

# ***Ecology & management of common sowthistle***

Today's presenters are

**Michael Widderick (QDAF)**

**Annie van der Meulen (QDAF)**

Facilitated by Mark Congreve and Erica McKay (ICAN)

This Webinar will start at the following times

9 AM (NSW/VIC/TAS)

8 AM (QLD)

GRDC Project code: ICN00016

# Housekeeping

- On your screen on the top right you will see a small red arrow pointing to the left. If you click on this, this will open up a chat box to ask questions & audio etc.
- We are using chat box for questions, audio questions are muted to maximise sound quality. Questions will be relayed by the moderator.
- Questions (except for clarification) will be left until the end of the presentation and repeated by the moderator
- Should you drop out, please go to [joinwebinar.com](http://joinwebinar.com) and enter the webinar code **116-646-795** (should also be on the confirming emails you have been sent).
- If you are having audio difficulties, you will see a place to select 'telephone' on your chat box – this will come up with the phone number and log in pin to join the webinar by phone. Phone number is **03 8488 8991** , code **938-193-455** and a individual pin number.

Moderator: Erica McKay

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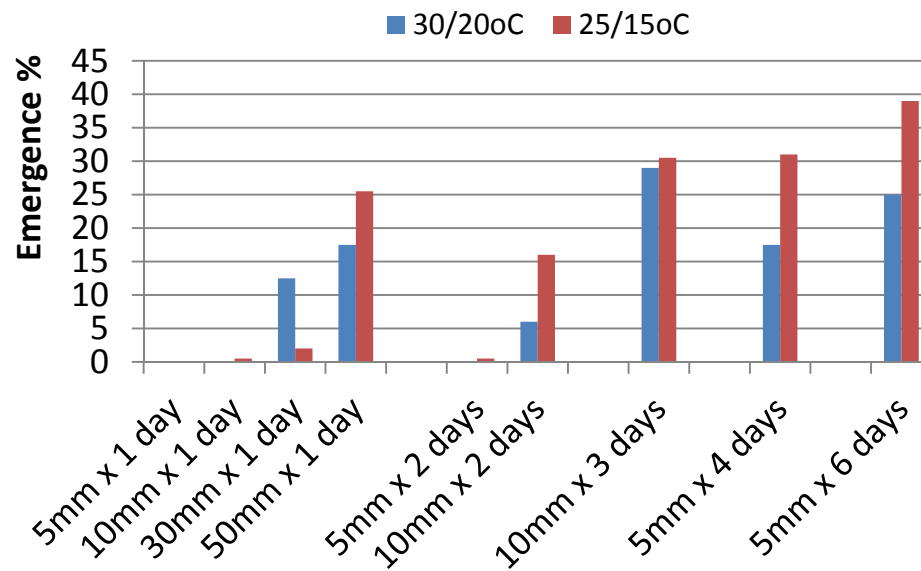
# Today's Agenda

- Sowthistle ecology
  - Why it has become a weed of zero till?
  - Understanding ecology & agronomy to manage it?
- Resistance to glyphosate
- Management strategies

# Sowthistle

- Germination profile
  - Will germinate all year round (5-35°C)
  - No / minimal dormancy
  - Sufficient soil moisture for a few days

