Fungicide management in chickpeas

The aim of this trial is to investigate effective fungicide strategies for controlling Ascochyta blight in chickpeas.

Summary

Ascochyta blight still has the potential to threaten a chickpea crop, as varieties available to the farmer today are still susceptible to the disease. Without a fungicide plan a chickpea crop is at risk of being devastated by ascochyta. In this trial, chickpeas that had no fungicide applied during the season had significantly lower yield than those treated with some sort of fungicide plan. Those plots treated with three fungicide applications during the year had the highest yield response (1.34t/ha and 1.39t/ha) compared to 1.1t/ha for the unsprayed control.

Background

Chickpeas have the potential to be a valuable pulse crop in a Wimmera rotation. However the risk and cost of growing chickpeas is still high due to the uncertainty of Ascochyta blight. Current chickpea varieties are all still susceptible or moderately susceptible to ascochyta therefore the disease still has the potential to be devastating to a chickpea crop if the conditions are right for a disease outbreak and a fungicide plan is not used. It is possible that Ascochyta blight can be controlled with the use of fungicides, however the timing is critical. Until new resistant chickpea lines become available, farmers must be prepared to spray at least one and possibly several fungicides applications. This trial looked at different fungicide strategies and new fungicide products to control ascochyta blight in Howzat chickpeas.

Methods

Howzat chickpeas were sown on July 4 with 60kg/ha EzyZinc.

Triflur 480® at 0.8L/ha was applied pre-sowing, Simazine® (applied on the fungicide treatments only) at 1.6L/ha on August 1, 2003 and Verdict® at 75ml/ha on September 4.

The fungicides in the trial are described in Table 1.

Table 1. Fungicides used in this trial to control ascochyta in chickpeas.

Fungicide	Notes
chlorothalonil	Best option for control of ascochyta in chickpeas
mancozeb	An alternative to chlorothalonil, but probably not quite as good
Azoxystrobin (Amistar)	Very good for the control of ascochyta in chickpeas, registered for this use in Canada but not in Australia. Experimental only.

Results

A small yield benefit resulted from protecting chickpeas from ascochyta during the 2003 season (Table 2).

Table 2. Time of fungicide application on grain yield of chickpeas.

Description	**Timing**	**Yield t/ha**
control		1.1
Chlorothalonil	6 wks PE	1.3
*Azoxystrobin**	8wks PE	
Chlorothalonil	6 wks PE	1.3
Azoxystrobin*	8wks PE	
Chlorothalonil	12wks PE repeated every 2wks	
Chlorothalonil	6 wks PE	1.4
Azoxystrobin*	8wks PE	
Chlorothalonil	16wks PE repeated every 2wks	
Chlorothalonil	Every 2wks with alternative fungicide from 6wks PE	1.3
Mancozeb	(starting with chlorothalonil)	
	LSD (5%)	**0.2**

PE = Post emergent
*Unregistered application.

Interpretation

With the varieties currently available it is essential to have a fungicide plan as all varieties released to date are still susceptible to Ascochyta. Even though 2003 was a low disease pressure season, plots sprayed with fungicide had a significantly higher yield compared to the control (no fungicide application) (1.3t/ha versus 1.1t/ha). The two treatments, which had a chlorothalonil, azoxystrobin, chlorothalonil application had the highest yields at 1.34t/ha and 1.39t/ha.

Amistar (azoxystrobin) has not yet been registered for the control of ascochyta in chickpeas in Australia. Azoxystrobin is a relatively new fungicide in the strobilurin group and is registered for ascochyta control in chickpeas in Canada.

Commercial Practice

It is recommended that an early application of a fungicide to prevent an outbreak is the most critical. In 2004 a new desi chickpea will be released (Flip94-508C), which potentially has good resistance to ascochyta. All though Flip94-508C may be slightly lower yielding than Lasseter or Howzat it gives farmers an option to grow chickpeas with fewer fungicide applications.

A desi line with a yield similar to Howzat is likely to replace Flip94-508C in 2006. Growers of Flip94-508C will pay lower royalties when changing to the newer variety through an incentive based replacement scheme.

In 2005 a high yielding, medium to small seed, kabuli type (Flip94-90C) will be released. It has equivalent yields to Howzat and has excellent resistance to ascochyta blight.

These new varieties will only require one fungicide application later in the season to protect pods and seed from infection and therefore seed discolouration. The new varieties can also be sown earlier than is current practice and has potential to increase the yield potential of these lines.