



5TH YEAR RESEARCH & DEVELOPMENT PROJECT

DEPARTMENT OF CHEMICAL ENGINEERING

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DETOXIFICATION OF JATROPHA SEED CAKE TO ANIMAL FEED GRADE

This Report is Submitted in Partial Fulfillment of the Requirements for Bachelor of Engineering in Chemical Engineering

1.0 INTRODUCTION

1.1 Background

Oil seeds are a major source of vegetable proteins, however the presence of toxins and anti-nutrients have limited their use. Of particular interest is the Jatropha seedcake, which could serve as a highly nutritious and economic protein supplement in animal feed. It has a high protein content of about 58%, relative to that of the conventional sources soya cake, which has 49%, and cotton seeds. The essential amino acid contents in both instances, (the conventional and potential source) are comparable. However, investigations have revealed the toxic nature of the Jatropha seedcake, which fact has proved to be a major constraint for its utilization as stock feed, hence the need to come up with possible strategies to overcome this constraint.

This project seeks to address the following terms of reference:

1. Identification of a technically feasible process to de-toxicate the Jatropha seed cake to animal feed grade material
2. Adaptation of process to local operational capabilities
3. Assessment of local feedstock supply patterns
4. Design of the requisite process at an economical plant capacity
5. Assessment of preliminary economics of the proposed plant capacity