

Additional file 1 Summary of the sampling sites in Portugal according to bioregion with an emphasis on environmental, wildlife and flora features, adapted from PNVSFS (2020) and Muñoz et al. [58]. Numbers of wild boar faecal samples collected in each location are indicated.

Location	Bioregion	Environmental features	Wildlife and domestic animal's ¹ features	Sampling site features
Montesinho Park (MNP)	Natural BR2	Continental Mediterranean climate. Dry, hot summers, dry, cold winters. Open, cereal landscapes with pine or oak woodlands, limited to the north by mountains	Wild boar abundant. Other ungulate species: red deer and roe deer widely distributed. Cattle $n = 4816$; goat $n = 1717$; sheep $n = 34\ 773$; pig $n = 1153$.	Samples collected: 41. Oak and chestnut forests (e.g., <i>Quercus pyrenaica</i> , <i>Castanea sativa</i>) and shrub vegetation (e.g., <i>Ulex europaeus</i> , <i>Cistus landanifer</i>). AR: 438–1,481; MAP: 1200; MAT: 9.0
Central Portugal West (CPW)	BR1	Atlantic climate with high precipitation rates. Pastures and deciduous woodlands. Mountainous habitats	Wild boar abundant. Other ungulate species: locally roe deer recently reintroduced. Cattle $n = 555$; goat $n = 229$; sheep $n = 4064$; pig $n = 16$.	Samples collected: 14. Woodlands (e.g., <i>Quercus robur</i> , <i>Pinus pinaster</i>) and shrubs (e.g., <i>Ulex</i> spp., <i>Erica</i> spp., <i>Pterospartum tridentatum</i>). AR: 800–1,381; MAP: 2023; MAT 9.8
Central Portugal East (CPE)	BR3	Continental thermo Mediterranean climate. Pastures and crops with interspersed vegetation, sometimes forming savannah-like structures. Low-altitude mountains with scrubland	Wild boar abundant. Other ungulate species: roe deer widely distributed, and red deer with limited distribution. Cattle $n = 7700$; goat $n = 1643$; sheep $n = 19\ 810$; pig $n = 6115$.	Samples collected: 39. Scrublands (e.g., <i>Cistus</i> spp., <i>Juniperus</i> spp.) and tree species (e.g., <i>Quercus rotundifolia</i> , <i>Quercus pyrenaica</i>). AR: 700–1,000. MAP: 1,195; MAT: 10.5
Malcata Reserve (MNR)	Nature BR3	Continental thermo Mediterranean climate. Pastures and crops with interspersed vegetation, sometimes forming savannah-like structures. Low altitude mountains with scrubland	Wild boar abundant. Other ungulate species: roe deer, widely distributed, and red deer with limited distribution. Cattle $n = 7663$; goat $n = 2873$; sheep $n = 63\ 736$; pig $n = 3208$.	Samples collected: 10. Scrublands (e.g., <i>Cistus</i> spp., <i>Erica</i> spp.) and tree species (e.g., <i>Quercus pyrenaica</i> , <i>Quercus suber</i>). AR: 425–1,078; MAP: 849; MAT 15.7

¹Number livestock animals across the locations (MNP, CPW, CPE and MNR). Numbers corresponding to the 2017 data provided by the Direção Geral de Alimentação e Veterinária (DGAV) [60]. Insufficient data to determine animals raised under intensive and extensive systems.

AR, Altitude range, in metres; MAP, Mean annual precipitations, in millimetres; MAT, Mean annual temperature, in Celsius degrees.