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**The impact of *Agave attenuata* extracts: Biotic resistance responses of wheat and their ability to act as repellents/insecticides against the russian wheat aphid****Marieta Cawood and Saba L**

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The initiation of defense responses in wheat by polar (water and methanol) and non-polar (dichloromethane) extracts of *Agave attenuata* were investigated, together with the ability of these extracts to repel the Russian Wheat Aphid (RWA). The olfactometer bioassay was used to determine the initial repellent effect, while mortality after direct application of the extracts indicated the insecticidal ability. Leaf settling as well as in vitro activities of apoplastic PR- proteins was quantified after foliar application of the extracts to susceptible and resistant wheat plants. All the extracts caused significant mortality of RWA's at both 1 hour (63.5–99%) and 24 hours ( 96%) post treatment, although the LC50 value of the water extract was the lowest. The latter also proved to be the most repellent in the olfactometer bioassay during a 10 minute interval. However, foliar treatment of both susceptible and resistant wheat cultivars with the non-polar extract demonstrated to be most effective in terms of leaf settling ability over a 72 hours period, as lower numbers of aphids settled on wheat leaves. Notably, this extract caused significant reduced disease symptoms and resistance against the RWA was achieved in susceptible plants seven days after application. Besides, increased PR-protein activity was observed in uninfected susceptible and resistant wheat, indicating a priming effect. Analysis of the non-polar extract by GC-MS revealed the presence of 2,5-dimethyl-3, 4-hexanediol, methyl jasmonate and n-hexadecanoic acid as major constituents. The results are indicative of the potential of *A. attenuata* extracts to control the RWA in crop plants when applied either correctively or preventatively.

**Biography**

Marieta Cawood has completed her PhD from the University of the Free State, South Africa. She was appointed as Lecturer in the Department of Plant Sciences. Her research focus is mainly based on the bioactivity of plant extracts and the development of new natural products for agriculture, insecticidal, herbicidal or anti-microbial.

**Notes:**