PM	0-2	6.2	5.6	9.6	0.5	20.8	16.5	0.3	1.4	15.6	6.9	24.1	<0.7	24.1
	2-4	5.8	5.0	6.7	0.3	22.2	11.6	0.4	1.2	9.5	5.1	16.3	<0.7	16.3
	4-6	5.4	4.4	5.0	0.2	23.9	8.5	0.4	1.1	6.8	4.2	12.6	<0.7	12.6
	6-8	5.1	4.3	4.7	0.2	26.7	8.1	0.3	1.0	6.2	3.6	11.1	<0.7	11.1
	8-10	5.1	4.0	3.3	0.1	31.7	5.7	0.3	1.0	4.5	3.1	9.0	<0.7	9.0
	10-15	4.9	3.8	2.8	0.1	35.5	4.8	0.4	0.9	4.1	2.7	8.0	0.4	8.4
	15-20	4.8	3.6	2.1	0.1	40.7	3.7	0.3	0.7	3.3	2.0	6.3	0.7	6.9
	20-30	5.0	3.8	1.9	0.1	35.3	3.3	0.3	0.5	3.9	2.1	6.8	0.5	7.3
	30-40	5.1	3.8	1.9	0.1	33.1	3.2	0.3	0.4	4.4	2.6	7.6	<0.7	7.6
	40-50	5.1	3.9	1.8	0.0	36.4	3.0	0.2	0.3	4.3	2.4	7.2	<0.7	7.2
	0-2	6.9	6.2	6.1	0.4	14.7	10.5	0.3	1.4	14.6	4.3	20.6	<0.7	20.6
	2-4	6.3	5.3	2.7	0.2	15.5	4.7	0.2	0.8	7.5	2.8	11.3	<0.7	11.3
	4-6	5.7	4.4	1.7	0.1	18.0	3.0	0.2	0.4	4.3	1.7	6.5	<0.7	6.5
	6-8	5.1	3.8	1.9	0.1	16.5	3.2	0.1	0.4	3.6	1.3	5.4	1.2	6.6
	8-10	4.7	3.5	1.6	0.1	17.9	2.8	0.2	0.3	2.5	0.9	3.9	2.5	6.4
	10-15	4.6	3.5	1.4	0.1	18.3	2.5	0.2	0.3	2.7	0.9	4.1	2.7	6.8
	15-20	4.6	3.3	1.7	0.1	16.7	2.9	0.1	0.2	2.6	0.9	3.9	4.2	8.0
	20-30	4.5	3.3	1.8	0.1	15.6	3.0	0.1	0.2	2.9	0.9	4.1	2.9	7.1
	30-40	4.9	3.5	0.8	0.0	18.2	1.4	0.3	0.2	3.8	1.3	5.6	1.0	6.7
	40-50	5.0	3.6	0.8	0.0	17.5	1.4	0.1	0.1	3.2	1.0	4.5	1.3	5.8

AB	0-2	5.6	5.2	18.0	0.8	21.4	31.1	0.3	1.1	23.4	10.6	35.5	<0.7	35.5
	2-4	5.4	4.9	14.6	0.7	20.2	25.1	0.2	1.0	17.5	7.6	26.3	<0.7	26.3
	4-6	5.5	4.4	3.9	0.2	20.7	6.8	0.2	0.8	8.5	4.5	14.0	<0.7	14.0
	6-8	5.5	4.2	2.3	0.1	17.7	3.9	0.2	0.7	6.3	3.8	11.1	<0.7	11.1
	8-10	5.5	4.3	2.4	0.1	19.5	4.1	0.2	0.7	6.3	3.8	11.0	<0.7	11.0
	10-15	5.5	4.3	1.7	0.1	20.7	2.9	0.2	0.7	5.8	3.6	10.3	<0.7	10.3
	15-20	5.6	4.3	1.0	0.1	11.2	1.8	0.2	0.5	5.9	3.2	9.7	<0.7	9.7
	20-30	5.4	3.9	1.5	0.1	25.3	2.6	0.2	0.4	7.3	3.5	11.5	<0.7	11.5
	30-40	5.3	3.5	1.8	0.0	50.6	3.1	0.4	0.2	9.7	4.5	14.7	<0.7	14.7
	40-50	5.2	3.3	1.3	0.0	38.3	2.3	0.4	0.2	13.0	6.0	19.6	0.7	20.3
