**Table S2.** Particle size distribution of soil

| **Land use** | **Site number** | **Sampling Depth**  **(cm)** | **Soil particle size (mm)\*** | | | | | | **Sand**  **(%)** | **Silt**  **(%)** | **Clay**  **(%)** | **Texture**  **Class\*\*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.00-0.25** | **0.25-0.05** | **0.05-0.01** | **0.01-0.005** | **0.005-0.001** | **<0.001** |
| Orchards | 1 | 0-30 | 4.7 | 0.6 | 35.6 | 13.4 | 17.6 | 28.2 | 5 | 61 | 34 | silty clay loam |
| 2 | 0-30 | 29.9 | 11.2 | 21.6 | 11.4 | 8.2 | 17.6 | 41 | 40 | 19 | loam |
| 3 | 0-30 | 2.6 | 1.1 | 15.9 | 15.0 | 26.3 | 39.0 | 4 | 49 | 48 | silty clay |
| 4 | 0-30 | 13.6 | 5.0 | 17.6 | 14.2 | 6.7 | 42.9 | 19 | 38 | 43 | clay |
| 5 | 0-30 | 2.0 | 4.5 | 15.2 | 11.4 | 16.9 | 50.0 | 6 | 40 | 54 | clay |
| Vineyards | 1 | 0-30 | 6.0 | 4.8 | 18.9 | 8.4 | 20.1 | 41.8 | 11 | 41 | 48 | silty clay |
| 2 | 0-30 | 2.7 | 0.2 | 16.6 | 5.8 | 22.8 | 52.0 | 3 | 39 | 59 | clay |
| 3 | 0-30 | 5.7 | 0.6 | 22.7 | 13.6 | 19.8 | 37.7 | 6 | 50 | 44 | silty clay |
| 4 | 0-30 | 5.1 | 0.8 | 16.2 | 12.9 | 18.3 | 46.7 | 6 | 43 | 52 | silty clay |
| 5 | 0-30 | 5.0 | 32.0 | 48.6 | 8.7 | 4.2 | 1.4 | 37 | 61 | 2 | silt loam |
| 6 | 0-30 | 18.1 | 9.4 | 17.0 | 5.8 | 12.1 | 37.6 | 28 | 32 | 40 | clay |
| 7 | 0-30 | 5.7 | 6.5 | 24.5 | 23.3 | 9.1 | 30.9 | 12 | 55 | 33 | silty clay loam |
| 8 | 0-30 | 1.7 | 2.8 | 21.7 | 15.1 | 21.7 | 37.0 | 5 | 52 | 44 | silty clay |
| 9 | 0-30 | 10.1 | 4.8 | 23.3 | 9.6 | 14.6 | 37.6 | 15 | 44 | 41 | silty clay |
| Former  vineyards | 1 | 0-30 | 4.5 | 1.2 | 12.1 | 12.1 | 17.9 | 52.2 | 6 | 38 | 57 | clay |
| 2 | 0-30 | 3.2 | 0.8 | 17.9 | 17.0 | 12.9 | 48.3 | 4 | 45 | 51 | silty clay |
| 3 | 0-30 | 3.8 | 0.0 | 34.9 | 0.4 | 24.9 | 35.9 | 4 | 52 | 44 | silty clay |
| 4 | 0-30 | 3.6 | 6.9 | 1.7 | 3.7 | 39.9 | 44.2 | 11 | 31 | 58 | clay |
| 5 | 0-30 | 25.7 | 13.5 | 22.7 | 6.2 | 6.2 | 25.7 | 39 | 35 | 26 | loam |
| 6 | 0-30 | 8.1 | 0.4 | 24.1 | 24.9 | 11.2 | 31.3 | 8 | 58 | 34 | silty clay loam |
| 7 | 0-30 | 7.3 | 2.3 | 50.4 | 12.1 | 16.2 | 11.8 | 10 | 73 | 17 | silt loam |
| 8 | 0-30 | 2.2 | 0.3 | 19.5 | 12.0 | 28.2 | 37.8 | 3 | 50 | 47 | silty clay |
| 9 | 0-30 | 2.9 | 0.9 | 16.6 | 15.0 | 20.0 | 44.7 | 4 | 46 | 50 | silty clay |
| 10 | 0-30 | 16.2 | 13.1 | 14.8 | 9.0 | 16.0 | 30.9 | 29 | 35 | 35 | clay loam |

