ANTIMICROBIAL ACTVITY OF MEDICINALLY IMPORTANT PLANT *CLEISTANTHUS COLLINUS* LEAF AND STEM BARK EXTRACT

#P.Vijaykumar[1]*, K.Bixapathi[2], G.Prabhakar[3], P.Kamalakar

1*, 2 and 3. Research scholar, Plant Physiology and Biochemistry Laboratory, Department of Botany, Osmania University, Hyderbad-500 007

4, Professor, Plant Physiology and Biochemistry Laboratory, Department of Botany, Osmania University, Hyderabad- 500 007

***Corresponding author: pv36vijay@gmail.com**

ABSTRACT:

Cleistanthus collinus (Roxb.) Benth. ex Hook.f. Popularly known as Korsi and Garadi and Oduvan is a small deciduous tree of the family Euphorbiaceae .The leaf, root and specially the fruits act violent gastro instestinal irritants. It is also used as cattle, fish poison and also for procuring criminal abortion. In the present study leaf and bark of *C. collinus* were extracted with various solvent using cold percolation method. Methanol was found to be the best extract amongst all the solvent. The methanol extract were then subjected to prescreen assays to check any insecticidal, antifeedent, and GST enzyme inhibitor and antimicrobial activity. Both leaf and bark extract showed some insecticidal activity against insects *Plutella, Xylostella , Helicoverpa, armigera, Spodoptera, litura* and prominent activity against microbes such as *Xanthomonas, Pseudomonas, Rhizoctonia and fusarium*.Leaf extract showed more insecticidal activity (20-25%) where as bark extract showed potential antifeedant activity with 42.20% and 40.81% larval weight reduction against *Plutella, Xylostella* and *spodoptera litura* respectively. Both leaf and stem bark extract were found to have potential antimicrobial activity (MIC 0.1µg/ml) and prominent inhibition activity of crude GST extract from the *P.xylostella* with MIC at 5µg/ml and 1µg/ml for leaf extract respectively. When leaves and bark extracts were partial purified using solvent extraction procedure, chloroform fraction of both leaf and bark extract was found to have insecticidal activity against *Plutella xylostella* (40%) while chloroform fraction of leaf extract was found to have better antibacterial activity. Similarly chloroform extract also showed potential antifungal and GST inhibitor (20-30%). The present study has exploited the probability of having any insecticidal and antimicrobial molecules present in the medicinal plant *Cleistanthus collinus.*

Key words: *Cleistanthus collinus*, Plant extract, Glutathione, *S-transferase, Xanthomonus,*