Synthesis of Cardamom loaded Guar Gum and Gelatin composites, their characterization and antibacterial study

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By Tadvi Atalsharan

Under the supervision of
Dr. Priyanka Shukla

DEPARTMENT OF CHEMISTRY PARUL INSTITUTE OF APPLIED SCIENCE

LIMDA-391760, VADODARA, GUJARAT, INDIA.

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1. **Abstract**

Antimicrobial activity in leaf extract of cardamom (Elettaria cardamomum) against Human pathogenic bacteria, E.coli. Extract showed a broad spectrum of significant antibacterial activity by producing a clear zone of inhibition against E.coli. The clear zone of inhibition in bacterial samples produced by cardamom extract.
Polymer blends based on Gelatin and Guar Gum were prepared by solution casting method. Glycerol was added as a plasticizer with different ratios (5, 10 and 20 %). The physical properties of the plasticized polymer blends were investigated in terms of swelling percent (%). The structure of plasticized polymer blends was characterized by Fourier Transform Infrared Spectroscopy. The obtained results showed that obtained as plasticizer improved the swell ability and expansion study of polymer blend.

2. **Objective**

The objective of the proposed work was to synthesize of cardamom loaded Guar Gum and Gelatin composites, their characterization and antibacterial study.

3. INTRODUCTION

3.1 Extract

3.1.1 Cardamom (Elettaria cardamomum)

Infectious bacterial diseases are becoming serious threat in developing countries like India where peoples are not aware of their primary healthcare. Due to the lack of proper treatment, indiscriminate use of antibiotics and also ignorance are the major problems to control such bacterial diseases. Nowadays, it is a common phenomenon that microorganisms are developing their resistance to many commercial antibiotics that is the major cause of failure to treat various infectious diseases. Therefore, immense clinical problem in the treatment of infectious diseases has been raised [1]. Recently, considerable attention has been focused on identifying naturally occurring active compounds, capable of inhibiting and controlling some infectious bacterial diseases. In this view point, already a lot of spices have been tested for their antibacterial properties such as cumin [2,3,4], cardamom [5, 6], nigella [7, 3], clove [8], ginger [9] etc.