

# **SOUTH AFRICAN MUSHROOM INDUSTRY**

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10<sup>th</sup> -11<sup>th</sup> April 2018**



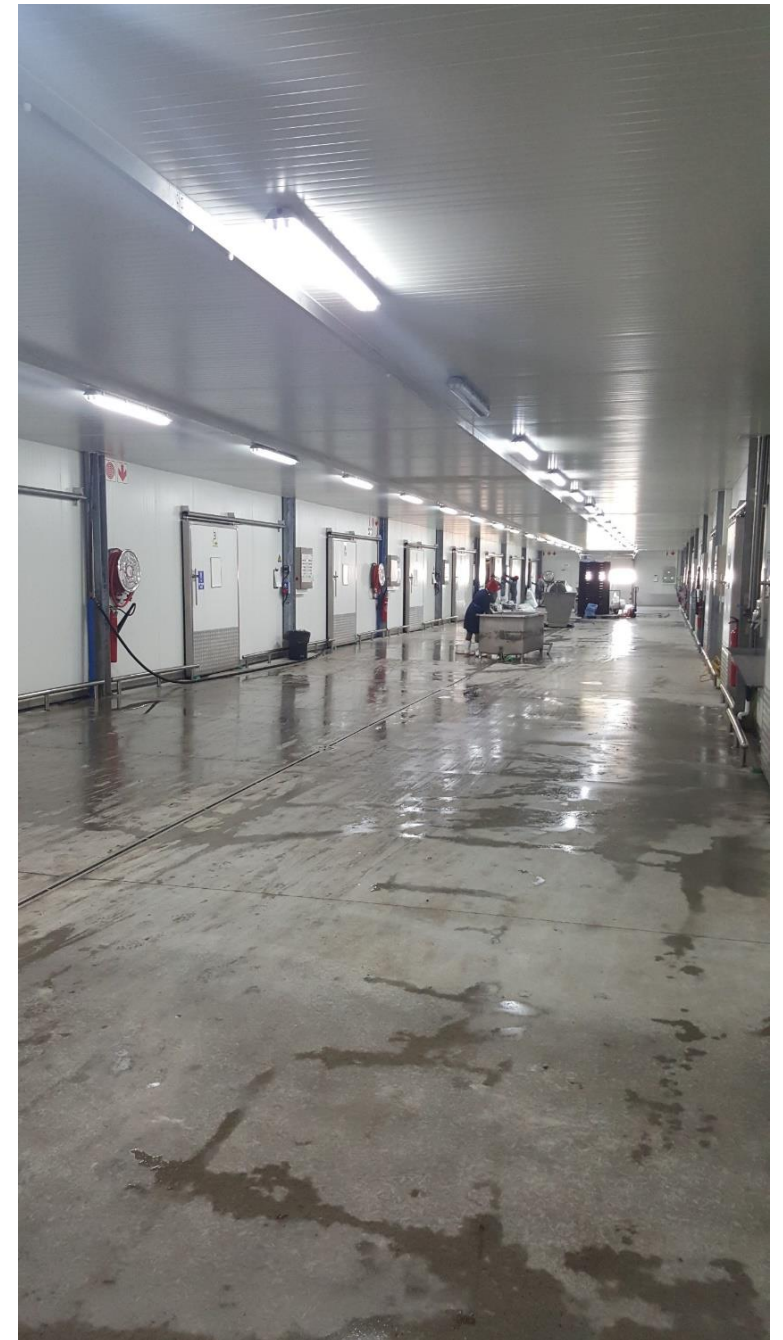
# INDUSTRY STATS

- **Mainly Agaricus (white button & brown);  
8-10% speciality mushrooms (Oyster, Shiitake, Shimeji)**
- **95% Fresh market; labour intensive**
- **SIZE : 21 000 tons/annum R 940m / annum  
Growing industry – 5% during the last 3 years**
- **PRODUCERS : approx. 17 producers on approx  
24 facilities**
- **50% in Gauteng, 28% in Cape, 15% in  
KZN, 7% other provinces**



