THE BETTER CROP PROGRAM DEVELOPED FOR FARMERS AND GROWERS IN CHINA

Part 02 | The Essential Role Played by Micro-Nutrient Boron

INTRODUCTION

The RLF Nutrition Education Centre has written a series of articles to not only help educate the staff Teams who go into the field, but in terms that clearly explain the principles of crop nutrition and fertiliser management for farmers and growers all across China. We are replicating some of these programs in this Series of articles because the message is such an important one.

Crop production is complex and comprehensive, and this article looks specifically at the issue of **the role played by boron in addressing many symptoms of deficiency**.

SHOWING THE INCREMENTAL RESULTS FROM FIVE DIFFERENT TRIAL SITES OF POMELO

Boron is one of the crucial essential nutrient elements for crops. It plays an important role in nutrient balance, physiological metabolism and reproductive organ growth. The problems caused by boron deficiency are quite common in practice, often resulting in the decline of crop yield and quality.

Due to excessive rainfall and unforeseeable flooding in the South of China, the boron in the soil was easily lost with the water. This resulted in the lack of available boron in the ground. In general, boron is active when the soil pH is between 4.7 and 6.5, but if the pH is higher than 6.5, the crops are prone to boron deficiency symptoms.

Showing the deformity of flowers (at left) that do not open with style exposed, and abnormal fruit development (at right) being small and stiff.

Foliar spraying with a boron fertiliser is an effective method to correct boron deficiency in crops. Spraying on fruit trees before germination and flowering and early fruit-setting can effectively prevent boron deficiency. It also promotes better flowering and fruit-setting and reduces the impact on pollination.

Farmers in the South of China are used to applying a foliar boron fertiliser, and the dilemma for them is how to choose the very best foliar crop nutrition fertiliser from amongst the many and various products. In the past few years, the RLF Technical Team have conducted many demonstration trials using RLF Boron Plus, and all have had excellent results.

