

Applications of Plant Molecular Farming

Plant molecular pharming to overcome the global impact of neglected tropical diseases

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Neglected tropical diseases (NTD) include a broad group of diseases that affect close to two billion people mainly from low and lower-middle income countries. NTD's account for 12% of the global disease burden and approximately 200,000 deaths annually. The updated 2017 World Health Organisation's NTD list recognises 20 major NTDs, 19 of these are infectious diseases caused by helminths, protozoa, bacteria or viruses. Snakebite envenoming is the only non-infectious disease on the list, and it has been included due to its high disease burden and impact, especially on young people and children. Global interventions for achieving 90% reduction in NTD treatment by 2030 NTD include prevention, control, elimination and eradication strategies. However, there are still gaps in the research and development of therapeutics and vaccines and limited access to therapeutics, vaccines and diagnostics. This chapter broadly discusses NTDs, progress made and the insufficiencies in the landscape of therapeutics and vaccines and the critical role of plant molecular farming in response to the global disease burden of NTDs. Plant molecular farming presents an opportunity to develop new cost-effective NTD-targeting therapeutics and vaccines and cost-effective NTD diagnostic tools for increased equitable access by vulnerable populations in resource-limited settings.