



# Sunrise Lime Dieback

*By Anthony Hele, Industry Development Consultant - Native Foods*

## Introduction

The Australian Sunrise Lime A is a CSIRO-selected native citrus hybrid, with a parentage that includes Australian finger lime (*Citrus australasica*), mandarin and cumquat.

The variety is available through a contract production arrangement with Australian Native Produce Industries Pty Ltd and small but increasing plantings are occurring in South Australia, Victoria and New South Wales, and to a lesser extent in Queensland and Western Australia.

A disease, labelled 'Sunrise Lime Dieback', has appeared recently in some orchards and appears to be confined to this cultivar, although it is similar to diebacks that occasionally occur in other citrus varieties.

## History and Symptoms

During spring 2000 a twig and limb dieback was observed in Sunrise Lime in several districts, including the Adelaide Hills, Riverland and Sunraysia areas. In general, the first symptom noted by growers was the wilting of leaves and death of branches, up to 1cm in diameter, although this symptom was actually preceded by the (often unnoticed) death of smaller twigs and shoot tips.



**Figure 1. Pronounced dieback symptoms.**

While most Sunrise Lime trees in each affected block showed symptoms, only some branches on each tree were affected, with adjacent branches apparently healthy and often showing flush growth. Adjacent Australian Blood Lime A and Australian Outback Lime A trees as well as other nearby citrus varieties were unaffected.

Several growers also report observing similar, though apparently less severe, symptoms in previous seasons.



## **Causal Agent**

The causal agent for the disease has been identified as a *Phoma* sp. fungus.

Fungi in this family are often saprophytic, that is they only attack dead wood and not living tissue. However, under some situations and in some citrus varieties they are known to invade live wood, with the dieback seen in this case a typical symptom of infection.

It appears that Sunrise Lime has a particular sensitivity to this fungus and the presence of the disease on this cultivar is unlikely to pose a threat of spread to other citrus varieties.

## **Incidence**

To-date, the disease has only been observed in the spring. It appears likely that the mild temperatures and/or increasing moisture in the form of rain, heavy dew or fog at this time of year may be necessary for disease development. It is also likely that healthy tissue will resist infection and twig dieback or bark injury from causes such as sunburn, water stress, fertilizer burn, wind abrasion, hail injury or pruning wounds may be necessary for infection to occur.

## **Control**

Good general management that minimises water stress, fertilizer burn, wind abrasion and other factors that result in twig death and bark injury should help reduce potential infection points and disease incidence.

Routine pruning in winter-spring, which may allow the entry of the fungus, should be avoided. However, at any time of the year dead wood that may have been killed by the fungus or could be harbouring the causal organism should be removed back to healthy tissue. Removed dead wood should be burnt and all pruning cuts painted.

Copper sprays, which are often routinely applied to control septoria, greasy spot and anthracnose in citrus, are likely to be a successful protective measure and similar dieback diseases in other cultivars overseas are effectively controlled by periodic copper sprays from autumn to early winter.

Given competent general management that minimises and removes dead wood, precautionary copper sprays and vigilance in spring, the disease is not expected to be a significant problem in the future.

## **Acknowledgements**

The assistance and input of Dr Steve Sykes, CSIRO Plant Industries; Barbara Hall, SARDI Horticulture Diagnostic Service and Dr Pat Barkley, Auscitrus, in the identification and control recommendations for this disease is gratefully acknowledged.

## The Author

Anthony Hele's qualifications include a Bachelor of Science in Agriculture from the University of Sydney and a Graduate Diploma in Agribusiness from Monash University.

His previous work has strongly focussed on new and alternative horticultural crops and industries and includes six years as an Extension Horticulturist with the NSW Department of Agriculture, providing a comprehensive advisory service in technology and management to individual horticultural producers, groups and organizations; two years as a Research Horticulturist/Farm Manager with Western Australia's Murdoch University, conducting crop nutrition and water use studies and provided day-to-day management and long-term technical and business planning on a commercial orchard; and six years as a private Consultant, providing technical and business management services to horticultural producers, agribusinesses and the government and educational sector.

In January 2000 he commenced as Industry Development Consultant – Native Foods, a position jointly funded by Primary Industries and Resources South Australia and Australian Native Produce Industries Pty Ltd. The position aims to assist in the sustainable economic development of the native foods industry in South Australia.

### Disclaimer

Australian Native Produce Industries Pty Ltd (ANPI) gratefully acknowledges the support of Primary Industries and Resources South Australia (PIRSA) in providing funding for the Australian Native Foods Project. ANPI is solely responsible for the authorship of this publication. ANPI and PIRSA and their employees do not warrant nor make any representations regarding the use of the information contained herein as regards to its correctness, accuracy, reliability, currency or otherwise. You assume the entire risk from the implementation of this information/advice. ANPI and PIRSA and their employees expressly disclaim all liability and responsibility to any person using the information/advice contained in this publication.