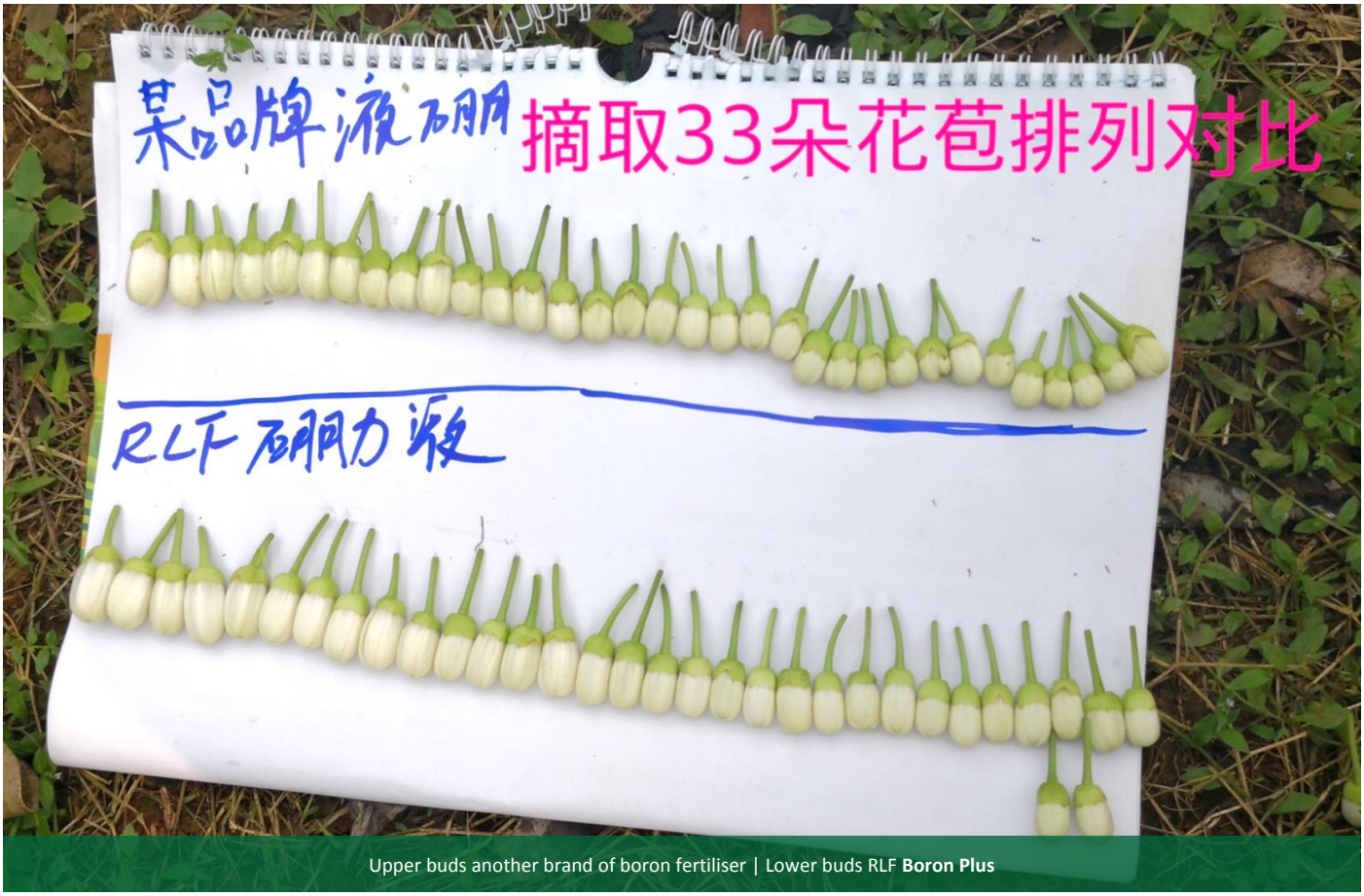
PICTURE LIBRARY OF THE TRIALS

Application One

Choose the same fruit tree, apply **Boron Plus** to compare with other brands of boron liquid fertiliser. After spraying in the same direction, and at the same horizontal position, bud, flower strengthening, and spring shoot growth were compared.

After being sprayed twice – on 3rd February and 23rd February – the RLF Technical Manager returned to observe the growth and to take samples for data comparison.

He chose 33 buds randomly and compared:



Upper buds another brand of boron fertiliser | Lower buds RLF **Boron Plus**

- By spraying with RLF **Boron Plus**, the growth is shown to be uniform and complete, and there is no deformity of flowers.
- The rate of malformed flowers in Control product was calculated at 70%.
- RLF **Boron Plus** treated area produced all flower buds with a width greater than 1cm.
- In the Control area, only 60% of the bract width were over 1cm. (as shown below)

Buds were seen to be stronger and longer, which can greatly improve pollination and reduce fruit drop due to poor pollination and fertilisation. (as can be seen in the following image)

- In the RLF-treated area the average length of each bud was **1.54cm**.
- In the Control area the average length of each but was **1.29cm**.

Application Two

RLF **Boron Plus** can reduce the number of deformed flowers, improve pollination and fertilisation, and have a significant effect on early physiological diseases such as deformed and stiff fruit caused by a boron deficiency.

The RLF Technical Team chose five different sites to demonstrate how effective **Boron Plus** is, and how it corrected during the growth of the fruit.

Each photo set shows the incremental effect of correcting the deficiencies and imbalance of this important micro-nutrient.

Each photo set was taken from left to right, so the apparent effect on correcting the deficiencies can be clearly seen, and they were taken on 1st May 2019, 24th May 2019 and 25th July 2019.

Trial Site 1

Trial Site 2

Trial Site 3

Trial Site 4

Trial Site 5

- All five trial sites showed a noticeable improvement.
- Nearly 200 young fruits were effectively corrected in the orchard after the use of **Boron Plus**.
- Compared with the Control fruits the difference in improvement was noticeable.
- This gives both increased quality and return for the pomelo growers – a much better commodity.