

Effect of hydro priming on biochemical properties sunflower hybrid and its parental line during seeds storage

J. SHANTHALA, R. SIDDARAJU AND PARSHIVAMURTHY

SUMMARY

Priming of seeds enhances the physiological quality through activation of the biochemical events, which advances seed germination processes without radical emergence, enabling rapid and uniform germination of seeds coupled with high vigour. This has helped the farmers to achieve better plant stand in the field that leads to uniform crop stand and improve in crop yields. This in view, an experiment on biochemical and molecular basis of seed priming was initiated to identify seed specific markers to achieve precision in priming in sunflower hybrids and its parental lines. The seed samples of the sunflower hybrids and its parental lines were subjected to hydro priming treatment at 25 °C for 18 hr and evaluated for seed quality, biochemical parameters, enzyme activity and molecular analysis and compared with control. The result revealed that primed seeds manifested maximum mean seed germination (92%), speed of emergence, mean seedling dry weight (21.0 mg), vigour index, total dehydrogenase (2.69) activity of sunflower hybrid KBSH-53 and lowest electrical conductivity was noticed in KBSH-41 (73.4 dSm⁻¹), total DNA content increased in primed seeds (998 ng/µl). It is concluded that the hydro-priming treatment enhanced seed quality parameters leading to better crop stands with higher yields in sunflower hybrid KBSH53 and its parental lines.

Key Words : Biochemical parameters, Enzyme activity, Molecular analysis, Sunflower hybrids, Seed priming

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MEMBERS OF THE RESEARCH FORUM

Author to be contacted :

J. SHANTHALA, Department of Genetic and Plant Breeding, College of Agriculture, University of Agricultural Sciences, GK.V.K., BENGALURU (KARNATAKA) INDIA Email: shanthala16@gmail.com

Address of the Co-authors: R. SIDDARAJU AND PARSHIVAMURTHY, National Seed Project, University of Agricultural Sciences, G.K.V.K., BENGALURU (KARNATAKA) INDIA