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STUDIES ON *RAUWOLFIA DENSIFLORA* AND *SOLANUM XANTHOCARPUM*

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SUJEEWA WIMALANAYANA KALPAGE

*Thesis*

*Submitted for the degree of*

We certify that

MASTER OF PHILOSOPHY

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STUDIES ON RAUWOLFIA DENSIFLORA  
AND SOLANUM XANTHOCARPUM

SUJEEWA WIMALANAYANA KALPAGE

ABSTRACT

This thesis deals with phytochemical, antibacterial and pharmacological studies on *Rauwolfia densiflora* (fam. Apocynaceae) and analytical and agronomical studies on *Solanum xanthocarpum* (fam. Solanaceae).

The first chapter includes the general introduction. Second chapter describes the taxonomy of genus *Rauwolfia* and chemistry, biosynthesis and pharmacology of *Rauwolfia* alkaloids. The experimental section deals with the methodology of extraction and isolation of compounds and structure elucidation of various alkaloids isolated from *R. densiflora*. Seven alkaloids namely ajmaline, peraksine, vomifoline, isoreserpiline and three new compounds lankanesine, lankafoline and sridensine were isolated and identified. Studies on quantitative estimation were also carried out for important alkaloids, namely yohimbine and ajmaline.

The antibacterial and pharmacological studies of *R. densiflora* are described in third chapter. These studies revealed that *R. densiflora* root has significant medicinal value.

The fourth chapter gives the general introduction, botany, chemistry and pharmacology of family Solanaceae. This also includes various analytical techniques used for quantitative estimation of solasodine and glycoalkaloids.

*I am deeply indebted to ...*  
*advice and guidance in carrying out the research work.*

*S. xanthocarpum* (*S. Katu wel batu*) is used as an expectorant in indigenous system of medicine. The steroidal alkaloid solasodine is commercially important as a precursor in the synthesis of steroidal drugs and hormones. The estimations of dry matter, solasodine and glycoalkaloid contents of *S. xanthocarpum* at various development stages, and the effects of nitrogen levels and plant spacing are described in the chapter 5. The studies indicate that the best time for harvesting and best N fertilizer level are 3 1/2 months after transplanting and the 80 kg/ha respectively. Solasodine content showed no significant difference with spacings that were studied.

*I am also much obliged to ...*  
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