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The worldwide genus of long-horned beetles, Monochamus, has drawn a particular attention because several species are known to be a vector of the Pine Wood Nematode (PWN), Bursaphelenchus xylophilus, carrying and transferring the nematode to conifer host trees. Although not a pest in its native North American range, PWN has devastated forests in Asia, and more recently in Europe. The five Monochamus species recorded in Europe, i.e. M. galloprovincialis, M. sutor, M. sartor, M. urussovi and M. saltuarius, may represent potential vectors for PWN. However, only M. galloprovincialis has been proved so far to be associated with PWN invasion of Portugal and Spain. This talk will review the European Monochamus species, with a special focus on their geographic distribution range and ecological requirements. A state-of-the-art of the present situation of pine wilt disease in Europe will be presented, and the potential vectoring role of the different Monochamus species throughout Europe will be evaluated with regard to the situation in Asia. Finally, we will present the ongoing European project REPHRAME that is bringing together Europe's leading experts on PWN, together with colleagues from around the world, to address the key gaps in current knowledge of pine wilt disease and its associated organisms.

Keyword : *Monochamus species, Pine Wood Nematode, Europe, REPHRAME*