\* Particle size distribution according N.A. Kachinskii system

\*\*Soil texture classes according to USDA system

**Table S2.** Continued

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Land use** | **Site number** | **Sampling Depth**  **(cm)** | **Soil particle size (mm)\*** | | | | | | **Sand**  **(%)** | **Silt**  **(%)** | **Clay**  **(%)** | **Texture**  **Class\*\*** |
| **1.00-0.25** | **0.25-0.05** | **0.05-0.01** | **0.01-0.005** | **0.005-0.001** | **<0.001** |
| Arable,  intensive | 1 | 0-30 | 3.2 | 13.4 | 23.0 | 13.1 | 19.7 | 27.6 | 17 | 50 | 34 | silty clay loam |
| 2 | 0-30 | 19.9 | 16.4 | 18.6 | 5.8 | 12.0 | 27.4 | 36 | 34 | 30 | clay loam |
| 3 | 0-30 | 6.6 | 2.5 | 18.3 | 20.0 | 9.6 | 43.0 | 9 | 47 | 44 | silty clay |
| 4 | 0-30 | 2.7 | 2.4 | 16.7 | 6.4 | 22.3 | 49.5 | 5 | 39 | 56 | clay |
| 5 | 0-30 | 1.4 | 2.7 | 22.2 | 11.7 | 17.6 | 44.3 | 4 | 47 | 49 | silty clay |
| 6 | 0-30 | 4.5 | 0.3 | 36.0 | 13.6 | 14.5 | 31.1 | 5 | 60 | 35 | silty clay loam |
| 7 | 0-30 | 0.8 | 2.6 | 14.7 | 7.4 | 20.4 | 54.1 | 3 | 37 | 60 | clay |
| 8 | 0-30 | 0.6 | 2.1 | 13.1 | 6.8 | 19.8 | 57.6 | 3 | 34 | 63 | clay |
| 9 | 0-30 | 3.1 | 6.4 | 19.2 | 7.9 | 24.2 | 39.0 | 10 | 43 | 47 | silty clay |
| 10 | 0-30 | 0.4 | 2.2 | 16.8 | 10.5 | 24.7 | 45.4 | 3 | 44 | 53 | silty clay |
| 11 | 0-30 | 21.4 | 0.2 | 13.2 | 6.2 | 12.4 | 46.5 | 22 | 30 | 49 | clay |
| 12 | 0-30 | 3.2 | 0.8 | 24.3 | 10.0 | 17.6 | 44.1 | 4 | 47 | 49 | silty clay |
| 13 | 0-30 | 0.5 | 2.2 | 7.1 | 10.0 | 19.2 | 60.9 | 3 | 32 | 66 | clay |
| 14 | 0-30 | 9.6 | 0.1 | 19.4 | 29.9 | 4.2 | 36.8 | 10 | 54 | 36 | silty clay loam |
| Arable,  extensive | 1 | 0-30 | 9.4 | 3.5 | 9.5 | 9.5 | 15.7 | 52.3 | 13 | 31 | 56 | clay |
| 2 | 0-30 | 11.2 | 17.0 | 16.1 | 8.2 | 13.2 | 34.3 | 28 | 34 | 38 | clay loam |
| 3 | 0-30 | 3.6 | 11.7 | 17.2 | 2.1 | 23.0 | 42.4 | 15 | 35 | 49 | clay |
| 4 | 0-30 | 0.4 | 1.1 | 18.4 | 11.5 | 23.0 | 45.5 | 2 | 46 | 52 | silty clay |
| 5 | 0-30 | 0.6 | 7.6 | 16.2 | 6.6 | 28.0 | 41.0 | 8 | 42 | 50 | silty clay |
| 6 | 0-30 | 0.2 | 1.2 | 13.9 | 11.7 | 15.2 | 57.9 | 1 | 38 | 61 | clay |
| 7 | 0-30 | 0.1 | 4.5 | 15.9 | 8.6 | 20.2 | 50.6 | 5 | 39 | 56 | clay |
| 8 | 0-30 | 1.5 | 1.2 | 12.9 | 7.3 | 21.6 | 55.5 | 3 | 36 | 61 | clay |
| 9 | 0-30 | 0.4 | 1.7 | 10.9 | 15.7 | 14.0 | 57.2 | 2 | 38 | 60 | clay |
| 10 | 0-30 | 0.5 | 2.2 | 7.1 | 10.0 | 19.2 | 52.1 | 8 | 33 | 58 | clay |
| 11 | 0-30 | 5.0 | 3.4 | 12.2 | 5.2 | 22.2 | 65.7 | 4 | 27 | 69 | clay |
| 12 | 0-30 | 0.7 | 3.0 | 4.7 | 9.0 | 16.8 | 29.3 | 9 | 56 | 35 | silty clay loam |
| 13 | 0-30 | 5.7 | 3.3 | 13.3 | 8.3 | 46.1 | 23.4 | 9 | 50 | 41 | silty clay |
| 14 | 0-30 | 4.6 | 2.7 | 3.7 | 29.2 | 20.6 | 39.2 | 7 | 47 | 45 | silty clay |
| 15 | 0-30 | 7.9 | 6.4 | 22.3 | 14.3 | 4.6 | 44.4 | 14 | 42 | 44 | silty clay |
| 16 | 0-30 | 22.0 | 9.0 | 16.2 | 5.0 | 16.6 | 31.3 | 31 | 33 | 36 | clay loam |
| 17 | 0-30 | 2.7 | 5.2 | 20.0 | 19.6 | 20.0 | 32.6 | 8 | 53 | 39 | silty clay loam |
| 18 | 0-30 | 3.4 | 7.8 | 19.5 | 20.3 | 15.3 | 33.7 | 11 | 51 | 38 | silty clay loam |
| 19 | 0-30 | 5.9 | 0.4 | 13.8 | 20.5 | 19.2 | 40.3 | 6 | 48 | 46 | silty clay |
| 20 | 0-30 | 2.1 | 1.3 | 15.4 | 21.2 | 14.5 | 45.4 | 3 | 48 | 49 | silty clay |

