

Citrus Scab and Sweet Orange Scab

Summary

Citrus Scab and Sweet Orange Scab are fungal diseases that affect production and fresh market value of citrus. Sweet Orange Scab has been recently detected in Texas, Louisiana, Mississippi, Arizona and Florida; the entire aforementioned states are under quarantine.

Symptoms

Spongy, corky lesions develop on the fruit surface (Figs. 1 and 2). Parts of fruits may be covered by confluent lesions. Scab pustules also develop on leaves (Fig. 3). Affected leaves are often distorted.



Figure 1. Citrus Scab symptoms on Valencia orange (whole fruit and close-up). Photos: Myrian Rybak.

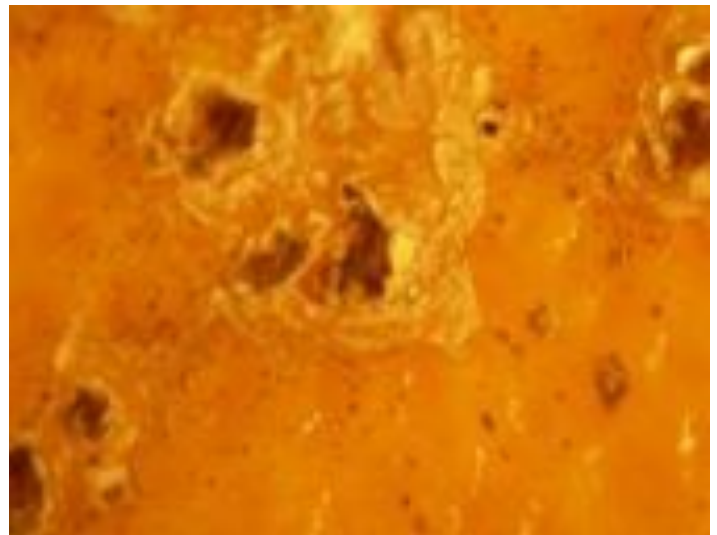


Figure 2: Detail of citrus scab fruit lesions (partial fruit and close-up). Photos: Myrian Rybak.

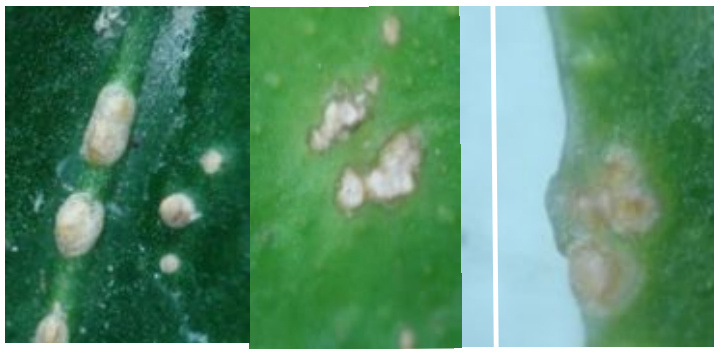


Figure 3. Detail scab lesions of *E. fawcettii* on artificially inoculated lemon leaf, left, and on Rangpur lime leaf inoculated with isolate E06-2712, center and right. Photos: Myrian Rybak.

Causal Agent

Elsinoe fawcettii and *Elsinoe australis*, respectively, are the cause of Citrus scab and Sweet orange scab (Fig. 4). These fungi produce spores on scab pustules developed on leaves and fruits.

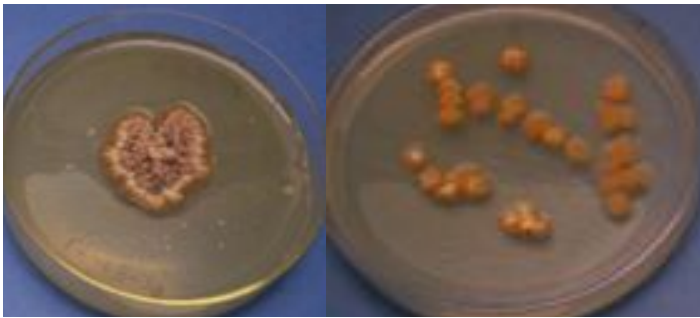


Figure 4. Colony aspect of the pathogen grown on artificial media. *E. australis*, left. *E. fawcettii*, right. Photo: Myrian Rybak.

Inoculum source and conditions

Spores are produced on diseased tissue after only one to two hours of wetting. Spores are then dispersed by water splash to healthy young leaves and twigs where the infection takes place. Three to four hours of wetness are required for infection. Citrus is most susceptible at fruit developing stage. Citrus Scab affects a variety of citrus species (lemon, lime, tangerines, sour and sweet oranges, mandarines, grapefruit, etc.) while Sweet Orange Scab affects primarily orange and mandarines.

Management

- The best management measure is avoiding entry of contaminated material.
- Once established, the disease can only be managed chemically. There are several spray programs that successfully manage citrus scab. One of such programs with successful results in Argentina consists of two chemical sprays, the first one when 25 % of the flowers are open, followed by a second spray 7-10 days after. Copper-based fungicides, Benomyl, Thiophanate methyl, Azoxystrobin, Trifloxystrobin pyraclostrobin plus oil provided successful results. In Florida, a control program with two fungicide sprays, one at petal fall, followed by a second one 2 to 3 weeks later seem to work well. Products such as thiophanate methyl, azoxystrobin, trifloxystrobin, pyraclostrobin, ferbam, and copper fungicides work well with this spraying regime.

References

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