

**Abstract:**

The fumigant toxicity of selected essential oils was assessed against the Western Flower Thrips, *Frankliniella occidentalis*. Adult females and larvae were exposed to combinations of essential oil doses and increased carbon dioxide and decreased oxygen levels. Application of such combinations were found to significantly increase the fumigant toxicity against thrips. An increase in exposure time also led to an increase in mortalities in both essential oil alone and combined treatments. These results indicate that by combining applications of the essential oils with e.g. moderately increased carbon dioxide levels (2 to 10%), it may be possible to achieve toxicity levels similar to those of standard chemical fumigants.