# *Developing sustainable approaches for the control of plant-parasitic nematodes (NEMALAB MED)*

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**Abstract**

Plant-parasitic nematodes (PPN) are a serious threat for economically important crops worldwide, severely affecting the sustainability of the agricultural and forestry systems. Some PPNs are listed as quarantine pests for which restrictive regulations are imposed by phytosanitary authorities. Preventive control management strategies can help in the early detection of these pathogens. At Nemalab (Laboratory of Nematology), we are interested in the biology of PPN and molecular interactions with the plant host in order to develop new sustainable and environment safe solutions for PPN control. Our research is focused on i) molecular systematics and genetic diversity of PPN; ii) molecular plant-nematode interactions and PPN parasitism strategies; and iii) biological control of PPN. We are working with three important pathogens in Portugal: the A2 quarantine pest, the pinewood nematode Bursaphelenchus xylophilus; the A1 and A2 quarantine pests, the grapevine virus-vector nematodes Xiphinema spp.; and regulated A2-non quarantine species, the root-lesion nematode Pratylenchus penetrans. NemaLab is also a certified laboratory for the detection and diagnosis of A1 and A2 quarantine pest, national and internationally, receiving samples from public and private companies of key sectors – tourism, vine, agriculture, and forestry.