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(54) Title of the invention : "Application of Sewage on the Germination and Early Development of Amaranthus"

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(57) Abstract :
The invention explores the effects of raw sewage irrigation on the germination and early growth of Amaranthus plants, assessing its potential as an alternative water resource for sustainable agriculture. Various sewage concentrations (10%, 25%, 50%, 75%, and 100%) were applied to evaluate germination rates, root and shoot development, and overall plant health. The study revealed that higher sewage concentrations significantly increased electrical conductivity (EC) and total dissolved solids (TDS), leading to severe phytotoxicity and stunted growth. Optimal growth conditions were observed at 10% sewage concentration, which showed minimal toxicity and better seedling development. This research provides insights into safe sewage utilization for irrigation, promoting sustainable water resource management while addressing environmental and agricultural challenges.

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