# MUSHROOMS HOUSES

Mushrooms are grown in houses under controlled conditions



# GROWING SYSTEMS

## SHELVES



# TRAYS



# BAGS



# **SELECTIVE SUBSTRATE (COMPOST)**

## **EACH FARMER MAKES HIS OWN**



# PROCESS PARTLY OUTDOORS AND PARTLY INDOORS



# SPAWNING & FILLING OF THE ROOMS



Treatment of spawn



Application of chemicals to substrate

# **SPAWN RUN**

colonization of substrate



# CASING : PEAT (IMPORTED)



Application of chemicals to casing

# FRUITING (or pinning)



# **CHEMICALS MAINLY APPLIED :**

- **ON CASING IN 1<sup>ST</sup> WATER - 17 500 m<sup>2</sup>/week**
- **ALSO ON COMPOST WHEN FILLING THE ROOMS – 2 500 tons/week**
- **ON FLOORS (FOG) AFTER FILLING THE ROOMS**
- **SPAWN TREATMENT**

# PESTS

**FLIES : Phorids**

**Sciarids**



# MITES



# PESTICIDES - registered

Active Ingredient	Registration status in SA	Comments
Cyromazine	registered	applied on compost - against fly larvae
Diflubenzuron	registered	applied on casing - agaist fly larvae; resistance is a problem
Pyrethrin	registered	against adult adults - not on beds
Mercaptothion	registered	adult flies - not on beds
Diazinon	registered	adult flies - not on beds
Dichlorvos	registered	fog against adult flies

# PESTICIDES – not registered

Deltametrin	not registered	used in Europe; similar to Pyrethrin ?
Methoprene	not registered	registered in US, France, UK, Ireland and Italy
Triflumuron	not registered	used and registered in Australia
Bendiocarb	not registered	
Fipronil	not registered	registered and used in Australia
Propargite	not registered	for mites - in compost and on casing
<b>BIO-CONTROL PRODUCTS</b>		
Steinernema feltiae	not registered	Sciarid larvae - registered and widely used in Europe; registration in SA expired
Metarhizium anisopliae	not registered	

