

Late Season Shuck Decline

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The pecan crop in Georgia has suffered from a late season shuck decline. The results of this shuck decline include poor quality, premature shuck opening, and shuck deterioration. This problem has been observed during previous growing seasons, but the exact cause is not clear. Most evidence indicates that the main problem is a physiological stress associated with high fruit loads. The following points summarize what is known about the problem.

- A. Prolific cultivars, such as Stuart and Cape Fear, seem to have more of a problem with shuck decline. This seems to be due to the relatively high fruit load of these cultivars.
- B. High fruit set, late season drought stress, high temperatures, mites, and black aphid damage were all factors this growing season. All of these could contribute toward stress and make it difficult for trees to maintain their fruit load. We believe that the main issues are a combination of heavy crop load and low soil moisture.
- C. Early-to-mid season rainfall amount were high-to-adequate. This would lead to a heavy crop load and large nuts that would be difficult to fill, especially during a late season drought. What seems to have occurred is that the trees could not maintain the high fruit load, especially with the hot, dry conditions late in the season. The September rainfall amounts for Albany, Byron, and Tifton were 0.90, 0.03, and 0.02 inches, respectively. Table 1 provides more detailed information on rainfall in Tifton, GA this growing season.
- D. A *Phomopsis* sp. was isolated from samples of shuck decline and from leaves with dieback. *Phomopsis* and other fungi such as *Glomerella cingulata* have been mentioned in the literature in association with shuck decline. These fungi are likely opportunistic pathogens that are a problem on trees that are stressed. As with most opportunistic pathogens, *Phomopsis* and *Glomerella* are extremely difficult to control with fungicide applications.
- E. Based on the current knowledge of this disorder, there is little growers could have done to reduce the amount of damage. Past experience shows that fungicide sprays have not reduced the incidence of shuck decline. Drip irrigated orchards often cannot keep up with the trees' demand for water; therefore, shuck decline is not uncommon in irrigated orchards as well. One practice that has shown promise in reducing the severity of shuck decline is fruit thinning. Fruit thinning in July can reduce the severity of shuck decline on some prolific cultivars. More research is needed to determine the exact nature of the problem and production practices that might help reduce damage.

TABLE 1. 2005 Rainfall Data for Tifton, GA

Month	Precipitation (in)	Evapotranspiration (in)	Water Balance (in)
April	5.96	4.21	1.74
May	1.72	6.13	- 4.41
June	7.23	5.30	1.93
July	5.83	6.16	- 0.34
August	3.46	5.29	- 1.83
September	0.02	5.01	- 4.99
October	0.58	2.97	- 2.39

Images of Shuck Decline

