

Abstract:

The epidermis of 'Red Globe' grape was shown to be more sensitive to SO₂ than that of 'Longyan' grape as some bleach spots occurred easily on its surface. Epidermis was shown to be the main entrance for the external SO₂ to penetrate inside the fruit. The epidermis microstructure of 'Red Globe' grape and the microstructure of the area damaged by SO₂ were observed with a scanning electron microscope. Epidermis structure showed a close relationship with the sensitivity to SO₂. 'Red Globe' grape showed a loose epidermis wax structure with some holes while 'Longyan' grape showed a tight epidermis wax structure. The wax structure of the epidermis was destroyed by the SO₂, leaving the epidermis exposed to the SO₂. The peel of 'Red Globe' grape had a lower concentration of superoxide dismutase (SOD) than that of 'Longyan' grape. Chloramphenicol acetyltransferase (CAT) activity decreased rapidly at the first stage of storage in the peel of 'Red Globe' grape. Malondialdehyde (MDA) concentration in the peel of 'Red Globe' grape showed a greater increase than that of 'Kyoho' grape, which was more resistant to SO₂.