# FUNGAL PATHOGENS

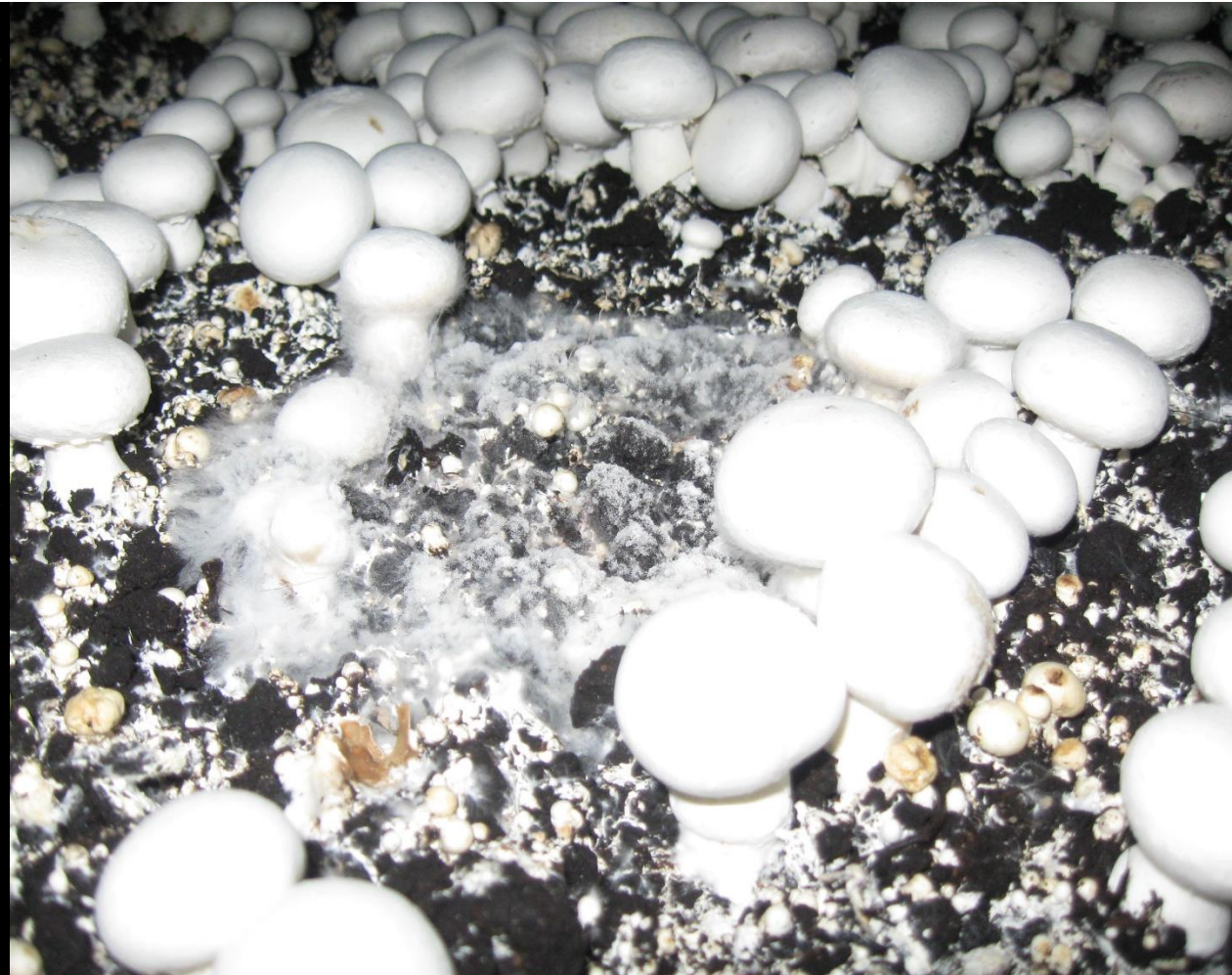
*Lecanicillium fundicola*  
(Dry Bubble)



*Mycogone perniciososa*  
(Wet Bubble)

