



Fig 1: Avocado scab (a) fruit symptoms; herbarium specimens of (b) fruit peel and (c) leaf (authenticated by Anna Jenkins); (d, e) *Sphaceloma perseae* after 34 days growth at 20°C on Potato Dextrose Agar (PDA) Photo credits: a) Tom Isakeit, Texas A&M University; b), c) Mike Manning, HortResearch, Auckland; d), e) Jonathan Rees-George, HortResearch, Auckland

Disease: Avocado scab
Name: *Sphaceloma perseae* Jenkins
Classification: K: Fungi, D: Ascomycota, C: Dothideomycetes, O: Dothideales, F: Elsinoaceae.

Avocado scab is found throughout the world in avocado growing countries, but is not present in Australia and New Zealand. It can cause problems for market access to countries without the disease.

Fungal characteristics: *Sphaceloma perseae* is closely related to *Elsinoë fawcettii*, the causal organism of citrus scab. Fungal growth on PDA is slow and results in raised lumpy colonies with a convoluted appearance. Cultures are dark on the underside of the plates, and mycelia are pink to light beige.

Symptoms: Similar to citrus scab, avocado scab causes raised 'scabby' symptoms on avocado fruit and leaves. On leaves lesions are often red, and the centre can fall out to result in holes. Lesions on leaves most often form in the upper part of the tree canopy and the upper surface of leaves is more susceptible than the lower surface. In 1 month old fruit avocado scab can rupture the epidermis and produce hyaline conidia and conidiophores that form a dense velvety covering, in mass a dark olive colour. On the underside of leaves these conidial masses are light brownish olive. The velvety layer is gradually lost by weathering until only a few conidiophores remain by the time the fruit are 4 months old. After 1 month leaves can become resistant to infection, and fruit become resistant after they are about half size.

Distribution: Avocado scab (*Sphaceloma perseae* Jenkins) was first reported from avocados in a nursery in Florida in 1918. It was recorded as present in Africa (Guinea, Morocco, South Africa, Zambia, Zimbabwe), Asia (Philippines, Taiwan), Central America and West Indies (Antilles, Costa Rica, Cuba, Dominican Republic, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Puerto Rico, Salvador) and in South America (Argentina, Brazil, Guyana, Peru, Venezuela).

Host Range: *Sphaceloma perseae* is pathogenic only on avocados (*Persea americana* Mill.).

Impact: Avocado scab is considered to be a superficial cosmetic defect. Cost of control is the main impact in affected countries.

Detection and control: Diagnosis includes symptoms on fruit and leaves, culture morphology, host from which the fungus is isolated and specific PCR primers based on the ITS region. Regular copper fungicide sprays in the orchard can control this disease.

Further Reading:

- Everett K, Manning M, Fullerton B, Rees-George J and Hartill B (2007) Avocado scab not present in New Zealand. *Avoscene* 30-31.
- Jenkins A (1934) *Sphaceloma perseae* the cause of avocado scab. *Journal of Agricultural Research* 49. 859-869.
- Palmaeter A (2006) Description of Disease: Avocado Scab. In: *Avocado Technical Assistance Curriculum*. (Evans E A, Ed). University of Florida. 77.

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