THE BETTER CROP PROGRAM DEVELOPED FOR FARMERS AND GROWERS IN CHINA

Part 04 | Understanding and Solving the Reasons for Yellowing Grapevine Leaves

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 **how to respond to yellowing leaves when they appear on the vines, as it not only weakens them, but seriously affects yield and quality**.

Grape leaves are prone to yellow spots or yellowing.

This occurs both before and after blooming, and not only weakens the vine, but also seriously affects its yield and quality.

The RLF Technical Manager gives the three key reasons for this, and provides the solutions.

YELLOWING CAUSED BY NUTRIENT DEFICIENCY

The different growth cycles of grapes absorb different amounts of the various elements. In the absence of even one particular essential element, the leaves will begin to show the related symptoms.

Many field observations have shown that the chlorosis caused by on the vines by nutrient deficiency related mainly to the lack of iron, potassium, magnesium, boron and some of the other trace elements.

Magnesium deficiency symptoms

Iron deficiency symptoms

Potassium deficiency symptoms

Symptoms

The main reasons that affect the differentiation of grape flower buds in production are as follows:

- There is a process of leaf yellowing.
- Before and after flowering iron deficiency symptoms more readily appear, and at the fruit colour-turning period, it is more likely to be because of potassium deficiency.

Possible Causes

Yellowing caused by deficiency is a physiological disease, and the conventional remedy is to supply the needed nutrient elements. Leaf yellowing is a symptom of this disease.

To solve the yellowing caused by the deficiency of elements, finding the fundamental cause is necessary.

- **If there is insufficient fertiliser.** Grapes have a tremendous demand for nutrients, so insufficient fertilisation can easily lead to a lack of the elements that cause yellowing.
- **If there is soil salinity.** Grapes grow better in weakly acidic, neutral and weakly alkaline soils. Furthermore, the soil pH should be between 6.0 and 7.5. If the soil pH is high, the soil's iron ions will be converted from ferric iron to ferrous iron, which is in a dormant state and cannot be absorbed and utilised by the vines.
- **If there is soil viscosity.** If soil permeability is lacking, the root growth is limited. It will reduce the root absorption capacity, leading to leaf yellowing.
- **If there is soil ion antagonism.** Antagonism between the elements of ions, such as the use of too much quick-available phosphate and potassium fertiliser in the soil, will inhibit the absorption of magnesium in the vine, thereby resulting in magnesium deficiency.

Solutions

- **Condition the soil.** Soil that is too acidic can be adjusted with the appropriate amount of lime. RLF Plasma Fusion Injection can irrigate alkaline soil to improve soil permeability, increase the aggregate structure, balance the nutrition.
- **Crop nutrition management.** The combination of solid NPK fertiliser, liquid irrigation fertiliser and foliar fertiliser, such as irrigated **Plasma Furrow Injection** + foliar spray **IntelliTrace** iron program.

YELLOWING CAUSED BY PESTICIDES

Spraying agrochemical products is the principal measure to control grape diseases and insect pests in the orchard. As a result, several things can go wrong. Application may be affected by the weather, the method of application, or the chemical's quality – and these are some of the explanations as to why this yellowing has occurred after application.

Symptoms

The leaf yellowing caused by pesticide damage generally occurs in the first 3 to 5 days after the application. Furthermore, the location of the pesticide injury is concentrated in the middle leaf.

Solutions

- Timely watering. If possible, spray water onto the grapes to reduce the concentration of liquid agrochemicals.
- Foliar crop nutrition. Spray with **RLF Fruits & Veggies Plus** to improve the resistance and nutrient level of the vines and restore average growth.

YELLOWING CAUSED BY OVERUSE OF FERTILISERS

Symptoms

- The edge of the leaf becomes yellow and then dries out. While the centre of the leaf shows no symptoms.

Solutions

- Immediately irrigate with ample water to dilute the concentration of the applied fertilisers.
- If the roots have been seriously injured, the upper soil around the plant should be cleared, and the roots should be sun-dried for a short time.
- Fertigate with RLF **Plasma Furrow Injection** to promote new root growth.
- Foliar spray with RLF **Fruits and Veggies Plus** to supplement the nutrition.

Fertiliser damage causes leaf margins to become yellow and dry

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