\* Particle size distribution according N.A. Kachinskii system

\*\*Soil texture classes according to USDA system

**Table S2.** Continued

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Land use** | **Site number** | **Sampling Depth**  **(cm)** | Soil particle size (mm)\* | | | | | | **Sand**  **(%)** | **Silt**  **(%)** | **Clay**  **(%)** | **Texture**  **Class\*\*** |
| **1.00-0.25** | **0.25-0.05** | **0.05-0.01** | **0.01-0.005** | **0.005-0.001** | **<0.001** |
| Pastures | 1 | 0-30 | 1.7 | 7.9 | 18.8 | 5.2 | 24.9 | 41.4 | 10 | 41 | 49 | silty clay |
| 2 | 0-30 | 1.1 | 5.5 | 16.8 | 8.6 | 34.9 | 33.0 | 7 | 48 | 46 | silty clay |
| 3 | 0-30 | 12.5 | 15.5 | 18.0 | 11.4 | 9.8 | 32.8 | 28 | 37 | 35 | clay loam |
| 4 | 0-30 | 2.7 | 11.2 | 20.1 | 7.5 | 10.1 | 48.4 | 14 | 36 | 50 | clay |
| 5 | 0-30 | 7.9 | 18.1 | 56.3 | 12.1 | 3.8 | 1.8 | 26 | 72 | 2 | silt loam |
| 6 | 0-30 | 3.6 | 16.4 | 35.8 | 8.3 | 15.0 | 21.0 | 20 | 55 | 25 | silt loam |
| 7 | 0-30 | 3.0 | 7.8 | 13.9 | 5.5 | 19.7 | 50.2 | 11 | 34 | 55 | clay |
| 8 | 0-30 | 26.2 | 26.6 | 19.9 | 6.3 | 10.6 | 10.4 | 53 | 34 | 13 | sandy loam |
| 9 | 0-30 | 9.9 | 8.9 | 21.4 | 10.9 | 13.4 | 35.5 | 19 | 42 | 39 | silty clay loam |
| 10 | 0-30 | 1.1 | 3.3 | 16.5 | 8.4 | 19.0 | 51.7 | 4 | 39 | 57 | clay |
| 11 | 0-30 | 18.1 | 4.9 | 14.5 | 11.0 | 48.5 | 1.9 | 23 | 54 | 23 | silt loam |
| 12 | 0-30 | 1.3 | 4.4 | 24.5 | 9.7 | 29.5 | 30.6 | 6 | 53 | 41 | silty clay |
| 13 | 0-30 | 1.3 | 4.0 | 12.1 | 7.1 | 26.7 | 48.7 | 5 | 38 | 57 | clay |
| 14 | 0-30 | 0.3 | 10.0 | 27.4 | 16.5 | 31.2 | 14.6 | 10 | 64 | 26 | silt loam |
| 15 | 0-30 | 0.4 | 2.4 | 12.0 | 4.3 | 23.6 | 57.3 | 3 | 33 | 64 | clay |
| 16 | 0-30 | 1.1 | 1.3 | 21.8 | 10.2 | 17.9 | 47.6 | 2 | 46 | 52 | silty clay |
| 17 | 0-30 | 4.6 | 1.0 | 48.2 | 10.5 | 4.5 | 25.6 | 6 | 63 | 31 | silty clay loam |
| 18 | 0-30 | 1.0 | 2.6 | 18.7 | 2.6 | 27.7 | 47.5 | 4 | 40 | 56 | silty clay |
| 19 | 0-30 | 16.6 | 9.0 | 21.7 | 8.3 | 13.3 | 31.0 | 26 | 40 | 34 | clay loam |
| 20 | 0-30 | 1.4 | 3.9 | 16.6 | 7.7 | 18.7 | 51.8 | 5 | 38 | 57 | clay |
| 21 | 0-30 | 1.1 | 11.3 | 17.4 | 9.3 | 21.6 | 39.2 | 12 | 42 | 46 | silty clay |
| 22 | 0-30 | 2.3 | 0.7 | 12.8 | 8.1 | 18.3 | 57.8 | 3 | 35 | 62 | clay |
| 23 | 0-30 | 4.2 | 3.6 | 50.0 | 7.6 | 12.7 | 21.8 | 8 | 67 | 25 | silt loam |
| 24 | 0-30 | 1.8 | 1.2 | 8.9 | 9.3 | 16.6 | 62.2 | 3 | 31 | 66 | clay |
| 25 | 0-30 | 4.4 | 1.2 | 15.6 | 12.2 | 12.2 | 54.3 | 6 | 38 | 56 | clay |

\* Particle size distribution according N.A. Kachinskii system

\*\*Soil texture classes according to USDA system