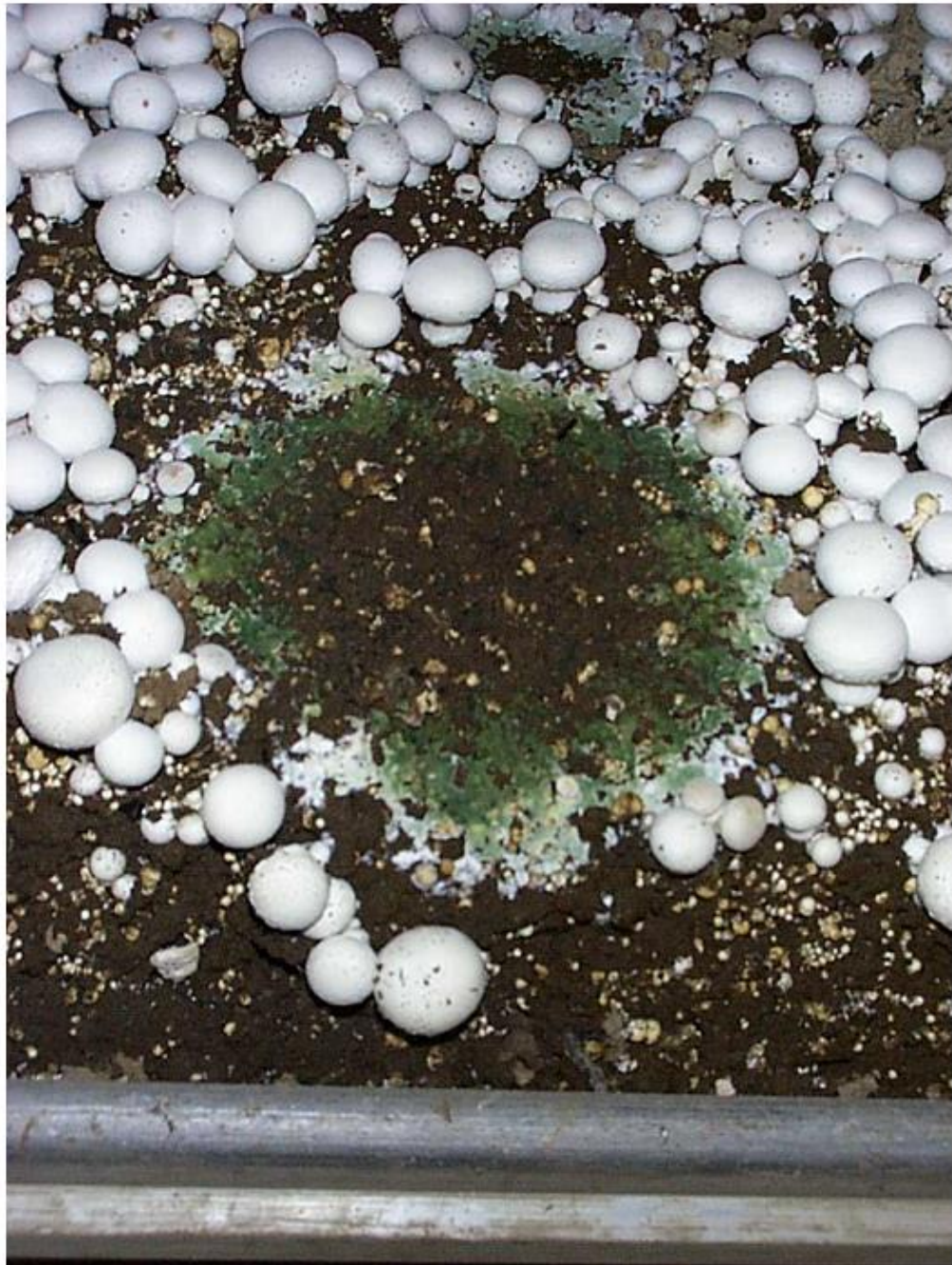


# *Cladobotryum* spp (Cobweb)

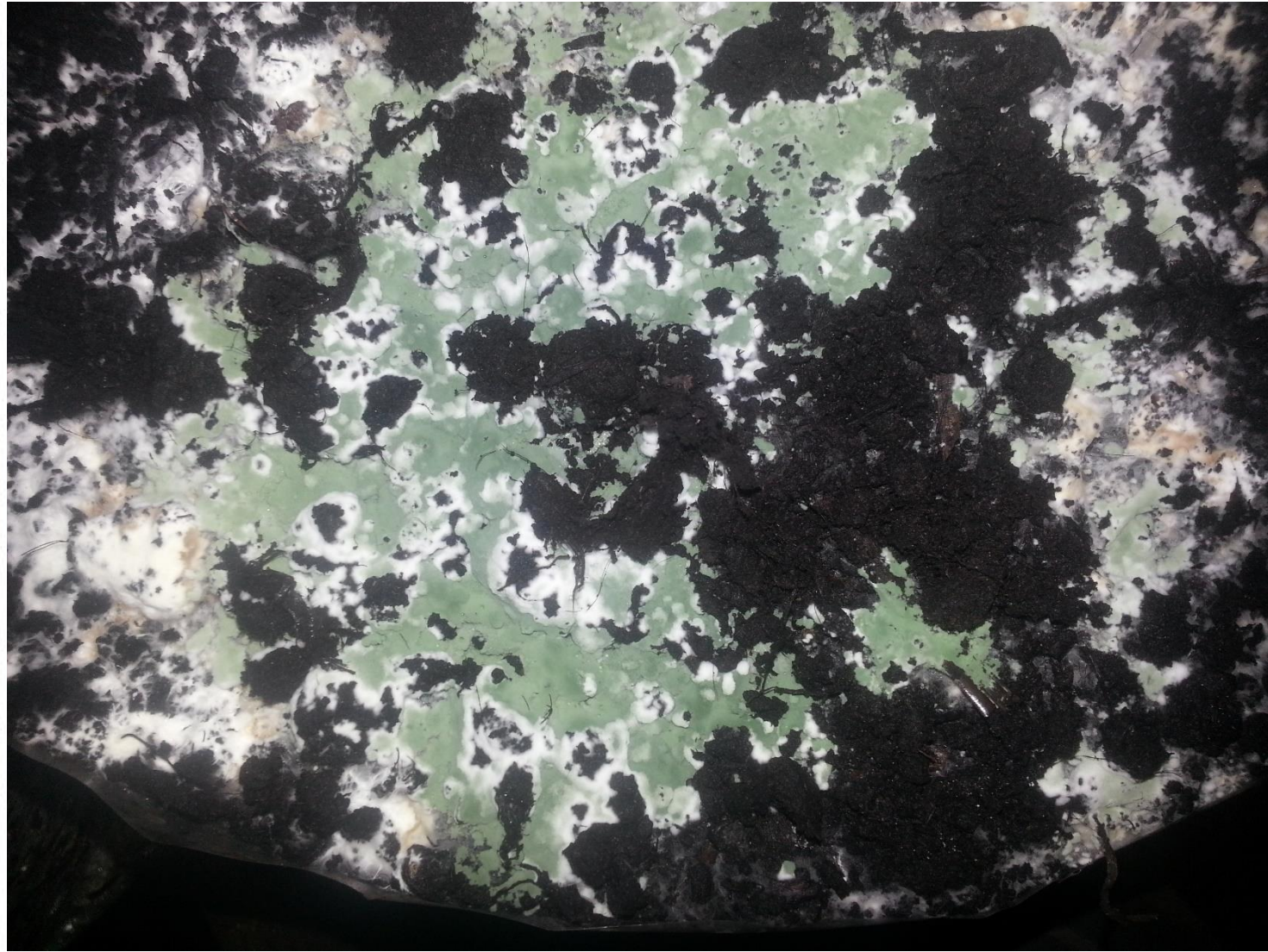


# *Trichoderma aggressivum* (compost green mould)





*Trichoderma* spp



# FUNGICIDES - registered

Active Ingredient	Registration status in SA	Comments
prochloraz managnese	registered	Bubble, Cobweb; Frequently used by most growers
prochloraz zinc	registered	Bubble, Cobweb; Used by many growers, cheaper
thiabendazole	not on list but mushrooms are on label	Bubble, Cobweb & Trichoderma

# FUNGICIDES – not registered

carbendazim	not registered	Australian dept Agric has permitted use on agaricus mushrooms, toxicology data is available.
metafenone	not registered	Cobweb, DryBubble; Used in vine yards; registered in Europe
benomyl	not registered	Trichoderma; Used as a spawn (seed) treatment and in small quantities thus very low residue levels.
popioconazole	not registered	To dip wooden trays to protect against various fungi and mycelium transferring virus; used in Australia

# BIO-CONTROL PRODUCTS

Bacillus amyloliquefaciens	not registered	Compost Trichoderma; registered in the States; in process in Europe
Bacillus subtilis QTS713	not registered	Compost Tricoderma; registered and used in States
Natamycin	not registered	Dry bubble; registered in the States
Tyme Oil	not registered	registered and used in Holland

## **TO CONCLUDE :**

- **Limited choice**
- **Resistance to chemicals**
- **Possibility to register Chemicals & Bio-control products already registered and used on mushrooms in other countries**
- **Confusion if active is registered, but the crop is not mentioned on the label and visa versa**

**THANK YOU**

