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***In vitro* bioassays used in evaluating plant extracts for tick repellent and acaricidal properties: A critical review**

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Highlights for review

- Ticks cause enormous problems in animal production especially as disease vectors
- There is an increasing resistance of ticks to acaricides used to combat ticks
- Important acaricides have been discovered in plants used traditionally
- Many different bioassays are used making comparisons difficult or impossible.
- Complications with different *in vitro* bioassays are discussed and proposals are made

Abstract

Ticks are haematophagous arthropods which rank closely with mosquitoes in their capacity to transmit disease pathogens of importance to animals and humans. Current control of ticks is based on the routine use of synthetic chemicals administered to animals or their environment. However, years of use and overuse of these chemicals have resulted in the development of resistance in these parasites and negative environmental impacts, hence the need for cheaper, safer and more environmentally friendly alternatives with alternate modes of action. There has

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