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Effect of Mutagenic Treatments on Seed Germination, Seedling Growth, and Survival of *Capsicum annuum* L.

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Abstract: *Chili (*Capsicum annuum *L.) is an economically significant crop valued for its capsaicinoids, carotenoids, and essential vitamins, making it a staple in culinary and medicinal applications. Enhancing yield, nutritional composition, and secondary metabolite content are primary objectives in contemporary breeding programs to maximize crop profitability. The success of such programs relies on genetic diversity, which can be achieved through induced mutations. Chemical mutagens, such as sodium azide (NaN_3), are widely used to induce genetic variability by altering nucleotide sequences and generating novel alleles. This study investigates the effect of sodium azide on seed germination and plant growth in* Capsicum annuum. *The experiment aims to evaluate morphological variations induced by the mutagen, assess germination rates, and analyze subsequent growth responses*

Keywords: *Capsicum annuum,*Chili, Sodium azide, Germination percentage

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