

# Preparation of an Acaricide from a Tuberos Plant Extract ‘Ayuga’

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## Abstract

Parasitic diseases is a global problem and considered as a major obstacle in the health and product performance of animals. This may be due to endoparasites that live inside the body or ectoparasites such as ticks, mites, fleas and midges which attack the body surface. Among ectoparasites, ticks are very important and harmful blood sucking external parasites of mammals, birds and reptiles throughout the world. Ticks are the most important ectoparasites of livestock in tropical and subtropical areas and are responsible for severe economical losses in livestock. The major losses caused by ticks are due to their ability to transmit protozoan, ricketisia and viral diseases of livestock which are of great economic importance worldwide. Tick borne diseases e.g. theileriosis, babesiosis and ricketisia diseases (e.g. anaplasmosis and cowdriosis and tick associated dermatophilosis are a major health and management problems of livestock in developing countries. There are various ways to control ticks but every method of tick control has certain shortcomings. Chemical control with acaricides was considered one of the best methods but it was shown recently that ticks have developed resistances against a range of acaricides. However, these chemicals are toxic and costly. Problems of acaricide resistance chemical, chemical residues in food and the environment and unsuitability of tick resistant cattle for production systems made the current situation unsatisfactory which is why there is need on the development of alternate and absolute control through botanical acaricides. This study aims at extracting and determining the acaricidal activity of the plant extract in question. This plant has herbal benefits in Kenya as it is used by the local communities as an acaricides to control cattle ticks and spider mites. The extracts will also be tested on a wide range of insects such as cockroaches, aphids and white flies. The application methods to be used are fumigation, dipping and spraying using various concentrations of the extracts. A plant ‘Ayuga’ is collected and identified and its tuber is ground and its powder mixed with either ethanol, methanol or acetone to obtain a crude extract. Acaricidal and pesicidal activity of the extract is studied through various concentration of the extract and the time it takes to kill is noted. Further analysis of the extract through thin layer chromatography is carried out to ascertain its chemical compound. It is my expectation that the result of this work will help a great deal in establishing the main chemical constituents in the plant responsible for acaricidal activity.

**Key words:** acaricides, ‘Ayuga’, pesticidal, plant tuber