

인삼종자 초저온보존 후 Ascorbate 및 Glutathione의 산화환원 변화

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Effect of cryopreservation of ginseng (*Panax ginseng* C.A. Meyer) seeds on redox ratio of ascorbate and glutathione

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ABSTRACT

Ginseng seeds are one of short-lived seeds species which loose their viability easily in the condition of conventional storage. Cryopreservation using liquid nitrogen (LN) has been recommended as a alternative storage for this kind of germplasm short lived or dessiccation-sensitive. This study was performed to find out whether cryopreservation could affect physiological change such as enzyme activity induced by reactive oxygen species. In this work, the redox ratio of ascorbate and glutathione were examined onto ginseng seedlings before and after LN storage of seeds for 1 day using spectrophotometer method. Reduced ascorbate (ASA) was increased while oxidized ascorbate (DHA) was decreased slightly for both after 1d-LN storage. And for glutathione also, reduced form (GSH) was increased while oxidized form (GSSG) was decreased slightly for both after 1d-LN storage. Consequently total phenol compound and ion leakage after LN storage showed no significant differences. Additionally root growth from the seeds after LN storage was not affected by ultra low temperature. From the above results, we may suggest that cryopreservation could be recommended for storage tool of ginseng seeds even with low viability also and expected to make slower seed aging process during preservation period through further study.

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