

Germinating ideas

By Craig McDonald, CSD Extension and Development Agronomist

This edition will look at Bion, a new seed treatment from Syngenta and CSD and a new seed treatment facility at CSD. Bion has been in extensive trials over several seasons and is now available as a seed treatment option for this coming cotton season. CSD has recently installed the new seed treatment system in order to speed up treatment times, increase the accuracy and minimise downtime between variety changes.

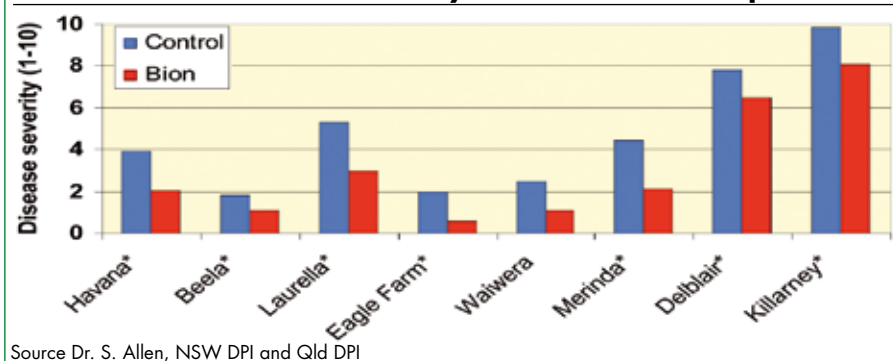
This will enable the optimum application of new seed colours and seed treatments. With new technologies now available, checking and double checking bag and seed colours at planting on a field and whole farm basis can help reduce errors.

BION

Bion is a seed treatment that actively stimulates the plant's own defenses against diseases such as Fusarium wilt and black root rot.

At the time of writing, Bion is not fully registered but this is expected soon. Bion is available on all CSD varieties alone with Dynasty or in a combination with Dynasty, Cruiser and Bion. It will be available on conventional, Pima, Bollgard II/Roundup Ready, Bollgard II/Roundup Ready Flex, Roundup Ready, Roundup Ready Flex and

FIGURE 2: Black root rot severity in control and Bion plots



Source Dr. S. Allen, NSW DPI and Qld DPI

Liberty Link cotton seed. That is, every type and seed technology available from CSD.

The pending registration has been made possible following many years of trialing by Dr Stephen Allen, Greg McNamara and the CSD extension and development team. This exhaustive trialing has shown it to be effective in reducing plant losses from both black root rot and Fusarium Wilt.

Bion contains Acibenzolar-S-ethyl and it acts like a switch to turn on the cotton's own defense system against pathogens. It is not the answer to black root rot and Fusarium but it is a potentially valuable tool in an integrated disease management (IDM) strategy.

The NSW DPI, Queensland DPI and CSD have conducted plant disease surveys over a number of years to try to quantify the amount of seedling mortality. This information is invaluable to determine the amount of seedling loss and what has caused it.

Some facts about black root rot

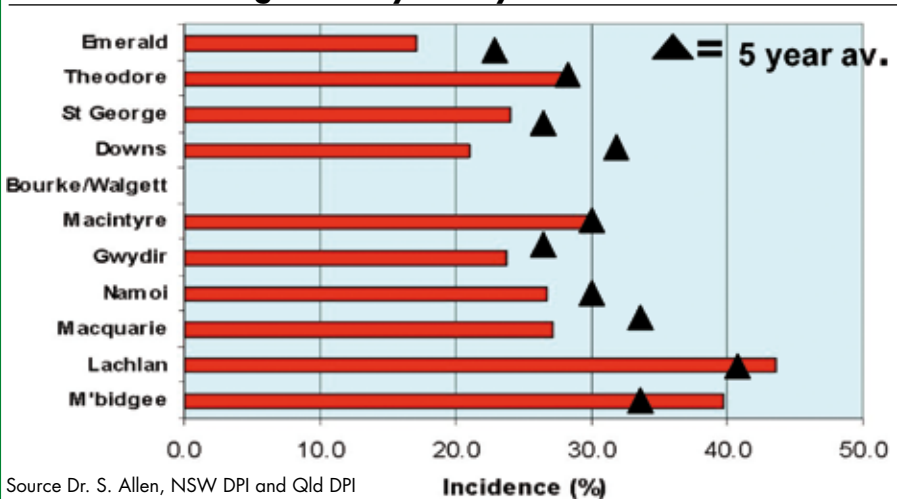
- It is favoured by cool conditions early in the season;
- Black root rot does not kill seedlings;
- Black root rot delays the crop; and,
- If the season is long enough then the crop can make up for lost time. A long season with a good finish minimises differences at harvest

