

observed no increase in the tuber yield in the male clones but there occurred yield increase of about 11% in female clones, when plants were deflowered. Chatterjee and Chatterjee³¹ observed the effects of fruiting phenomenon on diosgenin content of Dioscorea. The effect of short term fertilizers with or without defruiting operations, on D.prazeri and D.composita, revealed that Nitrogen, Potash and bacterial fertilizers inhibited diosgenin biogenesis where-as its synthesis was favoured in plants which had undergone systematic defruiting operations.

Area of the present study :

It would be clear from the above review that though the researchers on various aspects of growth and diosgenin formation in plants belonging to the genus Dioscorea have been undertaken, detailed analytical studies on the problems relating to growth and developmental aspects of the genus are rather limited. D.composita and D.prazeri grow well at higher altitudinal zones, but scientists have not paid much attention to the developmental physiology and patterns of formation of diosgenin in plants growing at higher altitudes of Eastern Himalayas. The present study has been directed in this particular area; with one wildy growing and another introduced species of Dioscorea viz. D.prazeri and D.composita. Studies have been detailed on vegetative and reproductive

growths as well as on synthesis of diosgenin under varying experimental modifications. In addition, analysis of some biochemical parameters of the aerial parts have been made during the progress of different developmental stages with a view to understand the role of these bio-parameters in synthesis of active principles.

Different experiments undertaken in the present study include treatments with auxin and it's analogue; photoperiods; agronomical trials and physical manipulation techniques at altitudes 1100-1200 meters. The study have been performed with a view to understand the process of diosgenin synthesis in relation to modified growth, development behaviour and biochemical status of the plants under conditions of their high altitudinal placement.