

**Title** Control of table grape storage rots by pre-harvest applications of salts  
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### Abstract

The activity of 19 inorganic and organic salts to control table grape storage rots was preliminarily assessed by *in vitro* and *in vivo* tests. Several salts reduced the growth of *Botrytis cinerea* Pers. on amended (0.1–2%, w/v) glucose–agar; however, only calcium chloride (CC), potassium carbonate (PC), sodium bicarbonate (SB) and sodium carbonate (SC) significantly reduced the incidence of grey mould on small table grape bunches (cv. Italia). PC, SB and SC showed a similar effect in the *in vitro* (inhibition of mycelial growth and conidia germination of *B. cinerea*) and *in vivo* tests (reduction of incidence of grey mould on table grape), whereas CC was effective only *in vivo*. Efficacy of salts applied before harvest was extensively evaluated in small-scale tests (CC, PC, SB, and SC), and in large-scale tests (CC, SB, SC). In both, small- and large-scale tests, field applications of salts resulted in a significant reduction of botrytis storage rots. Field rots (mainly sour rot) were significantly reduced when vines were sprayed at least 21 days before harvest. In large-scale tests, simulating the practical commercial conditions in Southern Italy, two salt applications (30 and 90 days before harvest) of CC, SC, or SB significantly reduced postharvest grey mould from 63.8% among untreated controls to 22.5, 31.2, and 29.5%, respectively. In the same conditions, field rots were 23.4% (untreated control), 9.5% (CC), 11.9% (SC) and 12.0% (SB). On the whole, salts showed an activity higher or similar to that of conventional chemical treatments. Finally, results from specific tests suggested that pH and inhibition of polygalacturonase activity of *B. cinerea* seem to play a role in the mode of action of SB, SC, PC and CC.