

# CROP DISEASE BULLETIN

Crop disease information for southern NSW and northern Victoria provided by NSW Department of Primary Industries and Grains Research Development Corporation

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## Lupin Anthracnose confirmed in southern NSW

In the early October 2016 the disease lupin anthracnose, caused by the fungus *Colletotrichum lupini*, was confirmed in several commercial lupin crops in southern NSW. This disease was first detected in commercial lupin crops in Western Australia and in South Australia in 1996. In the same year the disease was found on ornamental or Russell lupins growing in private and public gardens throughout NSW, but soon eradicated.

Since that time crop surveillance throughout NSW has not found the disease in any commercial lupin crops until now.

The disease is a threat to the NSW lupin industry. Albus lupin varieties are highly susceptible to the disease, while narrowleaf lupins do have some resistance, in particular the varieties Wonga and PBA Barlock.

## Important information about the disease

- The disease is specific to lupin species only. *Colletotrichum lupini* does not affect any other pulse species including field pea, faba bean, chickpea or lentil.
- The fungus survives on infected lupin stubble and can be carried on or within infected seed, which is the main means of disease spread. Infected seed will give rise to infected seedlings the following year and initiate the disease. The fungus does not survive in the soil.
- The fungus can survive for up to two years on infected seed. This time can be longer under some conditions.
- The fungus does not produce air-borne spores. Lesions on infected plants produce spores that are splash dispersed short distances and spread the disease within the crop.
- Spores can also be spread by contaminated machinery, vehicles, people, clothing, boots and animals.

## **Symptoms of the disease**

Symptoms of anthracnose are very distinct and unlike any other foliar disease of lupin. Key features of the disease include:

1. Anthracnose can develop at any stage within the crop, including seedlings.
2. Symptoms become most obvious when crops come into the reproductive phase and start flowering and podding. The disease attacks the soft plant tissue at the growing points (including stem tips, flowering spikes and pods) and works downwards into the crop canopy.
3. Crop lodging is not a symptom, the disease attacks the upper canopy.
4. **The most notable feature of anthracnose is the bending and twisting of stems at the outer ends (see images), also known as ‘shepherds crook’. The bending of stems is due to the formation of lesions within the crook of the bend causing collapse down one side. Within the lesion are bright pink/orange spore masses that spread the disease within the crop.**
5. Later as pods start to develop, lesions and spore masses also form on pod tissue that can infect developing seed. Pods can also become deformed and distorted.
6. Anthracnose will develop in patches or ‘hotspots’ within the crop. As the disease is spread through rainsplash of spores, patches of deformed plants will form within the crop as the disease spreads following rainfall events. Windblown rain can quickly spread the disease within a crop.



**Figures 1 and 2:** Images of Anthracnose on albus lupin, showing distinct bending and distortion of stems.





**Figure 3:** Distinct bright orange/pink spore masses within lesions of lupin anthracnose.



**Figure 4:** Advanced lesion development on albus lupin



**Figure 5:** Lesion development on narrowleaf lupin

### **What can we do now..?**

At this stage we need to ascertain the extent of the disease within NSW. To support eradication and continued lupin anthracnose freedom in NSW we need to know if the disease is present outside of the current detection area where we are attempting eradication.

At the moment surveillance of lupin crops is being completed in the detection area by NSW DPI with support from the Riverina LLS.

Across NSW, growers, agronomists, and advisors are encouraged to inspect lupin crops for symptoms of anthracnose and collect any suspect samples or report to NSW DPI of any suspect crops. We also encourage negative inspections (where symptoms of the disease are not found) to be reported, as this supports our on-going surveillance and eradication.

## **Sampling**

Plants suspected of having lupin anthracnose should be sampled and sent for diagnosis.

- Sample plants that show symptoms
- Sample the upper stems, around the flower spikes and pods if present
- Wrap the plants in damp (not wet) paper towel and seal in either a plastic container and a ziplock bag, or two ziplock plastic bags.
- Send the sample by express post early in the week. A cold pack is not needed.

## **Send samples to:**

Dr Kurt Lindbeck, NSW DPI, Wagga Wagga Agricultural Institute, Pine Gully Road, Wagga Wagga NSW 2650, ph: 02 6938 1608

All samples should be accompanied by a **lupin anthracnose sample submission form (attached)**

## **Hygiene**

Lupin anthracnose can be spread on clothing and vehicles.

If you come into contact with a crop showing symptoms of lupin anthracnose, change clothing (including hats) and thoroughly clean footwear and vehicles before entering another paddock.

People entering lupin crops should wear disposable coveralls and rubber boots. Used coveralls should be bagged and securely disposed of. A plastic spray bottle with 90% methylated spirits can be used to spray down boots and hands between crops.

Clothing worn in an infected crop should be bagged, sealed and washed before being worn again.

## **For more information**

<http://www.dpi.nsw.gov.au/about-us/media-centre/releases/2016/damaging-lupin-disease-confirmed-in-nsw>

email: [biosecurity@dpi.nsw.gov.au](mailto:biosecurity@dpi.nsw.gov.au)

call: **Rachel Taylor-Hukins, Grains Biosecurity Officer 0409 945 069**

## **Kurt Lindbeck**

**GRDC project codes: DAN00177**

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