

Tracing potential pinewood nematode semiochemicals emitted by its insect vector
*Monochamus galloprovincialis*Jorge M. S. Faria ^{1,2}, Luís Bonifácio ^{1,2}, Maria L. Inácio ^{1,2}, Dora M. Teixeira³, Edmundo Sousa ^{1,2}

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INTRODUCTION & AIM

Monochamus spp., (Coleoptera: Cerambycidae), are vectors for the pinewood nematode (PWN), *Bursaphelenchus xylophilus*, an aggressive phytoparasite that causes rapid pine decline in Asian and European forests (Portugal and Spain). The presence of teneral adults in dead infected wood stimulates PWN transition from its propagative to the dispersive stage, involving extensive morphological changes. The PWNs colonize the beetle respiratory system (trachea) and are transmitted to uninfected pines during maturation feeding. Volatile compounds are believed to mediate this communication. We analyzed the volatiles emitted by *Monochamus galloprovincialis* callow adults.

METHOD



M. galloprovincialis larva were collected from infested wood and kept at 25 °C for the development of pupae and adult stages.

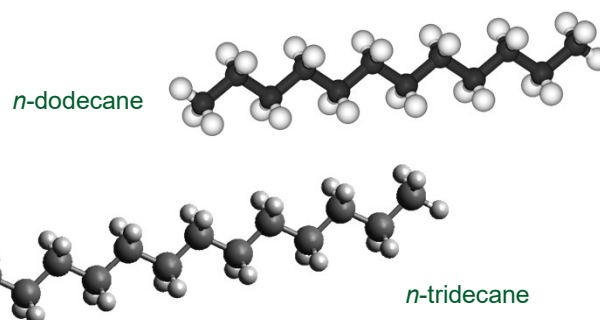


3 individuals of each life stage were set in decontaminated glass flasks and analyzed against a blank. Volatiles were trapped in a Tenax packed stainless steel tubes using a mass flow pump set to a closed loop system, after pumping 34 L of air at 0.6 L/min.

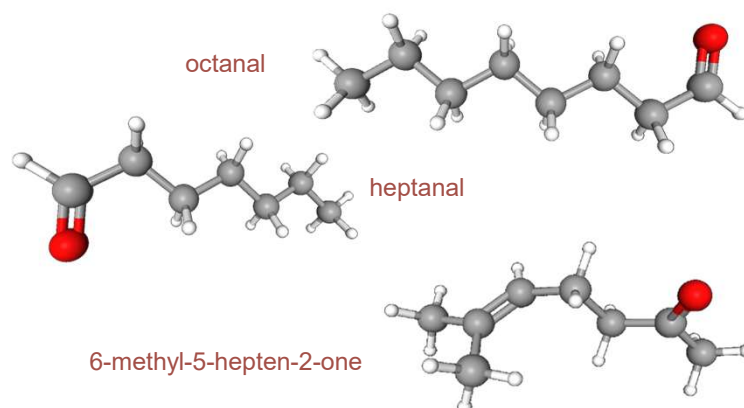
Tenax tubes were analysed by GC-MS with the aid of a thermal desorption unit.

RESULTS & DISCUSSION

Several volatiles were found to be constitutively emitted by the different insect life stages - larvae, pupae, and callow adult males and females



Seven compounds were found only for callow adults, the C12 and C13 aliphatic alkanes, C7 and C8 aliphatic aldehydes, or the ketone 6-methyl-5-hepten-2-one.



CONCLUSION

This knowledge contributes to developing innovative strategies to break the intricate cycle of pine wilt disease caused by the PWN.

FUTURE WORK

Further studies will focus on their attractiveness to the PWN.