

A NEW FUNGICIDE APPLICATION TECHNIQUE FOR ONION WHITE ROOT ROT (*SCLEROTIUM CEPIVORUM*) CONTROL

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INTRODUCTION

Currently onion growers have no reliable control strategy for white rot, if the crop has been sown without prior treatment such as tebuconazole mixed with lime-super fertiliser (1). Good practises, such as paddock selection, timing of sowing, hygiene and seed dressing, are used to reduce the disease risk.

In recent years tebuconazole foliar spray applications were shown to provide some the control of white rot (Dennis and Macleod, unpublished data). This has been supported by commercial field observations. However, trial data has been inconsistent. Very few chemical compounds are being translocated from shoots to roots. This may explain the variable results from foliar applications.

The problem with post planting fungicide application may be overcome with the use of fungigation (application of fungicides via irrigation), using a compound with known activity against white rot. Therefore a pilot study was conducted, to evaluate fungigation as a new application technique for white rot control.

MATERIALS AND METHODS

Two replicated trials were conducted in white rot infected areas of commercial fields. The following treatments were applied four to five weeks after the first signs of infection had been observed.

N ^o	Active ingredient	Active ingredient [g/ha]	Application method
1	Tebuconazole	645	Boom spray
2	Tebuconazole	645	Fungigation
3	Procymidone	1000	Boom spray
4	Control	N/A	n/a

Procymidone has previously been shown to be effective against white rot (2, 3). Fungigation was applied with 6mm water through drip lines. All other plots were irrigated with 6mm water at the same time. The single boom spray treatments 1 and 3 were applied straight after irrigation. Infected onions were counted prior to treatment and at 7-14 day intervals between treatment and lifting. At harvested the number of infected and healthy onions were recorded.

RESULTS

Disease incidence was high and variable throughout the trial area at both sites. Therefore no significant treatment differences were found.

Tebuconazole fungigation and, in one case, procymidone foliar applications appeared to reduce white rot infection. Tebuconazole fungigation increased yields and the

percentage of saleable onions at both sites. At one site procymidone spray gave similar results to tebuconazole fungigation (Table 1).

Table 1. Effect of treatments on yield [kg] and saleable onions % at two commercial sites.

N ^o	Treatment	Yield per plot [kg]		Saleable onions %	
		Site 1	Site 1	Site 2	Site 2
1	Tebuconazole	0.5	0.5	26	38
2	Tebuconazole	1.0	1.0	32	49
3	Procymidone	0.4	0.4	20	48
4	Control	0.4	0.4	27	29

DISCUSSION

Fungigation four to five weeks after the first signs of the disease was too late to achieve commercially acceptable control under high disease pressure in the 1998/99 season. However, fungigation may be an effective way of applying fungicides to 'hot spots' in onion crops, if used early and with more than one application. The technology may also be useful for screening of new compounds.

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