

Germinating Ideas

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With the season fast drawing to a close this edition of Germinating Ideas will look at:

- Verticillium wilt — why have we seen more of it this season?
- Premature senescence — getting crop nutrition right.
- Sicot 289RRi crop update — progress of some Ingard Roundup Ready crops.
- On farm cotton planting seed storage — key points to consider

VERTICILLIUM WILT

Verticillium wilt (*Verticillium dahliae*) is a disease that is a potentially very damaging pathogen of the Australian industry.

The main symptoms are:

- Vascular discolouration extending through the stem to the petioles;
- Leaf mottle — yellowing between the veins and around the leaf margins;
- The root system appears to be healthy; and,
- Some defoliation may occur in cool weather conditions.

The development of a number of varieties with Verticillium tolerance has been the key to reducing the impact of the disease over the past several years.

The 2002–03 cotton season has seen an increase in the presence of the disease, particularly in the southern growing areas. The disease is generally most severe in

cool wet conditions. Periods of wet overcast conditions and water logging particularly late in the crop's development as the season cools down can increase the severity of the disease.

Dr Stephen Allen, Senior Plant Pathologist with CSD said that the annual disease survey conducted by NSW Agriculture has shown that Verticillium wilt has been particularly evident in the Namoi valley.

The incidence of the disease varied from zero to over 60 per cent of plants with symptoms, with a mean of 11.7 per cent. Although the mean incidence is similar to that measured in previous seasons

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it would appear that symptoms developed and became obvious much earlier in the season.

This may be attributed to the cool night temperatures that occurred in early January and February. Overnight minimum temperatures 3°C to 5°C below average for this time of year were recorded on a number of occasions (see Figure 1).

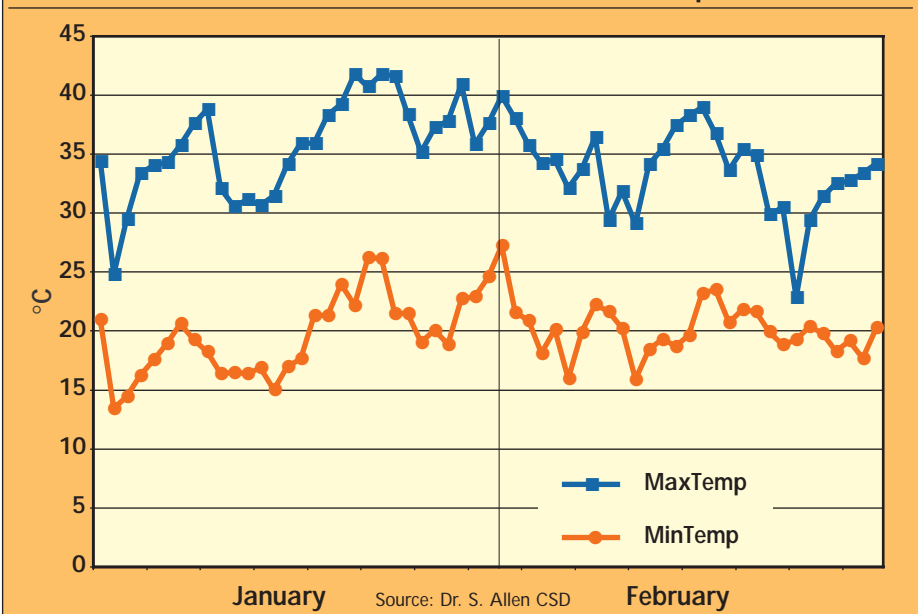
Variety resistance to *Verticillium* wilt is temperature sensitive. Resistant varieties become susceptible when exposed to cool temperatures.

Verticillium wilt has also been obvious in some crops in the St George area and in crops on the Darling Downs. One field at St George had 16 per cent of plants showing symptoms.

Previous studies have shown that the impact of *Verticillium* wilt on yield is most significant when symptoms develop mid season and least significant when infection occurs either very early or very late in the season.

More information on *Verticillium* wilt can be obtained from the Integrated Disease Management Guidelines produced by the Cotton CRC and the CRDC.

FIGURE 1: ACRI Narrabri minimum and maximum temperatures



PREMATURE SENESCENCE

There have been many reports of premature senescence this season. Research findings indicate that premature senescence is linked to periods where the plant cannot take up enough potassium from the soil during peak boll filling.

Potassium is very mobile in the plant and it will be moved around. It can be

taken from the upper younger leaves and put into maturing bolls. This is more so when conditions are not conducive to the plant getting enough potassium from the soil in extended periods of cool overcast weather.

The younger leaves towards the top will all turn red and any shaded leaves will remain green. Quite often the plants along



Richard Cathcart in a crop of Sicot 289RRi.

the edges of field remain unaffected, as there is less competition for available nutrients.

Initially, individual plants in a field show symptoms, a result of varying boll load, root development and inherent genetic differences. Affected plants can also be predisposed to *Alternaria* leaf spot.

Preplant applications in conjunction with foliar applications of potassium nitrate at 10 kg per hectare from early flowering onwards can help prevent the onset. Monitoring of plant petiole potassium levels may indicate potential problem times. Even though levels in the soil are adequate, root systems may not be able to move sufficient potassium during peak boll fill.

Varietal selection can be important. Okra leafed varieties may be more sensi-



Verticillium wilt has been a problem in some areas this season.



Okra leaf varieties may be more sensitive to early senescence.

tive to early senescence but normal leafed varieties can also be affected if conditions are right for it.

Bollgard II varieties have shown high fruit retention and relatively quick boll development so it will be important to manage these to avoid premature senescence. Attention to crop nutrition requirements will help reduce the impact of this disorder.

More information can be obtained from the NutriPak put out by the CRDC and the Cotton CRC or the CSD website's Web on Wednesday section.

SICOT 289RRI

Many growers have been very pleased with the performance of Sicot 289RRi this season from both insect control and potential yield considerations

One such crop, a field at 'Gunedra' Wee Waa, has exceeded expectations so far this season. Grower Richard Cathcart said the pure seed crop was planted on October 1 last year and has never looked back. Seedling vigour was good and an even

plant stand was established.

The crop has received practically no rainfall and has been fully irrigated with an estimated 11 megalitres per hectare applied. There has been no sign of premature senescence.

Only one Agrimec spray has been applied late season for mites and heliothis and two dimethoate sprays for mirids.

As well as a full preplant herbicide program, two over the top applications of Roundup Ready were applied early season which gave good weed control in a relatively dirty field.

Picking of the crop is expected to take place in late March.

ON FARM STORAGE OF COTTON PLANTING SEED

CSD's Extension & Development and Quality Assurance teams have put together a grower information brochure covering on farm storage of cotton planting seed.

The brochure is available on line at www.csd.net.au or from CSD offices in Dalby or Wee Waa.