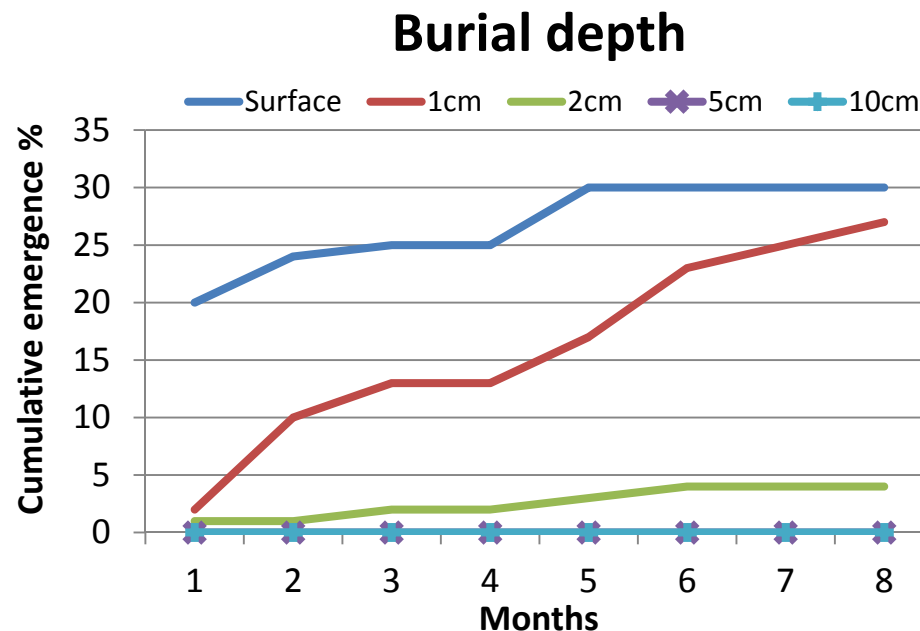
**Effect of rainfall on germination**



Source: Northern IWM factsheet. Common sowthistle. QDAF

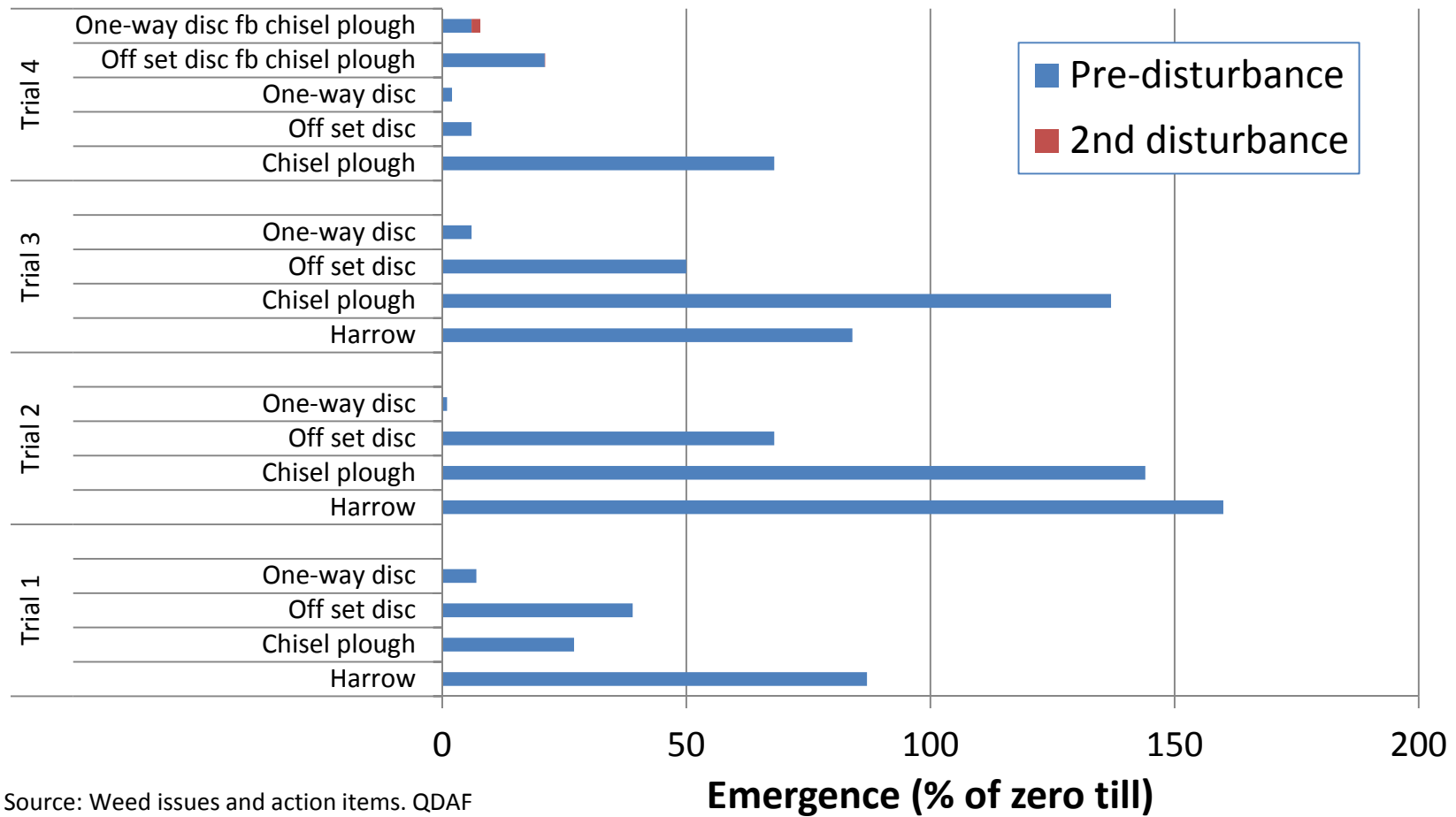
# Sowthistle

- Surface germinator
  - 0-1cm, no germination from depth
  - Adapted to zero till



