



## **Allelopathic effect of Swertia xanthone extracts on protein profiling and protein quantity in Vignaradiata leaves.**

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**Abstract:** *Swertia* species are demanding medicinal plants used in India and China. The herbal drug chiretta is obtained by drying the *Swertia* plants. Medicinal importance of this plant is due to the presence of xanthenes, irridoids, secoiridoids, flavonoids and terpenoids. Xanthenes comprises the main bioactives. *S. chirayita* is used as antipyretic, anthelmintic and in treatment of asthma and leucorrhoea. In the present study allelopathic effect of crude xanthone compounds was observed in *Vignaradiata* seedlings, with special reference to protein quantity and protein profiling. Our main objective was to trace out the possibility of variations in the protein banding pattern on account of allelopathic effect in leaves obtained from the seedlings grown in two different conditions. Treatment was administered with 0.05%, 0.1% and 0.5% under lab condition and culture condition. Leaves obtained from the seedlings grown in both conditions were analysed for protein estimation and protein profiling. Protein content was observed to be decreased in lab condition. An enhancement in protein content was observed in culture condition. Highest protein content ( $24.52 \pm 0$  mg/g) was observed in 0.5% *S. densifolia* xanthone treatment. SDS-PAGE Protein profiling indicated occurrence of new protein bands in leaves in both the experimental condition when compared to control. Lab condition treatment gives rise to synthesis of more proteins (13 bands) when compared to culture condition (11 bands) mostly due to the defragmentation of complex protein structures. In both the conditions proteins were de novo synthesized and more of low molecular weight.

**Key words-** *Swertia*, allelopathy, protein profiling.