



Study on in Vitro Louscidal Properties of Calpurnia Aurea, Otostegia Integrifolia, Nicotiana Tabaccum and Jatropha Curcas against Linojinathus Setosu

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Abstract:

The present study was designed to evaluate the preliminary phytochemicals present in methanolic leaf extracts of *Calpurnia aurea*, *Otostegia integrifolia*, *Nicotiana tabaccum* and petroleum ether seed oil extract of *Jatropha curcas* and to assess their in vitro louscidal efficacy. Accordingly, each plant was subjected to qualitative phytochemical screening for the presence or absence of secondary metabolites such as alkaloids, steroidal compounds, phenolic compounds, flavonoids, saponins, tannins, phlobatannins, triterpens and glycosides using standard procedures. The four selected medicinal plants and a commercially used acaricide (0.1% diazinon) were examined for their louscidal and acaricidal activity against *Linojinathus setosu* at different time intervals using the in vitro adult immersion test at concentrations of 200, 100, 50, 25, 12.5 and 6.25 mg/ml. The findings revealed that extracts of *C. aurea* leaf and *J. curcas* seed oil caused high mortalities of *Linojinathus setosu* at all concentrations with no significant difference from the activity of 0.1% diazinon ($P > 0.05$) within 24 hours of exposure. Moreover, at 200 mg/ml concentration, crude extracts of *N. tabaccum* and *O. integrifolia* produced 93% and 63% mortality respectively against *Linojinathus setosu* within 24 hours of exposure. The current study revealed that crude extracts of *C. aurea* leaf and *J. curcas* seed oil have strong louscidal activity. Moreover, crude extracts *C. aurea* and *J. curcas* showed high mortality at lower concentrations and can be used as a potential alternative to synthetic acaricides to control *Linojinathus setosu* in-



festations. Though, they are not effective at lower concentrations,. Therefore, further investigation should be made on their safety and in vivo efficacy as well as cost effectiveness of the products that exhibited strong louscidal activity with a view of substituting the conventional synthetic acaricides. Key words: *Linojinathus setosu*, Medicinal plants, Mortality, phytochemical screening

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Publication of speakers:

1. Prevalence and species distribution of ectoparasite of domestic dogs in jimma town, Oromia regional state, southwest Ethiopia
2. Study on ruminant tick infestation, phytochemical analysis and in vitro acaricidal effect of *Calpurnia aurea* and *Otostegia integrifolia* extracts on *Amblyomma variegatum*
3. *Bacillus Cereus* isolation and load from raw cow milk sold in Markets of Haramaya District, eastern Ethiopia

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