Source: Management of common sowthistle. QDAF

# Cultivation type



Source: Weed issues and action items. QDAF

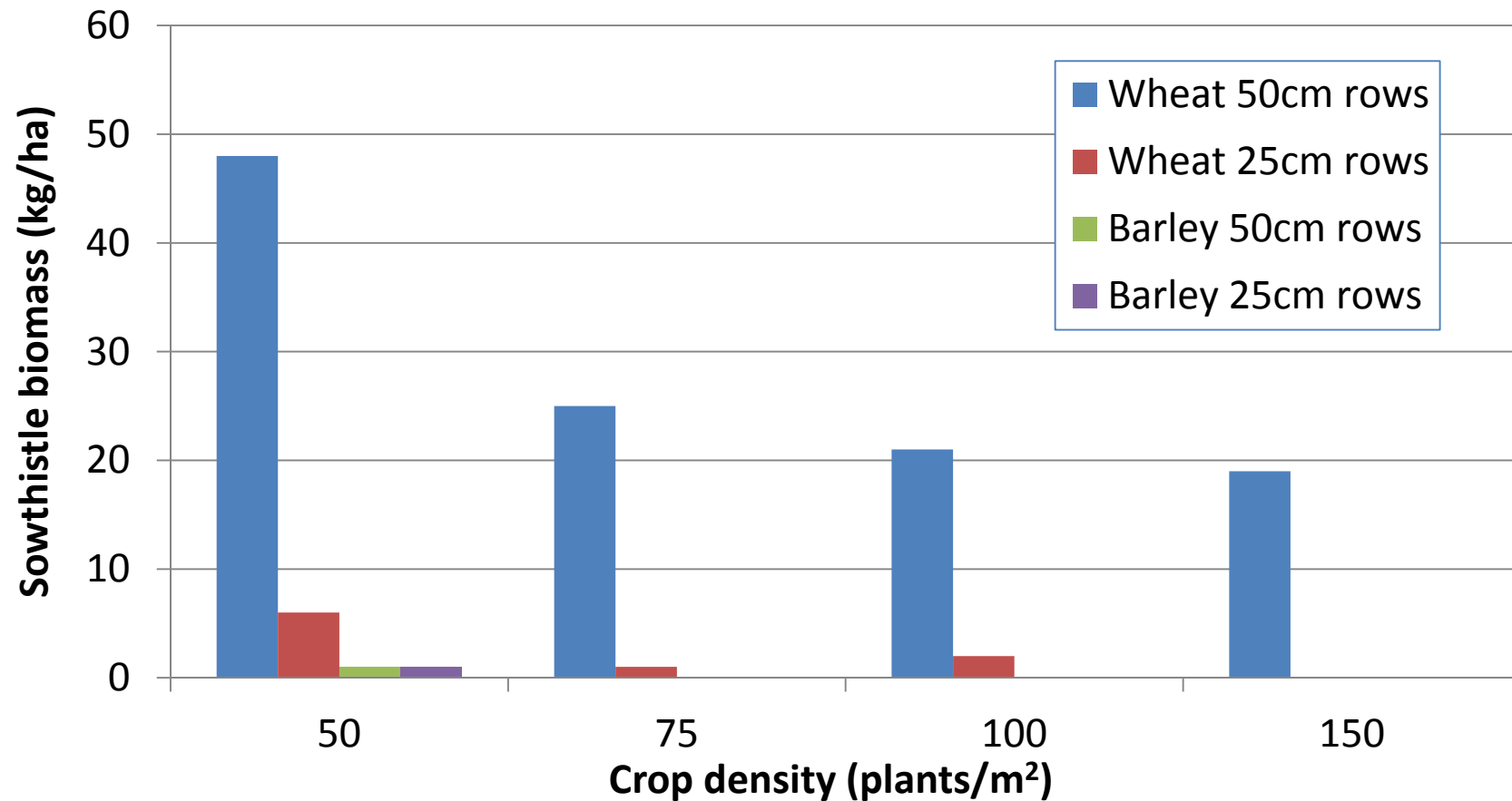
# Persistence

- Seed short lived on soil surface
- Burying seed increases dormancy

Depth	Persistence
0 - 2cm	8 – 12 months
5 - 10cm	Up to 10% viable after 2 – 3 years