AC	0-2	6.5	5.6	4.9	0.4	12.3	8.5	0.3	2.9	19.8	1.7	24.7	0.0	24.7
	2-4	6.0	5.0	2.6	0.2	11.9	4.4	0.3	1.5	13.3	2.5	17.6	0.0	17.7
	4-6	5.8	4.6	1.7	0.1	12.7	3.0	0.3	1.3	12.8	2.6	17.0	0.0	17.0
	6-8	5.7	4.5	1.8	0.1	12.2	3.1	0.3	1.1	11.9	2.5	15.9	0.1	16.0
	8-10	5.5	4.3	1.3	0.1	11.7	2.3	0.3	1.1	10.8	2.4	14.6	0.1	14.7
	10-15	5.3	4.0	0.9	0.1	11.9	1.5	0.3	1.0	10.1	2.3	13.7	0.3	14.0
	15-20	5.0	3.6	0.6	0.1	10.0	1.0	0.3	0.9	8.3	2.1	11.6	0.8	12.5
	20-30	4.9	3.5	0.5	0.1	8.5	0.8	0.3	0.8	6.0	1.6	8.8	1.6	10.4
	30-40	5.0	3.4	0.5	0.1	9.9	0.9	0.3	0.8	8.7	1.9	11.7	1.2	12.9
	40-50	5.0	3.4	0.5	0.1	9.6	0.9	0.3	0.7	9.4	2.1	12.5	1.0	13.4
AR	0-2	6.3	5.6	8.6	0.5	16.0	14.8	0.4	0.9	19.6	3.0	23.9	0.0	24.0
	2-4	6.2	5.3	5.1	0.3	15.3	8.9	0.4	0.9	14.3	2.8	18.4	0.0	18.4
	4-6	5.7	4.7	3.1	0.2	13.1	5.3	0.3	0.8	8.2	2.3	11.6	0.0	11.7
	6-8	5.2	4.3	2.2	0.2	12.8	3.8	0.3	0.8	5.0	1.8	8.0	0.2	8.2
	8-10	5.2	4.0	1.6	0.1	14.4	2.7	0.3	0.9	3.3	1.5	5.9	0.6	6.6
	10-15	5.0	3.7	1.2	0.1	12.5	2.1	0.3	0.8	2.6	1.3	5.0	1.3	6.3
	15-20	4.9	3.6	1.1	0.1	13.1	1.9	0.3	0.7	2.5	1.4	4.9	1.5	6.4
	20-30	4.8	3.6	0.9	0.1	12.4	1.6	0.3	0.6	2.4	1.4	4.7	1.7	6.4
	30-40	4.7	3.5	0.9	0.1	12.8	1.5	0.3	0.5	2.6	1.1	4.5	1.9	6.5
	40-50	5.0	3.6	0.7	0.1	10.8	1.1	0.3	0.5	4.5	0.9	6.3	0.9	7.3

AC and AB indicate active and abandoned vineyards, respectively. pHw and pHk indicate pH measured in water and in KCl 1N, respectively. C, N and C/N corresponded to total carbon, total nitrogen (both expressed as percentage) and total carbon and total nitrogen ratio, respectively. OM represents soil organic matter content expressed as percentage. Nax, Kx, Cax, Mgx represent the exchangeable Na, K, Ca and Mg extracted with 1N NH<sub>4</sub>Cl and SB indicates sum of bases, all of them expressed as cmol<sub>+</sub> kg<sup>-1</sup>. Alx and cCEC represents the exchangeable Al and the effective cation exchange capacity, both expressed as cmol<sub>+</sub> kg<sup>-1</sup>.