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RESUMEN DEL SEGUNDO SEMINARIO INTERNACIONAL DE SANIDAD AGROPECUARIA (SISA)

Insecticidal activity of *Melaleuca leucadendron* and *Citrus reticulata* essential oils against larvae of *Plutella xylostella*

Actividad insecticida de aceites esenciales de *Melaleuca leucadendron* y *Citrus reticulata* sobre larvas de *Plutella xylostella*

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Plutella xylostella, commonly known as the diamondback moth, is one of the most important pests of cruciferous crops in irrigated farming in the Northeast of Brazil at the municipality of Garanhuns-Pernambuco, causing direct damage to cabbage, with losses as much as 100%. The synthetic insecticides have been the main control strategy for this pest. The use of these insecticides has facilitated the emergence of generations of more resistant insects and caused the contamination of crops with toxic residues, thereby placing human health at risk. In order to establish new control practices with lower mammalian toxicity and low persistence in the environment, essential oils extracted from plants have been widely tested as an alternative to these synthetic insecticides. The aim of the present study was to evaluate the insecticidal effects of leaf and peel essential oils of *Melaleuca leucadendron* and *Citrus reticulata* on third instar of *P. xylostella* 24h after treatment. Results were compared with deltamethrin (Decis 25 E.C.) and azadirachtin (Azamax) as positive controls.The leaf disc immersion method was used to determine toxicity of larvae. All evaluated oils showed insecticidal activity against larvae of *P. xylostella* since they caused significant mortality ($p < 0.05$), higher than the negative control (methanol). The *Citrus* peel oil was 5.8 fold more active than Melaleuca leaf oil. When the oils were compared with the standard of efficiency (Decis 25 E.C. and Azamax), we found that toxicity of *Citrus* oil on larvae was 1.6 fold more active than the commercial insecticide Decis 25 E.C. On the other hand, Azamax was only 1.6 fold more active than *Citrus* oil. The *Citrus* oil showed a strong insecticidal activity against *P. xylostella* 24h after treatment, hence demonstrated potential for its development as a botanical insecticide. However further studies are needed, especially to evaluate the cost/benefit ratio regarding its use in the integrated pest management.