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NET BLotch OF BARLEY

By W. A. SHIPTON, Ph.D., Plant Pathologist

NET BLotch is the most prevalent disease of barley in Western Australia, and is capable of reducing yields considerably.

It is caused by the fungus *Pyrenophora teres* Drechsl.

In an experiment conducted at Avondale Research Station in 1965 it was demonstrated that a moderate to severe outbreak of the disease reduced the yield of Beecher barley from 51.9 to 44.2 bushels per acre. The disease also caused a lowering of the bushel weight and reduced the malting quality of the grain.

Symptoms

Lesions may begin to appear on the leaves and leaf sheaths soon after seedling emergence. The spots are at first light green to yellowish green in colour, but soon turn brown. Darker areas occur in the blotches and these extend both in a parallel and perpendicular direction to the leaf axis, giving the lesion a distinctly netted appearance (Fig. 1).

Infection of the leaf sheaths may be extensive, but generally the net blotching is not as distinct as that on the leaves (Fig. 2). Infection of the culm, peduncle and floral bracts occurs as a light to dark brown discolouration.

Infection of the grain is characterised by a light brown localised discolouration.

Carry-over, Spread, and Alternate Hosts

The net blotch organism may be seed-borne, and initial plant infection may arise from the diseased seed (Smith and Ratray, 1930). This type of infection is favoured by low soil temperatures (Butler and Jones, 1949).

The organism also survives in infected plant debris (Singh, 1962), and on volunteer barley and susceptible grasses. In Western Australia barley grass (*Hordeum leporinum* Link), sea barley grass (*H. hystrix* Roth.), and rip-gut brome grass (*Bromus gussonii* Parl.) have been found to be alternate hosts to the disease (G. C. Mac Nish and T. N. Kahn, personal communication).

Spores produced on infected plant debris and on the lesions on infected plants are dispersed by wind. These spores infect barley over a wide range of temperatures when there is sufficient moisture present (Singh, 1963a, b).

Control

Control of the disease is difficult, but some control can be achieved by the following measures:

- Dust the seed with an organic mercury dust. This will control the seed-borne phase of the disease (Hainsworth, 1961; Harris, 1964).
- Destroy infected barley and grass straw either by burning or by deep ploughing.
- When practicable avoid sowing barley on the same land in successive years or in paddocks close to those cropped to barley the previous year.

A number of barley varieties show some degree of resistance to Net blotch, and further studies are now being made of this.
REFERENCES


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The Acting Deputy Commonwealth Statistician for Western Australia (Mr. F. W. Sayer) has emphasised that the returns are used to compile important information used for planning at both Commonwealth and State levels. All returns will be treated as strictly confidential and in no circumstances will particulars from an individual return be divulged to any other person, authority or Government department.

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