

Infection by *Cryptosporiopsis perennans* in Virus-Infected Apple Fruits cv. Maxi Gala

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The relevance of the disease known as bull's eye rot caused by *Cryptosporiopsis perennans* is increasing as a post-harvest disorder. The present study had the objective of to analyze if susceptibility to this disease in fruits from virus infected apple trees is affect and analyze biochemical parameters which could be indicative of host resistance mechanisms triggered by viruses. Treatments consisted of infections by Apple stem grooving virus (G), Apple chlorotic leafspot virus (C), Apple stem pitting virus (P), and Apple mosaic virus (M) individually or in mixed infections in apple cv. 'Maxi Gala': C, CPM, G, GP, GCP, GCPM as well as a non-infected control. The fungus was inoculated directly on to fruit lenticels by means of PDA-disks and fruits were incubated in humid chambers. Fourteen days later evaluations began with records of the area under the disease progress curve (AUDPC) every 3 days, for 32 days post-inoculation. Disease incidence (fruit with necrotic lenticels) and severity (number necrotic lenticels) by means of the AUDPC, as well as the activity of peroxydases (PO) and polyphenol oxydases (PPO) in the treatments G, GCPM and control were evaluated. The experiment was conducted twice: at harvest and after 1 month post-harvest storage. The results showed that treatments G and GCPM induced higher incidence of bull's eye rot (90%), as well as low activity of the PO, without any statistically significant effect on the PPO. The treatments GP, GCP and CPM showed intermediate results (50%) and C did not differ from the control treatment. The virus infections induced significantly higher disease severity only after storage. To our knowledge, this is the first study to reveal that virus infections increase the incidence, severity of infections caused by *C. perennans* and interfere negatively with the activity of the enzyme peroxydase in apple fruits.

Keywords: bull's eye rot, AUDPC, lenticel rot, peroxydase, polyphenol oxidase

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