DEPARTMENT OF
PRIMARY INDUSTRIES

*Vegetable* Matters-of-*Facts*

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VegCheque
extension for the vegetable industries

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Asparagus

# Stemphylium (Purple Spot) of Asparagus

## Main controls:

- Chemical fungicides
- Crop scouting
- Weed control
- Seed treatment
- Disease forecasting
- Remove fern debris

### What is "Stemphylium" (Purple Spot)

Stemphylium of asparagus (also known as Purple Spot) is caused by the fungus *Stemphylium vesicarium*. Purple Spot is a major worldwide disease of asparagus.

Losses from this disease are from spotting of spears which reduces marketability. Repeated defoliation of ferns can reduce yield in following crops. The disease has caused severe problems for Southern Victorian asparagus growers in recent years.

### Typical symptoms

Infected **spears** have elliptical sunken, purplish spots with brown centres which lead to rejection of product.

Asparagus **fern** infected with Purple Spot has brown spots with dark purple margins.

Black **over-wintering** structures appear as the fern dies back and these are the main source of infection for newly developing spears in spring.

### More about Purple Spot

- The primary source of the disease is from infected fern debris from the previous crop.
- Infection occurs through natural openings and wounds on the newly emerging spears.
- Purple Spot can be severe during a cool, wet growing season. Twelve continuous hours of leaf wetness are necessary for infection.
- Purple Spot over-winters on fern debris.

In spring, spores released from last year's infected fern debris are spread by wind and water to the new spears.

Horticulture Australia

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The Place To Be

## "Strategies to control Stemphylium (Purple Spot) of Asparagus"

## HAL Project: VX 01024

### Results to date

Seed treatment

*Stemphylium, Fusarium* and *Botrytis* (disease-causing fungi) were detected on asparagus seed.

A simple treatment to consider is to soak seed for 10 minutes in 7 parts methylated spirit and 3 parts water. This will rid seed of most fungal diseases. Unfortunately, *Stemphylium* can also be an internal infection and cannot be adequately controlled by surface sterilisation.

Crown testing

Random tests showed that 4 out of 6 one-year-old crown lots were infected with *Stemphylium* and all were infected with *Fusarium* root rot.

Decay of fern debris

Asparagus fern is very slow to decay in cold dry soil. Other methods to accelerate decomposition need to be developed.

Fungicide trials

In trial conditions, only the fungicide chlorothalonil provided a level of protection from disease at the green fern stage.

**NOTE: Chlorothalonil is not registered for use on Asparagus**

### Future work

- Test low-toxicity fungicides for use in disease management to avoid chemical resistance developing.
- Test use of hot lime to aid decomposition of fern debris.
- Can crop scouting help growers.
- Disease forecasting from weather data.


### Contact

**Gisele Irvine or Martin Mebalds (seed testing)**

**DPI-Knoxfield, (03) 9210 9222**


### Weblinks used to prepare this information :

http://www.apsnet.org/online/feature/asparagus/top.htm

http://pearl.agcomm.okstate.edu/plantdiseases/f-7646.html

http://www.extension.umn.edu/distribution/horticulture/components/1861a.html

http://attra.ncat.org/attra-pub/PDF/asparagus.pdf

http://www.anrcatalog.ucdavis.edu/pdf/7234.pdf

http://commserv.ucdavis.edu/CEImperial/Aspar_03.pdf

For more information please contact your local VegCheque officer.

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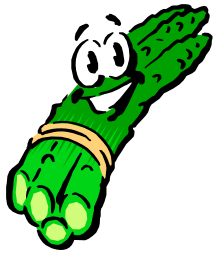
# Controlling Stemphylium (Purple Spot)



## Current methods

The control of Purple Spot involves a combination of crop management practices and well-timed chemical treatments.

### Chemical Control:

In trials, the fungicide chlorothalonil was effective in controlling Purple Spot on the fern. Other effective chemicals are needed to reduce the danger of the disease becoming resistant to chlorothalonil.

**NOTE: Chlorothalonil is not registered for use on Asparagus**

### Disease Forecasting:

Purple Spot can occur whenever weather conditions are right. Twelve hours of leaf wetness are necessary for infection. Crop scouting for purple spot on green fern is recommended after prolonged wet conditions.

For new plantings, consider orienting the block so that wind can blow along the rows and dry the foliage quickly.

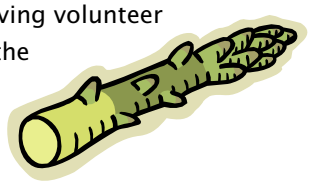
### Removing Fern Debris:

Burying or burning asparagus debris will help reduce infectious material and air-borne spores, even if the debris does not decay before harvest.

However total removal of fern debris is difficult and it is likely that enough infectious material will survive to infect emerging spears.

### Weed Control:

Volunteer asparagus seedlings can become infected during the harvest season and are a source of disease. Mechanically removing volunteer seedlings can help control the spread of disease.



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