

Extension Fact Sheet 42: Maize rust



Common name: Rust of maize

Scientific names: *Puccinia polysora* is recorded from Solomon Islands, but there is another rust, *P. sorghi*, that has **not** been recorded. *P. sorghi* is found in Australia and elsewhere. Often the two rusts occur together, requiring microscopic examination to tell them apart.

Hosts: The rust infects maize and sweet corn. It is recorded on some grasses and relatives of maize in other countries; it has only been recorded from maize in Solomon Islands.

Damage

The disease is usually of minor importance. Most spots occur on the older leaves; these dry and die earlier than those that remain uninfected, but the rust comes late in the growth of the plant, after the seeds have been filled. Maize varieties have been selected for resistance to this rust.

Biology and Life Cycle

The spots, produced in large numbers on both sides of the leaf (photo, left), and also on the stem (photo, right), are round to oval, up to 2 mm; they are brown, releasing large numbers of powdery spores. They burst open, and the spores are spread by wind over long distances. The spores germinate in water on the surface of the plants and

infect through natural openings (stomata). Warm, humid weather, such as occurs in Solomon Islands, favours the development of the disease.

Detection and inspection

The rust usually appears late, after the appearance of the male flower or tassel. If the leaf is held against the light, the spots can be clearly seen. There is a dark centre surrounded by a yellow margin.

Management

Cultural control:

Cultural control is important. The following should be done:

- Destroy volunteer plants as the rust can only survive on living plants;
- Plant maize during the drier times of the year;
- The rust can be seed borne, but the spores survive for only 2 months, so infection from seeds is not usually a risk.

Resistant varieties:

There are resistant hybrids of maize and sweet corn.

Chemical control:

The use of fungicides against this disease is not recommended as the effect on yield is probably minor and their use would not be economic. If needed, copper and mancozeb would be effective.