

CHAPTER VI

CONCLUSION

This study underscores the significant impact of *B. velezensis* S141 inoculation on the growth profiles and gene expression of *C. sativa* inoculated with S141. Both laboratory and greenhouse cultivation trials evidenced that S141 could positively impact various facets of cannabis growth, comprising increased stem size, height, chlorophyll content, and the dry weights of the leaves, stems, and roots. Furthermore, RNA sequencing analysis detected considerable modifications in gene expression, notably in metabolic processes, cellular components, and catalytic activities, underlining the intricate mechanisms governing the symbiotic relationship between S141 and cannabis. Moreover, pathway enrichment analysis signaled key pathways linked to plant growth and defense, accentuating the potential of S141 as a bioinoculant for enhancing cannabis cultivation practices.