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Downy mildew of wheat

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Each season, localised outbreaks of downy mildew occur in wheat crops throughout the State. Because the disease produces an unusual malformation of the heads it is often regarded by growers with considerable alarm.

However, downy mildew is always restricted to small patches of crop in wet situations and little loss occurs in Western Australia.

Downy mildew is caused by the fungus Sclerospora macrospora Sacc. and is almost solely confined to waterlogged areas in paddocks of heavy soil types. Generally, the disease is most evident in crab-hole gimlet country.

Symptoms

Affected plants have a stiff, erect appearance, are somewhat stunted and tend to stool excessively. The leaves, which are a dull greyish-green colour, show considerable thickening and twisting. Some of the plants produce malformed and distorted heads (Fig. 1) which contain little or no grain, but most fail to head.

Carry Over

The disease is perpetuated by thick walled fungal spores (oospores) which are...
formed within the affected tissue. The oospores reach the soil when the diseased residues are ploughed under and may remain alive, in a resting state, for several years. Under extremely wet conditions, the oospores germinate and form different spores (zoospores), which in turn infect susceptible plants.

Although it is usually only seen on wheat, the disease has been recorded on Toowoomba Canary grass (*Phalaris tuberosa* L.) in Western Australia. Reports from overseas also list barley, oats and a number of grasses as alternate hosts of downy mildew.

**Control**

No special measure is recommended for the control of this disease as the affected area in any one paddock is generally exceedingly small.

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