# Competition



Source: Management of common sowthistle. QDAF

# Sowthistle

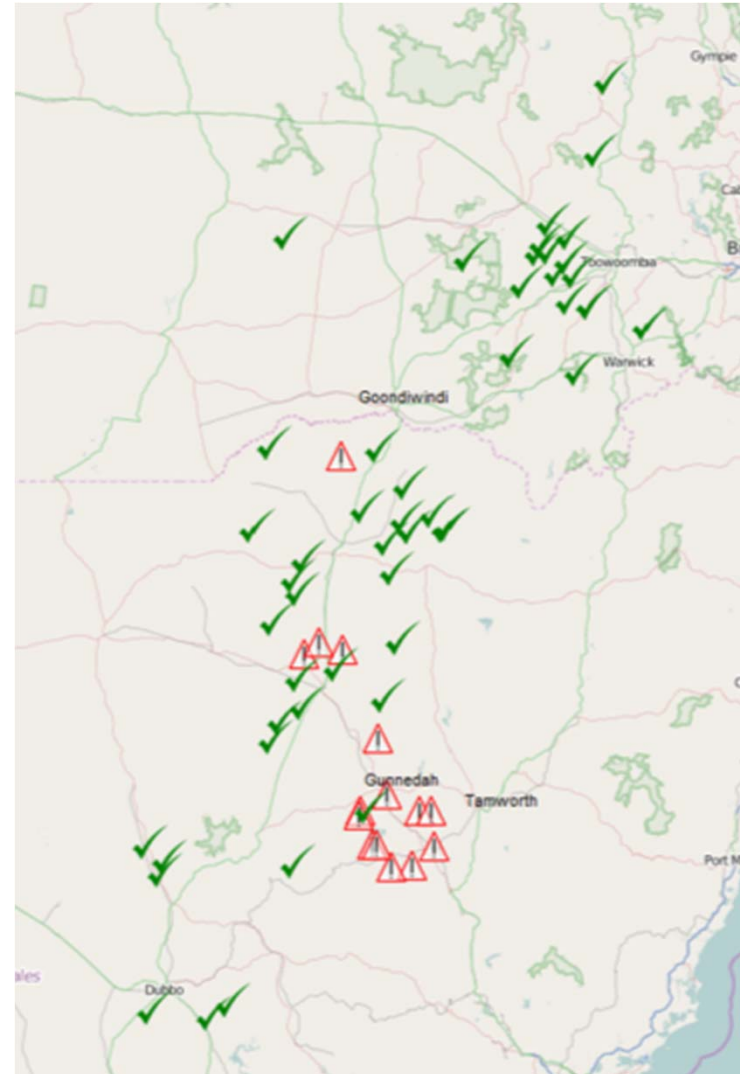
- Prolific seeder
  - Up to 25 000 seeds / plant
  - High percentage of viability
  - No/minimal innate dormancy
  - Each seed has a pappus to aid wind dispersal
  - Most seed falls with 2-3m



Photo: Annie van der Meulen

# Resistance update

- Group B widespread
- Group M (glyphosate)
  - Confirmed in 2014
  - Send populations for testing



# Winter cereals

- Pre-emergent
  - Terbyne Xtreme now registered for IBS application
- Early crop competition is very effective
- In-crop post-emergent options
  - Bromoxynil (Group C)
  - Precept (Group H + I); Velocity (Group H + C)
  - 2,4-D; 2,4-D + picloram; FallowBoss Tordon; Fluroxypyr (Group I)

# Chickpea

Poor crop competition

No post-em options

Irregular rainfall



often allows for escapes  
(especially without Balance)

- Pre-emergent
  - Balance (Group H)
    - Medium – long residual control
  - Cyanazine, simazine, terbuthylazine (Group C)
    - Often in combination with Balance

# Fallow - Knockdown

- Many options for rosette size

<b>C</b>	<b>G</b>	<b>I</b>	<b>L</b>	<b>M</b>	<b>N</b>	<b>Q</b>
Atrazine Terbyne	Goal Sharpen Valor	2,4-D 75-D FallowBoss Fluroxypyr	Paraquat Paraquat/diquat	Glyphosate	Glufosinate	Alliance Amitrole T

