3. OBJECTIVE OF THE PRESENT RESEARCH INVESTIGATION:

Mucilages and gums are well known since ancient times for their medicinal value. In recent years, plant gums and mucilages have evoked tremendous interest due to their diverse application in pharmacy in the formulation of both solid and liquid dosage forms as thickeners, water retention agents, emulsion stabilizers, suspending agents, binders and film formers. Apart from its use in finished medicines, newer uses have been found in the preparation of cosmetics, textiles and paint paper. Hence the demand for these substances is increasing and new sources are getting tapped.

There are number of synthetic polymers are available in market for pharmaceutical formulations, but these synthetic polymers have certain disadvantages such as high cost, toxicity, environmental pollution during synthesis, non-renewable sources, side effects, and poor patient compliance. Because of these disadvantages natural polymers such as natural gums and mucilage are preferred to semi synthetic and synthetic excipients because of the following advantages: Low cost and natural origin, Free from side effects, Biocompatible and bio-acceptable, Renewable source, Environmental friendly processing, Local availability etc.

Because of this demand for these substances are increasing and new sources are being developed. India, because of its geographical and environmental position, has traditionally been a good source for such products among the Asian countries. Still, large quantities are imported from Europe to meet increasing demand.

The *Borassus flabellifer* is a tall and erect palm, with large, fan-shaped leaves which are quite unlike the pinnate leaves of other palms. Within India, it is found throughout tropical regions, especially along the peninsular coast and in West Bengal, Karnataka and Bihar. *Borassus flabellifer* contains mucilage, albuminoids, fats and the fresh pulp is reportedly rich in vitamins A and C. The fresh sap is reportedly a good source of vitamin B-complex. Male inflorescence constitutes spirostane-type steroid saponins like borassosides and dioscin. It also contains 20 known steroidal glycosides and carbohydrates like sucrose. The endosperm contains a high proportion of mucilage. The two major polysaccharides present in this endosperm are galactomannan and mannan.
Hence there is a need of development of plant based pharmaceutical excipients for the formulation of the different pharmaceutical formulations.

In the present investigation, an attempt has been made to isolate mucilage from *Borassus flabellifer* fruit, followed by physicochemical and phytochemical characterisation of the isolated mucilage, toxicity studies and exploration of different pharmaceutical applications of isolated mucilage in pharmaceutical formulations.

By this we can provide inert, less expensive, chemically inert natural excipients that can compete with the available synthetic and semi-synthetic excipients that can be used as an effective alternative excipient for synthetic excipients for the formulation of pharmaceuticals.