

Title: Effects of Aloe Vera Leaf Gel (*Aloe Barbadensis*) on the Microbial Activity of *Bacillus Subtilis* in Embu County

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Abstract

Aloe vera is a perennial draught resistant plant containing more amount of gel in fluctuating amount at different seasons. The plant contains mineral elements such as calcium, iron and zinc. Its gels also contain polysaccharides, proteins, lipids, sugars, minerals, phenolic compounds, glucomannan and acemannan. These components have been found to accelerate wound healing, activating macrophages, stimulating immune system as well as antibacterial and antiviral effects. Acemannan is effect as indirect anti-microbial activity through its ability and stimulate phagocytic leukocytes. The efficacy of Aloe liquid as an antibacterial agent in other areas is shown to have a wide range against gram positive and gram negative bacteria. However, there has been no elucidation for the antimicrobial capability for the Embu varieties. The aim of this study was to evaluate antimicrobial activity of aloe vera gel such as antibacterial, and antifungal activity. Extraction and assay of active ingredients involved ethanol extraction, inoculation onto the bacterial *Bacillus subtilis* cultures and monitoring the inhibition effect. Measures of the zone of inhibition was done on three sets of the same experiment and the best sample reported for further investigation. The results showed that Aloe vera is a potential inhibitor of growth of *B. subtilis* and therefore probably other disease causing microbes. This study provided provided useful information to citizens on the best variety to be used in controlling certain infections.