



Ascochyta blight of the common bean

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*Ascochyta blight of the common bean (**Phaseolus vulgaris L**) is a seed-borne disease occurring worldwide. The disease is caused by the fungus **Phoma exigua var exigua** and has the potential to cause severe yield losses. It is accordingly regarded as a major economically important disease of the common bean in some parts of the world.*

Information on the exact yield impact in South African dry bean producing fields is currently unavailable, however, epidemics of the disease have been reported in Western Europe and East Africa. Experimental losses of 43% in dry bean yield has been reported elsewhere in the world.

Favouring weather conditions

Environmental conditions favouring the onset and development of these symptoms include cool to moderately cool temperatures (16 - 24 °C), high humidity, and rainy and misty weather. The pathogen becomes inactive at temperatures above 30 °C.

Reported cases in South Africa

Symptoms of the disease

The disease usually appears at the early pod development stage and becomes more severe during the further development of these pods. Small, circular, dark-brown spots appear on the leaves first, and later on the leaves and pods. Lesions then become dark-brown to black and is characterised by clearly visible concentric rings (*Figure 1*). The concentric ring lesions measure about 10 - 30 mm in diameter and mostly contain small, black pycnidia (spore-bearing structures). Lesions on the leaves may coalesce and cover most of the leaf surface area. Severely infected plants show a tattered appearance of the canopy (*Figure 3*) accompanied by a significant loss of leaves (senescence). Lesions on the pods are sunken, divided into zones with

a pale centre and dark margins, and are usually covered by several pycnidia (*Figure 2*).

Pod drop associated with the disease has also been reported elsewhere in the world with the associated negative yield potential of the crop. Lesions on pods may also serve as a contamination source for seed infection. Seeds that are infected display a brown to black discolouration, rendering them poor for both seed and grain markets.

The spread of the disease

Infected seeds are the main form of long-distance spread of the disease, whereas short-distance spread is carried out by wind and raindrop pycnidiospores. Although the disease has long ago been identified, ascochyta is considered an emerging disease on account of several 'first time incident' reports of the disease in many common bean producing areas around the world. Ascochyta blight may therefore have occurred in only a few parts of the world at significantly high levels in the past, while it has either not been an economically important disease in the majority of bean producing areas, or it has been absent altogether.

In South Africa, ascochyta blight was only reported once, during the 1980's, in Mpumalanga, the Eastern Cape and KwaZulu-Natal. Recently, the disease has continuously been observed at Cedara Research Station (29°31'43"S, 30°15'56"E) of the Agricultural Research Council near

