

Review of Essential Oils: A Viable Pest Control Alternative

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ABSTRACT Secondary plant metabolites are involved in the interaction with other species, primarily in the defence response against pests. These secondary metabolites sometimes called botanicals or essential oils represent a huge reservoir of chemical structures with pesticide activity largely underutilised in modern times compared to the industrial scale seen with chemical pesticides. Essential oils based pesticides offer several comparative advantages including fast degradation by sunlight and moisture or by detoxifying enzymes, safe and biodegradable, and have a broad spectrum of applications with no re-entry time. Their target-specific nature and lower phytotoxicity have prompted researchers to elucidate the mechanisms of action and structure-activity relationship of these substances in order to evaluate their potential as a viable pest management system. The increasing academic and commercial interest in essential oils is also reflected in the rapid growth of the market size projected to reach USD 11.67 billion by 2022.