

TESTIMONIAL IN PLANT HEALTH (66)

Citrus Orchard Disease (Cankers and Greening)

I. For Canker:

Serious disease caused by a bacterium, *Xanthomonas axonopodis*. The treatment consists of a spray, SCD Plant Saver™ with COC (copper oxychloride). I have done this before in tea gardens in India under Fair Trade where they cultivate citrus too. The mix has to be applied with Mist Sprayer, Orchard and Trees Spraying Machine, every 7-10 days program. I will provide the mix amount if a client commits to do a trial using exactly the products and the protocol suggested by me.

2. The greening disease is well known in India as citrus dieback disease. It is also a bacterial disease produced by either *Candidatus Liberobacter asiaticus* or *Candidatus L. africanus*. Here the program is a little bit more complex because it has to be a tree by tree and is intensive in labor. The good news is that, it does not need to cut the tree. The factor responsible for greening disease are soil factors, like:
- The presence of any impregnated layers of Calcium carbonate, or clay affect the permeability and aeration of the soil as well as root growth and drainage.
 - Bad or poor drainage causes poor aeration.
 - Under the conditions of poor aeration the root development is arrested, leading to less absorption of nutrients and ultimately to decline of the top.
 - Citrus trees are quite sensitive to excess of salts and are injured if the total salt concentration in the soil exceeds 1000 ppm.
 - The presence of excessive salts in any of the horizons up to a depth of 180cm adversely affects the health of citrus plants.
 - Deficiencies of zinc, iron, and manganese are quite common on calcareous soils.
 - A high pH not only affects the availability of micro-nutrients, but a high sodium content of such soils may have direct toxic effects in the case of sensitive crops like citrus.
 - A low pH allows the leaching of nutrients.
 - Excessive irrigation is injurious for the health of citrus plants.
- Knowing better what are the soil conditions we can offer a plan to deal with the disease.