Any seed treatment, fertiliser or in-furrow spray that claims to improve plant stands in black root rot areas is not actually controlling BRR as the disease alone does not kill cotton seedlings.

Integrated disease management for black root rot

- Use varieties that can 'catch up';
- Use Bion seed treatment;
- Prepare beds well;
- Pre-irrigate and/or plant into moisture;
- Delay planting if possible;
- Rotate with non-hosts for up to three years;
- Avoid legumes and control weeds;
- Effective biofumigation;

FIGURE 1: Seedling mortality survey 2006-07 season



Source Dr. S. Allen, NSW DPI and Qld DPI

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Some of the new CSD seed treatment system — chemical control modules (left) and treated seed on the gravity table.

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- Minimise tailwater;
- Summer flooding if possible; and,
- Always practice good farm hygiene.

Integrated disease management for Fusarium wilt

- Plant a high F.rank variety;
- Use Bion seed treatment;
- Delay planting to the end of October;
- Avoid cultivating with knives;
- Retain cotton residues on the surface;
- Bare fallow rotation is best;
- Burn, bury or bale cereal residues ASAP;
- Minimise your tailwater;
- Summer flooding if possible; and,
- Always practice good farm hygiene.

NEW SEED TREATMENT SYSTEM INSTALLED AT CSD

CSD at Wee Waa has recently installed a new seed treatment system at a cost of almost \$3 million. The new batch treating

plant has been commissioned and is being used to treat all seed orders for the 2007 planting. It is one of the most modern cotton seed treatment units anywhere in the world. It will enable:

- Increased accuracy of chemical application;
- Increased production efficiencies;
- Increased production flexibility;
- Greater range of treatment options;
- OH&S improvements;
- Cost savings; and,
- Timeliness of supply.

Seed treatments and colours

There have been changes to the colours used for the different seed types used across the industry. The main change is that Bollgard II/Roundup Ready Flex will now be coloured blue, the most recognisable colour. Blue was previously used on conventional cotton seed. Conventional cotton seed will now be coloured silver.

The addition of Liberty Link cotton has

seen the introduction of a gold coloured treatment. New distinctive seed bags and colours will be used in order to help distinguish between varieties within technologies and between the groups.

Field identification, record keeping and good communications will be vital at and following planting to ensure there are no mix ups. CSD will have field signs available to help with distinguishing fields with different technologies (for example Roundup Ready Flex field beside a conventional field).

Clear maps and instructions to employees and contractors will help reduce the number of operational problems. Good communications with neighbours will also be critical where herbicide tolerant crops are planted close to neighbouring ones.



The centrifugal batch mixer — part of the new seed treatment plant.

TABLE 1: Seed colours and treatments available

Seed Technology Class	2007 Colour	Cruiser®	Bion®	Cruiser + Bion®	Amparo®	Gaicho®	Genero®	Super Semevin®	Dynasty® only
Conventional (incl Pima)	Silver	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Roundup Ready®	Orange	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Roundup Ready Flex®	Violet	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Liberty Link®	Gold	No	Yes	No	Yes	Yes	No	No	Yes
Bollgard II®	Green	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bollgard II / Roundup Ready Stack	Red	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bollgard II / Roundup Ready Flex	Blue	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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