



## Pacific Pests, Pathogens & Weeds - Fact Sheets

<https://apps.lucidcentral.org/ppp/>

### Tobacco frog-eye leaf spot (304)



Photo 1. Round spots with white or pale brown centres caused by *Cercospora nicotianae*.



Photo 2. Black masses of the spores and their stalks in the centre of the spots.

#### Common Name

Tobacco frog-eye leaf spot

#### Scientific Name

*Cercospora nicotianae*

#### Distribution

Worldwide. In the tropics. Asia, Africa, North (Hawaii) and South America, the Caribbean, Europe (restricted), Oceania. It is recorded on tobacco from Australia, Federated States of Micronesia, Fiji<sup>1</sup>, New Caledonia, Palau, Papua New Guinea, Solomon Islands, Tonga, and Vanuatu.

#### Hosts

Tobacco, and other members of the potato (*Solanum*) family, tomato, eggplant, and weeds.

#### Symptoms & Life Cycle

A common fungal disease wherever tobacco is grown, developing in the nursery (plant bed), field or barn after harvest. Spots, circular 2-15 mm diameter, brown, grey or tan, with dark borders (Photo 1). The centre of the spots becomes papery. Tiny black structures can sometimes be seen in the centres of the spots; these are groups of stalks and their spores (Photo 2).

The spots are mainly on the lower mature leaves at first, moving up the plant as the season advances. The spots continue to develop after harvest on the cured leaves.

Spread is from airborne or soilborne spores. There is a possibility that the spores are seedborne, too. Survival between crops occurs in trash from the harvested crop, on other related crops and weeds. The disease is worse in hot, humid weather.

#### Impact

A disease of minor importance. Its impact is greatest in Central America, West Africa and South Asia. In Central America, it is more important in shade-grown cigar varieties. The fungal infections lower the quality of the tobacco smoke, reducing some ingredients (alkaloid, sugar and phenol) and increasing others (e.g., nitrogen).

#### Detection & inspection

Look for the circular brown spots, 2-15 mm diameter, with white or pale brown centres, and dark margins.

## Management

### CULTURAL CONTROL

Before planting:

- Remove volunteer plants of tobacco and others in the Solanum family before field planting.
- Check plants in the nursery and make sure transplants are free from the disease.
- Avoid overlapping crops, preventing spores from older crops infecting newer ones. If not possible, then plant newer crops far from those established already

During growth:

- Weed. Remove weeds, especially those related to tobacco in the potato family.
- Do not add excessive amounts of nitrogen fertilizer as this increases the susceptibility of leaves. The correct balance between P, K and N is important, and soil analyses are required to determine this.
- If practical, and where numbers of plants are small, prune infected leaves as soon as they are seen.
- Avoid overhead irrigation as water on the leaves promotes spore germination and infection; use trickle tape application of water in preference.

After harvest:

- Collect and burn or bury trash after harvest, including all the stalks and roots.
- Practice crop rotation. Do not grow tobacco for more than 2 years on the same land.

### RESISTANT VARIETIES

There are resistant varieties, with resistance transferred from related species.

### CHEMICAL CONTROL

If fungicides are required, use mancozeb, copper or chlorothanoni.

---

AUTHORS Grahame Jackson & Eric McKenzie

<sup>1</sup>Information from Graham KM (1971) *Plant diseases of Fiji*, HMSO, London. Photo 1 R.J. Reynolds Tobacco Company Slide Set, R.J. Reynolds Tobacco Company, Bugwood.org. Photo 2 Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org.

Produced with support from the Australian Centre for International Agricultural Research under project PC/2010/090: *Strengthening integrated crop management research in the Pacific Islands in support of sustainable intensification of high-value crop production*, implemented by the University of Queensland and the Secretariat of the Pacific Community.

---

This fact sheet is a part of the app *Pacific Pests, Pathogens & Weeds*

The mobile application is available from the Google Play Store and Apple iTunes.

