



Queensland Government
Department of
Primary Industries
and Fisheries

COTTON TALES

Central Queensland

Susan Maas ☎ 07 49837403 📠 07 49837459 ✉ susan.maas@dpi.qld.gov.au

Lance Pendergast ☎ 07 49837416 ✉ lance.pendergast@dpi.qld.gov.au

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No.12

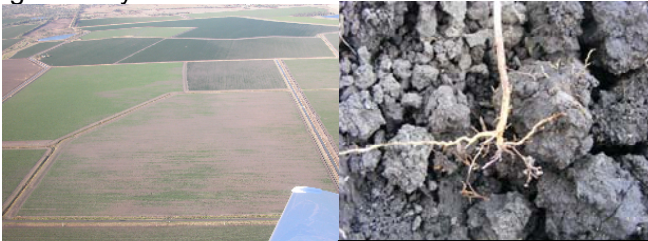
23/12/08

Day Degree accumulation to the 22 Dec 08

District	Season 08/09	Season 07/08	Season 06/07	Cold Days	Hot Days
Emerald (from 15/09/08)	1328	1316	1310	2	21
Theodore (from 25/09/08)	1135	1165	1119	5	22

Stunted crops in Theodore

A number of crops in Theodore have had problems with root development resulting in significantly stunted plants that have failed to thrive. While there are quite a few affected fields, they range from the odd stunted plant (particularly where a plant was in an area of slightly lower plant stand) to one field of Peter French's that has been significantly affected.



Aerial photo showing extent of damage on worst field. (Photo by Peter French)

Roots with "witches broom" symptom

Peter French identified the presence of large populations of symphylans in the soil under these crops. Symphylans are white, soft-bodied "centipede-like", soil-inhabiting arthropods, 3-7 mm long with 12 pairs of legs & a pair of antennae. Symphylans are sensitive to light and are very active when exposed. Symphylans are generally considered decomposers and a part of healthy soil biota. Typically the symphylans eat out the soft root tips, with the effect of repeated root tip loss resulting in a witches broom symptom.

Peter has some patches where pre-plant compaction from farm traffic has resulted in vastly improved plant growth. Symphylids are not able to burrow, but instead use the cracks to move around. As a result they favour moist, well structured soils rich with organic matter.



Symphylan found in Theodore

ability to severely curtail root growth on newly planted pineapple crowns. Twelve symphylans per pineapple crown for 9 weeks was sufficient to reduce root dry matter by 48% compared to untreated controls.

Dave and Zara Ludgate collected samples from fields and estimate they were recovering about 50 individuals per shovel full. At this abundance, he believes the symphylans have been a serious factor this season.

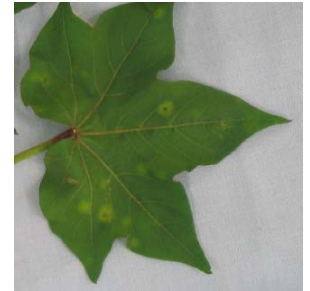
Symphylans are a problem in quite a few crops including sugar cane. Dave Murray (QDPI&F) has previously observed symphylans in pineapples & demonstrated their

Dave and Zara have set up a colony & aim to conduct pot experiments before the end of summer. He has also contacted an agrochemical company to see what information is available regarding chlorpyrifos use as it relates to symphylans in sugarcane and to flag the fact that industry may seek a permit for next season in order to evaluate this treatment.

If you do have a stunted crop that can't be explained, dig around the roots as they are easy to spot when you pull a clod apart and they quickly scurry about.

Spotty Cotton

We have a few reports of 'spotty' cotton near Emerald. Symptoms include yellow spots on developed leaves, some with small areas of red or necrosis. The spot is usually confined to a certain layer in the crop with no spots on newer or older leaves.



Symptoms tend to eventually disappear but can be mistaken for spray drift. Dr Stephen Allen has seen these symptoms in December 04, December 05 & January 08 (see Stephen's photo). It seemed to follow a combination of rain + high temp (>35°C) + high radiation (>30+). It could be sunburn from 'hot' water droplets or water droplets acting like a magnifying glass on the leaf surface. They have found no evidence of any pathogen or pest

CottASSIST website

www.cottassist.cottoncrc.org.au

CottASSIST is a group of web tools designed to deliver the latest cotton research, integrate up-to-date information & assist with cotton management decisions. You may already be familiar with some of the tools such as: Crop development tools, Day Degree calculator, Diapause/emergence, Last Effective flower calculator, & Nutrilogic. Others such as the Water Quality tool & Aphid Yield Loss tool are more recent developments.

One of the most notable changes is now the capacity to save details of your farm, fields, & previous data entries. Registering is very simple and quick via the log in page & information entered is kept confidential.

Once you have logged in you can access, Diapause Induction and Moth Emergence Tool, Last Effective Flower Tool and NutriLOGIC. The Day Degree Calculator is available to all users.

The remaining tools require farm setup. If entering multiple farms, the farm name must be unique. Each farm is allocated to a Region & a SILO Station. The SILO station is used to retrieve weather data & the Region contains details about the Average Season Length. The next step is to create your crops. The crop name does not need to be unique. Data for the same field over multiple seasons can be recorded by entering a different sowing date.