

Table 18. Effect of leaf scar age on leaf scar infection percentage and lesion length of infected leaf scars in all three species (cherry, peach and prune) (2002).

Treatment	% leaf scar infected	Lesion length (mm)	No. of stems inoculated
0 hour	78.6 ± 16.6 ab	3.9 ± 2.0 a	12
2 hours	82.5 ± 11.0 a	2.7 ± 0.9 b	12
4 hours	69.0 ± 7.7 ab	2.4 ± 0.5 bc	12
12 hours	43.5 ± 18.7 a	1.7 ± 0.4 c	12
1 day	29.7 ± 15.1 b	2.0 ± 1.1 bc	12
2 days	3.7 ± 9.9 c	0.2 ± 0.6 d	12
5 days	0 c	0 d	12

Summary

Bacterial canker is a complex disease of stone fruit species. Although many factors are involved in this complex, we believe ring nematode infestation plays the most important role in predisposing the host plant to BC. However, it takes about 2 years for the nematode predisposition to be in effect. Ring nematode infestation had no significant effect on peach water relations as indicated by stem water potential. Ring nematode infestation could induce accumulation of total soluble phenolic compounds in the bark, which may be associated with an elevation of arbutin, a plant signal molecule inducing syringomycin gene expression. Calcium trunk infiltration did not increase calcium content in the leaf and bark tissue due to the low concentration of calcium injected. Foliar calcium spray did not decrease the host plant susceptibility to BC as well, although it may increase leaf or bark nitrogen or calcium in some cases, suggesting the necessity of calcium involvement in the active site of the host cell. IAA foliar spray may not have any effect on host susceptibility to BC. Urea application appears to decrease the accumulation of total phenolic compounds in the bark. Leaf scar may not be a major avenue for Pss to cause any apparent stem infection.

References

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