

Without Fungicides, 50% Less Orange Juice from Florida

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Florida growers produce 11.6 billion pounds of oranges. Up to 95% of the Florida orange crop is delivered to the processed market primarily for orange juice.

The first mention of greasy spot on citrus leaves was from Cuba and Florida in 1915. Greasy spot is important only in areas where nearly 100% relative humidity and high temperatures occur simultaneously for prolonged periods [1]. The disease affects leaves of all commercial plantings. The most serious consequence is defoliation. In Florida, losses of up to 45% of fruit yield have been caused by defoliation induced by greasy spot [1].

Spores of the fungus are produced in decaying leaf litter on the orchard floor. The fungus swells and ejects numerous microscopic spores. Spores are airborne and are deposited on the underside of leaves where they germinate. After extensive growth on the surface of leaves, the fungus penetrates leaf tissue. The plant cells die and become impregnated with gum. The blisters later become swollen and darkened and resemble dirty blotches of grease. Heavily infected leaves fall off prematurely. Excessive defoliation of citrus causes a reduction in the following spring's growth flush and a subsequent yield reduction in the following crop year [2].

Greasy spot can often be adequately controlled with only one fungicide spray per year [3]. Copper fungicides have proven to be the most reliable materials for controlling greasy spot [1]. Spray oil is also used to control greasy spot. Oil is not chemically fungicidal, but it does interfere with the mechanical penetration of the leaf surface by the fungus [1]. Research has demonstrated that a single application of oil plus copper can reduce defoliation from 59% to 2% [4]. It has been estimated that without fungicide use, Florida citrus yield on currently treated acres would decline by 50% [5].

References

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3. Whiteside, J.O. 1977. Behavior and control of greasy spot in Florida citrus groves. *Proceedings of the International Society of Citriculture*. 3:981-986.
4. Whiteside, J.O. 1983. Timing of spray treatments for citrus greasy spot control. *Proceedings of the Florida State Horticultural Society*. 96:17.
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Orange tree



Greasy spot on orange leaf



Greasy spot fungus about to eject spores



Spraying orange trees