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CONSEQUENCES OF SODIUM AZIDE ON PERCENT SEED GERMINATION AND PEROXIDASE ISOZYME PATTERNS IN COWPEA

Peroxidase is one of the important enzymes present in all tissues and performs catalytic functions. It is suitable as a model enzyme for studying the effect of any mutagen. In the present investigation, an attempt was made to study the effect of sodium azide (SA) on peroxidase composition in cowpea (*Vigna unguiculata* L. Walp.), with an objective of finding its mode of action i.e. whether it has promoting or inhibitory effect on the enzyme synthesis and whether the action is specific or random. The seeds were treated for two hours with various SA concentrations viz. 0.0005 M, 0.0010 M, 0.0015 M, 0.0020 M, 0.0025 M and 0.0030 M. These seeds could germinate on moist filter paper in Petri plates at room temperature (20–25°C) for about three and seven days respectively and later analysed for seed germination. Peroxidase enzymes were extracted from the seedling samples and subjected to electrophoresis. Results indicated that there was a gradual decrease in seed germination percentage with an increase in the concentration of SA. SA retarded the growth of radicle and plumula. PAGE analysis of peroxidase enzyme composition of control cowpea seedlings showed presence of three peroxidase isoforms, but 0.0025 M SA treated seedlings showed presence of five peroxidase isoforms. This clearly indicated that, SA induces synthesis of certain peroxidase isozymes. Similarly, certain peroxidase isozymes present in control seedlings were seen missing in the SA treated seedlings. This evidently reveals that SA along with seed germination hampering can also inhibit the synthesis of certain enzymes.

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