

THE PRACTICE OF RING CUTTING IN CITRUS TREE MANAGEMENT

There is a Better Way with a Science-based Nutritional Program

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What is Ring Cutting

It is a commonly used method to strengthen the reproductive growth and weaken the vegetative growth of fruit trees. It forms part of common practice in fruit tree cultivation in China.

By damaging the phloem of fruit trees, and blocking the downward transportation of photosynthesis products, root growth and development is temporarily suppressed thereby inhibiting the pumping of summer shoots, promoting flower bud differentiation and helping to set fruit.



The Practice of Ring Cutting

However, in the actual ring cutting, farmers are particularly prone to two operational errors.

- The first is over-deep ring cuts which results in a particularly slow recovery of tree wounds, blocking nutritional transmission and causing yellowing disease. If severely cut it will make it difficult to heal the wound and the tree will be ulcerated.
- The second is to cut the small and weak trees and pursue the number of fruit hanging blindly.

Citrus farmer Li Liangde's sugar orange orchard in Hejiao Village, Suqiao Town, Guilin City, Guangxi, was cut too deep in the process of ring cutting at the end of last April, resulting in more than 80 fruit-bearing trees being dehydrated, yellowed and suffering fruit drop.



Improper ring cutting caused the tree to yellow

How to Prevent Yellowing

After the on-site observation by the staff from Leong Cooperative in Yongfu County and RLF's Technical Team, it was found that the yellowing of the tree was very serious, and it was decided to adopt a nutritional supplement scheme combining both foliar spray and furrow injection.

It was suggested that furrow injection with RLF **Dynamo High-P** at 500 times dilution, as well as a foliar spray of RLF **Caltro Plus** at 1000 times dilution at the end of August 2018 would benefit the effected trees. **Dynamo High-P** is a high-phosphorus fertiliser with more than 320g/L phosphorus content, 100% water solubility, high absorption efficiency, giving improved root activity and strengthened root absorption efficiency which promotes root growth and durability. It also gives chelated copper, manganese, zinc and other trace elements, effectively supplementing crop nutrition. Benefits gained include alleviating crop deficiency symptoms, promoting flower bud differentiation and enhancing photosynthetic intensity. Together with the use of **Caltro Plus**, it can effectively relieve root pressure, restore tree vigour and improve the yellowing symptoms by supplying calcium and magnesium nutrition through the leaves.



After about ten days, furrow injection with RLF **Plant Milk High-K** at 500 times dilution and a foliar spray with RLF **Fruits & Veggies Plus** at 1000 times dilution. **Plant Milk High-K** is a high potassium formula, which promotes fruit enlargement, improves fruit shape and increases fruit yield. And **Fruits & Veggies Plus** contains a balance of the twelve nutrients necessary for the growth of sugar oranges. It perfectly solves the problem of antagonism between elements, supplements tree nutrition and prevents symptoms of deficiency.



By Comparing Two Orchards

After two applications of the suggested nutritional supplementary program, 92% of the yellowing fruit trees treated had returned to green and sprouted autumn shoots. The Control trees sustained severe yellowing and basically died. The following observation pictures taken in mid-September 2018, show the Control orchard which had basically died, against the 92% recovery success rate for those trees treated with the RLF nutritional program.



As this picture image shows, the leaves of the RLF-treated trees turned green, the fruit continued to expand and the trees recovered gradually.

The Correct Ring Cutting Method

There is a correct way to ring cut trees if growers want to persist with this method, but care should be taken to correctly gauge the status of the trees. According to the growth and nutritional status of the tree, a sturdy tree can be ring cut ring stripped, medium size and health trees may also be ring cut but small or weak trees should not be touched at all.

The procedures should be done on a sunny day, since a tree will more easily infect on a rainy day. It is also more difficult to operate efficiently. To cut off the phloem of the main stem or main branch, cut a circle in phloem or peel a circle to xylem. The ring cutting or ring stripping is just to the xylem. Too deep a cut will cause damage to the xylem and too shallow will play no role at all in blocking nutrient reflux.

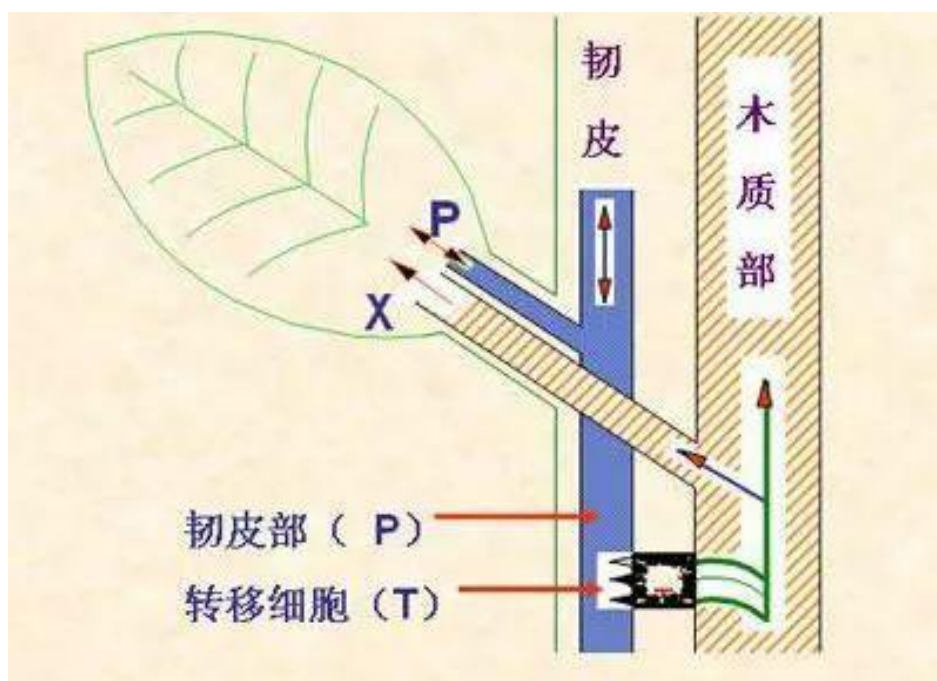


Diagram showing the ring cutting process

When cutting, it is generally preferred to use a relatively sleek, less concave and convex branch. When the ring is cut, the force should be uniform.

So, follow these procedures carefully.

1. choose a sunny day
2. sterilise the ring cutting tools
3. apply cytokinin and wrap the cutting mouth with electrical tape bandage to facilitate the healing of the cut
4. furrow inject with RLF **Dynamo High-P** and foliar spray with **Caltro Plus** or **Fruits & Veggies Plus** and brassinolide

Nutrient supplementation is achieved through the leaves to reduce root resorption pressure at an interval of ten days. If the cutting is too deep, it will damage the xylem, causing tree yellowing and fallen leaves. If this happens it is recommended to abandon the fruit and keep the tree, and then restore the fruit in the second year.

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