

Abstract:

The most important cause of decay in kiwifruit (*Actinidia deliciosa* var. *deliciosa* cv. Hayward (A. Chev.) C.F. Liang et A.R. Ferguson) after harvesting is grey mould caused by the fungus *Botrytis cinerea*, Pers (B.c.). The intensity of *Botrytis* attack on the fruit, evident only a number of months after harvest, may vary considerably from one year to the next and from one orchard to another. The symptoms of stem end rot do not appear in the orchard, but start to become evident on the fruit from the stem end after about 2-3 months in cold storage at 0°C. *Botrytis cinerea* infection is one of the main obstacles to long term storage of kiwifruits and in unfavourable conditions may cause considerable damage (even by more than 50%). In the context of integrated production management, studies have been carried out to establish the influence of summer pruning. An attempt was made to investigate how higher light interception levels and better exposure to air and sunlight could influence plant metabolism in such a way as to stimulate production of substances such as phytoalexin compounds, able to make the fruit resistant to *Botrytis cinerea*, or at least limit and slow down its development. The study was carried out for 5 years and performed in Northern Italy on a kiwifruit orchard where there was a systematically high incidence of fruit affected by stem end rot caused by *Botrytis cinerea* during cold storage. The experimental design consisted of unrepeated lines. Two whole rows in the orchard were chosen, each consisting of 30 vines. Winter pruning was performed to allow the same bud-load on the control (A) and treated vines (B). However, the treated vines were also summer pruned. The results obtained showed that the type of pruning performed on row B significantly reduced the incidence of the pathogen (up to 50%). It was also extremely interesting to note the trend in the total phenolic content. It could perhaps be suggested that the greater exposure to sunlight and air characterising the fruits in row B could influence metabolism of the phenolic compounds and encourage greater and more rapid mobilisation of these compounds in the fruit during the subsequent storage period. Further confirmation is required. In particular, the dynamics of the phenolic molecules within the kiwifruit tissues and their possible fungistatic activity require further and more detailed studies.