

Alterations in the pattern of peroxidase isoenzymes and transient increases in its activity and in H₂O₂ levels take place during the dormancy cycle of grapevine buds: The effect of hydrogen cyanamide

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Polymorphism of peroxidase (Px) and changes in its activity and in H₂O₂ content were studied in buds of grapevine during dormancy. Three isoforms of Px were detected in bud-extracts, two basic and one acidic, however, the pattern of Px isoenzyme changed with the progress of dormancy. Thus, basic Px isoenzymes disappeared from extracts previous to the onset of bud-break, while acidic isoenzymes remained relatively unaltered throughout the whole dormancy period. Furthermore, transient increases in the activity of Px and in the content of H₂O₂ occurred previous to endodormancy release, when buds were fully dormant. Hydrogen cyanamide (H₂CN₂), a potent bud breaking agent in grapevines advanced as expected budbreak, but also advanced the occurrence of Px and H₂O₂ peaks and the changes in Px isoenzymes pattern. The results suggests that H₂O₂ could function as a signalling molecule inducing endodormancy release, and changes in Px polymorphism could be a useful marker to study endo/ecodormanc