6. SUMMARY AND CONCLUSION

The aim of the present study was isolation and identification of bio active compound (Terpenoid) from *D. carota* further the isolated Terpenoid is to be infused on to *S. lycopersicum* and analyses the growth measurement on both control and infused plants and its fruits for the effects of infused compound were carried out.

This study was primarily designed to explore the possibilities of infusing the compound extracted from the prime plant to the targeted plant which does not possess such characteristics or compound. The primary objective behind the investigation lies in amplification and addition of new nutrients in commonly used plants which are lags in rich nutrients. Plants are becoming potential source for phyto constituents with varied pharmacological activities. In the present study, *Daucus carota* L. was selected as the prime plant the targeted compound terpenoid has been identified and isolated from the aforesaid plant using TLC and column chromatography and duly confirmed by UV FTIR. Further terpenoid compound has been infused on to tomato plant by different methods (seed soaking method and compound infusion).

*S. lycopersicum* seeds were soaked in terpenoid compound for twenty four hours produced good results but the difference between control and treated was noted in time delay namely the treated took nearly three to four weeks for initial germination whereas control took only ten days. The replica was found to be noted in the growth and yielding of fruits as well. It took roughly ninety days for control where as it was nearly fifteen days delayed in case of budding of fruits in treated.
The preliminary phytochemical analysis was performed to detect the nature of the phyto-constituent and their presence in growing normal plant fruit, infused plant fruit and second generation fruits. The initial screening in control plant confirms the presence of alkaloids, carbohydrate, phenol, flavonoids, coumarin and the terpenoid was absent in control plant, where as in the extract of targeted plant confirms the presence of alkaloids, carbohydrate, phenol, flavonoids, coumarin and Terpenoid. So the initial finding itself paved the way for the further analysis that is presence of terpenoid in the treated extract confirms the absorption and imbibing of infusion. Furthermore the phytochemical screening of second generation of treated plant also confirms the presence of targeted compound terpenoid. There by the transportation of infused compound has been successfully done to the next generation of plants as well.

The very purpose of the present study has been attained by the confirmation of transportation of the targeted compound not only to the first generation but to the second generation plant as well there by increase the pharmacological capacity of the commonly consumed plant. Recent research on the chemistry, physiology and molecular biology of terpenoid provides a convincing body of evidence that these plant terpenoids are essential regulators of plant growth and development.

Free radical-mediated oxidative stress is believed to be the primary cause of many disorders, such as cardiovascular diseases, brain dysfunction, cataract, diabetes mellitus, arthritis, cancer and ageing. In the treatment of these diseases, antioxidant therapy has gained utmost importance in the recent years. Plants are a major source for the discovery of new products of medicinal value for drug development. Different strategies including the use of in vitro system have been extensively studied to improve the production of plant chemicals.
From our observations the control and treated plants reacts differently that is the treated extract possess high capacity anti-oxidants than the control. It has been strongly advocated even after various trials using different methods. Whereas the difference in antibacterial activity, by agar well diffusion method, between control and treated recorded drastically that is the treated recorded high inhibition rates whereas control does not. When comes to antifungal activity of all the respective formulations of extracts of *S. lycopersicum* (control and treated plant fruits) were screened for the *in vitro* growth inhibitory activity against some bacterial and fungal species. The overall results found to be replica of the anti-bacterial capacity that is treated activity as well compared to control plants.

The anti-diabetic capacity of the control and treated yields expected results and follows the thread of other results since the terpenoid played vital role and changed the results as expected. The various methodological confirmation of anti-diabetic capacity yields the same results that is treated downplays the control in this case as well.

It can be concluded from the results most of the phytochemical present in plants is soluble in organic solvent like ethanol. In the studied species *D. carota* and *S. lycopersicum* have significant amount of phenolic compounds. The species *S. lycopersicum* exhibited a markable Anti-oxidant activity, Anti-diabetic activity and Anti-microbial activity.

But there are many avenues left for the further confirmations and investigation. Further studies will be undertaken to elucidate the mechanism of action by which the plant exert their antimicrobial potential, antioxidant activity, anti-diabetic and even study isolate active compounds and thorough examination needs to be carried out for the efficacy of bioactive compound is possible. However, our results give a rational support to the traditional use of *D. carota* and *S. lycopersicum* in the field of allopathic medicine.