Root lesion nematode biocontrol in potato

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Pratylenchus penetrans

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Root lesion nematode (RLN)

Host range over 400 plant species

Feeds on plant cells (roots)

34-35 days at 24˚C, from egg to adult

Millions of € in worldwide agricultural losses

Bioassays setup

2 mg / mL concentration

Dilution in pure acetone

±75 RLN / well

5 replies 3 time points

24h incubation at 25 ˚C

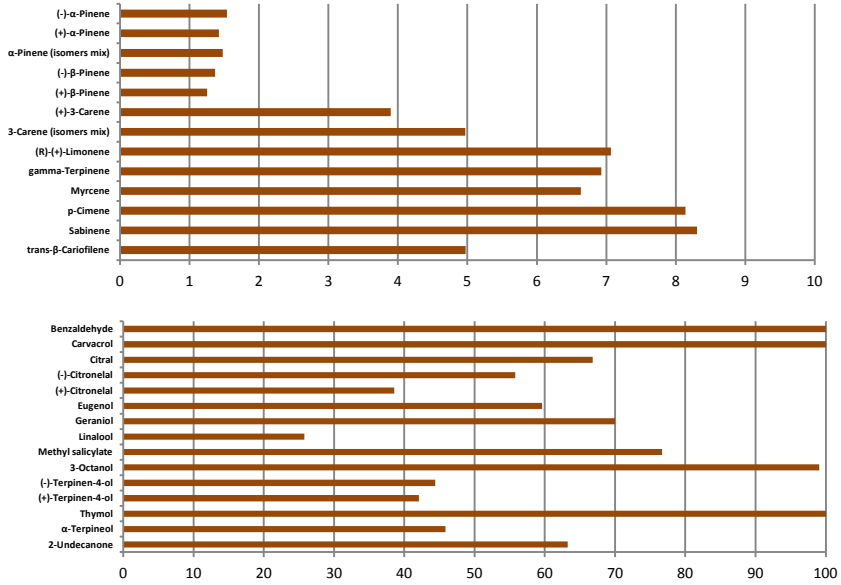
Check nematode status

13 hydrocarbon compounds

15 oxygen-containing compounds

Results

Portugal. WEST time zone



Nematicidal activity of monoterpene hydrocarbon molecules (top) and oxygen-containing terpene molecules (bottom) in *Pratylenchus penetrans*.

At 2 mg/mL after 24h-exposure, two oxygen-containing terpenes (carvacrol and thymol) and a benzoic acid derivative (benzaldehyde) achieved 100% mortality, followed by the fatty alcohol 3-octanol (99%) and benzoic acid derivative, methyl salicylate, with around 76%.

The mortality from the monoterpene hydrocarbons was <10%.

On-going research is evaluating the minimum inhibitory concentration from the compounds able to achieve full mortality. Future steps include evaluating the phytotoxic effects of such compounds in potato plants, one of *P. penetrans* main hosts.

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