

Mushroom Advice and Analysis

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Results of trials conducted on Sporekill

Introduction

To date the results of only two mushroom pathogens, *Trichoderma Harzianum* and *Verticillium fungicola* are available, tests on *Dactylium dendriodes* are still in progress.

Both spore germination and mycelium growth rates of the pathogens are being tested with a range of concentrations, at present only the spore germination tests are complete for two of the fungi.

Sporekill was initially tested at concentrations of 0.5, 0.75 and 1.0%, but a lower concentration of 0.25 % was introduced into the series as there was no growth at the recommended rate of 0.5% when applied to spores.

Materials and Methods

a) The spore test

Spore suspensions were prepared from pure cultures of the various isolates in sterile distilled water, their concentration was measured and the solution diluted to 10^6 per ml. with a liquid mushroom extract to give stimulus for the spores to germinate.

Solutions of Sporekill were prepared at double the final required concentration as it was to be mixed with equal volumes of the spore suspension in the nutrient source.

Sterilised filter papers were placed in the base of petri dishes and two glass rods positioned to hold the microscope slides. The sterilised microscope slides were then placed on the rods and the aliquots of test chemical and spore suspensions pipetted onto them and mixed with a sterile seeker. The filter paper was then wetted with distilled water and the petri dish lid added to maintain a high humidity within the dish, so preventing drying of the solution.

Eight replicates of each concentration were prepared and incubated at 18⁰C, subsequent growth was recorded after 24 h.

Germination was assessed by randomly counting groups of ten spores around the slide and determining the percentage germination within that group, six

groups were counted on each of the eight replicate slides within each treatment.

Results

a) Spore Germination

Final concentration of Sporekill	<i>Trichoderma harzianum</i> Average percentage germination within the six groups counted on each slide								
	1	2	3	4	5	6	7	8	Average
Control	40	40	30	40	30	40	30	30	35
0.25	20	30	20	20	30	40	30	40	29
0.5	0	0	0	0	0	0	0	0	0
0.75	0	0	0	0	0	0	0	0	0
1.0	0	0	0	0	0	0	0	0	0

Final concentration of Sporekill	<i>Verticillium fungicola</i> Average percentage germination within the six groups counted on each slide								
	1	2	3	4	5	6	7	8	Average
Control	100	80	100	100	80	100	100	100	95
0.25	90	50	80	50	60	80	50	80	68
0.5	0	Lost	0	0	0	0	0	0	0
0.75	0	0	0	0	0	lost	0	0	0
1.0	0	0	0	0	0	0	0	0	0

Comments

It is very clear from these results that Sporekill is very effective at halting germination of spores of the pathogens tested.

At concentrations at or above 0.5 %, Sporekill in these tests killed all pathogens we have tested so far.

When engulfed with Sporekill at concentrations at or above 0.5% the pathogens do not germinate.

The tests we are currently running on the effect of Sporekill on mycelium growth are not yet complete, but indications are that if the mycelium remains covered with the material that extension growth is definitely restricted.

John Burden
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