# Fallow - Knockdown

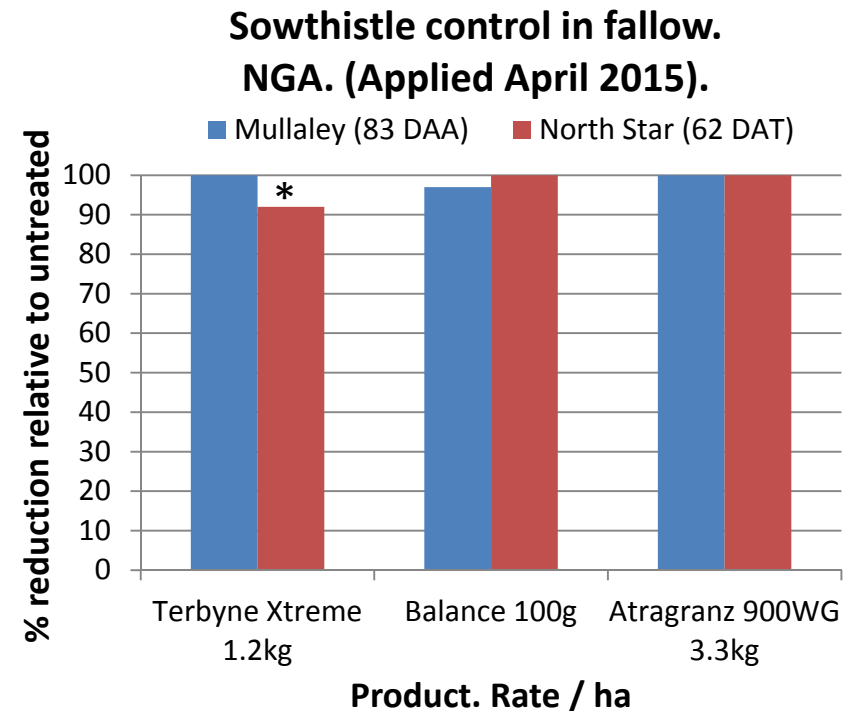
- Elongation to flowering
  - Don't tank mix 2,4-D or metsulfuron with glyphosate
  - Double knock
    - 2,4-D followed by paraquat
    - 75-D +/- glyphosate followed by paraquat
  - Optical (camera) sprayer

<b>Sowthistle.</b> Rate per 100L spray mix. Calibrate sprayers to apply 100L/ha.	
<b>Nuquat® 250</b>	6-9 L
<b>Trooper® 75-D</b>	2-4 L
<b>Comet® 400</b>	1-3 L
<b>Amicide® Advance</b>	4-8 L
<b>Amitrole T</b>	5-10 L
<b>Weedmaster® DST</b>	3.5 L
<b>Alliance®</b>	7-10 L



# Fallow - Residual

- Fallow
  - Terbyne (Group C)
    - short-medium residual
  - Balance (Group H)
    - medium-long residual (rainfall dependent)
- Pre-emergent sorghum/maize
  - Atrazine (Group C)





# Sowthistle Best Management

1. Resistance testing
  - Important to know which herbicides will work
2. Farm hygiene – keep roads & channels clean
3. Aim for 100% elimination of seed set for 2-3 years
4. Maximise crop competition in winter cereals
5. Chickpea – potential ‘blow out’ crop
6. If relying on knockdowns in fallow
  - Treat small weeds (or use WeedSeeker at high rates)
  - Plan to double knock
7. Apply residuals early in fallow
  - Flame will need a partner
8. Cultivation prolongs seed life in soil

# Questions

*ICAN wish to thank our presenters, the GRDC northern Grower Solutions Groups and northern Weeds Research Groups for making their data available for this webinar.*

## Further information on sow thistle

Ecology and management of common sowthistle ( <i>Sonchus oleraceus</i> L.)	<a href="http://www.qaafi.uq.edu.au/?page=220603&amp;pid=210447">http://www.qaafi.uq.edu.au/?page=220603&amp;pid=210447</a>
Common sowthistle – Integrated weed management hub	<a href="https://www.grdc.com.au/Resources/IWMhub/Section-8-Profiles-of-common-weeds-of-cropping/Common-sowthistle">https://www.grdc.com.au/Resources/IWMhub/Section-8-Profiles-of-common-weeds-of-cropping/Common-sowthistle</a>
Managing herbicide resistant weeds in the summer fallow	<a href="https://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2014/07/Managing-herbicide-resistant-weeds-in-the-summer-fallow">https://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2014/07/Managing-herbicide-resistant-weeds-in-the-summer-fallow</a>
Weed issues and action items	<a href="http://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2015/07/Weed-issues-and-action-items">http://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2015/07/Weed-issues-and-action-items</a>