

NOTES FROM THE Cotton CRC/DEEDI SHED MEETINGS

Based on comments from Mike Bange, CSIRO and Nilantha Hulugalle, NSW I&I.

Impact of waterlogging:

- Root death
- No transpiration
- Production of ethylene

Also associated with cloud – limited light and temperature.
Outcome – limited yield with a loss of 0.3 to 0.6 b/ha for every week reduction in season length.

Impact of gappy stands – refer to CSD Replant Guide.

How long to grow out crops beyond normal?

Based on average first frost occurrence, date of Last Effective Square to produce a mature boll before that is about now for Cecil Plains weather data. Refer to the tables on Page 2.

Note: La Nina year may mean later frost BUT reduced Day Degrees during February March and thus longer development times.

Consider the consequences of pushing the crop into cool weather:

- Fibre quality, micronaire and Neps problems
- Defoliation can be difficult
- Regrowth associated with moisture and high nutrient level
- Attractiveness of crop to aphids and whitefly.

Plant Assessment

- Examine roots – need white, fresh roots
- Roots need to be growing in moist soil
- Consider plant framework/ structure – extent of stems branches and leaves to support growth
- New regrowth – colour of plant tips and new branch growth
- Squaring
- Nodes Above White Flower (NAWF) – are the plants cutting out?

Note: Plants grow larger but thinner leaves to capture more light during prolonged cloudy periods and are thus susceptible to dehydration with fewer stomates and to foliar fertiliser burn.

Management Options

Nurse the plants to stimulate root growth and avoid further stress.

Assist recovery not production as a boll load can restrict growth. Aiming for downward growth first before upward growth!

Irrigation if the roots are in dry soil:

- Shorten intervals
- Less water/quick flush
- Avoid waterlogging

Avoid cultivation of wet soil as this will cause smearing and structural deterioration, leading to inhibited water infiltration, poor root growth and enhance waterlogging in future.

Foliar application if the plant is growing and new growth is not a dark green colour.

N fertiliser – the yield potential is much less. Nitrogen will have been lost through denitrification in the surface layers and leaching to deeper layers.
Maximum application of 50 kg/ha but maybe only 30 kg/ha for sidedressing
- with the lower yield potential N requirement is reduced.

Use Pix to manage vegetative growth which should be monitored as the boll load is coming on along with significant vegetative growth.

Differentiate treatment between top and bottom of field if necessary.

With late crops at season end, maybe not apply Prep which will open late bolls prematurely by stimulating the production of ethylene and aggravate fibre quality problems with little contribution to yield..

For more detailed information and an extrapolation of these points please contact:

| | |
|--------------------|--------------|
| Duncan Weir | 07 4688 1602 |
| Geoff McIntyre | 07 4669 0801 |
| Mike Bange | 02 6799 1540 |
| Nilantha Hulugalle | 02 6799 1533 |
| John Marshall | 07 4662 6050 |

APPRECIATION

Special thanks to Andrew Watson, Mike Bange, Nilantha Hulugalle, John Marshall, Gordon Baker, Graham Harris and Pat Daly for their contributions to the shed meetings last week and to the growers who hosted us on their properties.

The boll maturation and harvest data on page 2 was derived from CottASSIST Crop Tool on the Cotton CRC website. cottoncrc.org.au

Thank you to Susan Maas, DEEDI Emerald and David Kelly, CSD Goondiwindi for their advice in the preparation of the data.

Days to Open Boll for Squares set on each date and Open boll date

| Development stage | Day Degrees | Date square set | | |
|---------------------------|-------------|-----------------|------------|------------|
| | | Jan-27 | Feb-12 | Mar-01 |
| Square to flower | 270 | 21 | 22 | 24 |
| Flower to max boll size | 310 | 26 | 29 | 38 |
| Max boll size to mature | 365 | 41 | 55 | 90 |
| Mature to fully open boll | 75 | 11 | 19 | 19 |
| Total days | | 99 | 125 | 173 |
| Open boll date | | May-05 | Jun-17 | Aug-21 |

Last Effective Square and Flower Dates

PITTSWORTH

| Based on First Frost | | | |
|----------------------|--------|--------|--------------|
| | Square | Flower | Harvest Boll |
| Average | Jan-06 | Feb-13 | May-21 |
| Earliest | Dec-12 | Jan-23 | Apr-13 |
| Latest | Jan-25 | Mar-02 | Jun-25 |

| For a Target Harvest Date | | | | | | |
|---------------------------|-----------------------|----------|--------|-----------------------|----------|--------|
| Harvest Date | Last Effective Square | | | Last Effective Flower | | |
| | Average | Earliest | Latest | Average | Earliest | Latest |
| Jun-01 | Jan-01 | Dec-25 | Jan-27 | Feb-18 | Feb-08 | Mar-03 |
| Jun-15 | Jan-14 | Dec-29 | Jan-31 | Feb-22 | Feb-12 | Mar-08 |
| Jun-30 | Jan-17 | Jan-2 | Feb-4 | Feb-28 | Feb-13 | Mar-12 |

DALBY

| Based on First Frost | | | |
|----------------------|--------|--------|--------------|
| | Square | Flower | Harvest Boll |
| Average | Jan-23 | Feb-26 | May-11 |
| Earliest | Dec-29 | Feb-05 | Apr-17 |
| Latest | Feb-09 | Mar-16 | Jun-28 |

| For a Target Harvest Date | | | | | | |
|---------------------------|-----------------------|----------|--------|-----------------------|----------|--------|
| Harvest Date | Last Effective Square | | | Last Effective Flower | | |
| | Average | Earliest | Latest | Average | Earliest | Latest |
| Jun-01 | Jan-25 | Jan-12 | Feb-06 | Feb-28 | Feb-19 | Mar-09 |
| Jun-15 | Jan-29 | Jan-15 | Feb-12 | Mar-05 | Feb-24 | Mar-14 |
| Jun-30 | Feb-2 | Jan-20 | Feb-15 | Mar-9 | Feb-27 | Mar-20 |

CHINCHILLA

| Based on First Frost | | | |
|----------------------|--------|--------|--------------|
| | Square | Flower | Harvest Boll |
| Average | Jan-27 | Mar-01 | May-27 |
| Earliest | Jan-03 | Feb-10 | Apr-22 |
| Latest | Feb-12 | Mar-18 | Jun-26 |

| For a Target Harvest Date | | | | | | |
|---------------------------|-----------------------|----------|--------|-----------------------|----------|--------|
| Harvest Date | Last Effective Square | | | Last Effective Flower | | |
| | Average | Earliest | Latest | Average | Earliest | Latest |
| Jun-01 | Jan-30 | Jan-16 | Feb-10 | Mar-03 | Feb-23 | Mar-12 |
| Jun-15 | Feb-03 | Jan-20 | Feb-14 | Mar-08 | Feb-28 | Mar-16 |
| Jun-30 | Feb-7 | Jan-25 | Feb-18 | Mar-13 | Mar-3 | Mar-21 |