



DEFOLIATION PREPARATION



TRAINING AND ACCREDITATION

- A current chemical user accreditation certificate (AQF 3) is required by any operators applying chemicals in NSW
- All spray contractors and staff need to be licensed by EPA or Biosecurity Queensland



RECORD KEEPING AND PROTOCOL

- Legislation requires accurate records to be made
- Records need to be kept for 3 years in NSW and 2 years in QLD
- Check labels for any extra records that need to be kept in addition to state requirements



CROP MONITORING AND MATURITY

- Spend time in-crop accessing maturity
- Focus on seed maturity utilising various methods such as boll cutting, percentage open and NACB **maturity assessment**
- Run down soil water (past refill) and nitrogen - this starts earlier in the season



PRODUCT CHOICE AND RATE

- See table below
- Choose products which are fit for purpose. Ensure to follow label instructions
- Be aware of the effects of mixing partners and adjuvants on volatility and drift potential
- Adjust label rates to account for temperatures pre and post application



DROPLET SIZE

- Coverage is Key
- Always adhere to the label requirement
- Larger droplets can assist in crop penetration
- Assess current environmental conditions prior to, during and after application



CONDITIONS TO CONSIDER

- Crop condition
 - Water stress
 - Nutrition levels
- Low humidity
- Temperature
- Monitor weather forecast in the lead up to, and 3-5 days post application
- Leaf impediments
 - Waxiness
 - Honeydew
 - Dust
- Rainfastness of product
- Wind direction and speed



MINIMISE DRIFT

- Be aware of sensitive crops, riparian zones and native vegetation
- All products have the potential to drift. Always spray under suitable conditions
- Comply with mandatory label requirements for buffer zones
- Planning ahead and communication between grower, agronomist and applicator is **KEY**

DON'T FORGET TO CLEAN AND DECONTAMINATE SPRAY EQUIPMENT PRIOR TO, AND AFTER DEFOLIATION

For more information on how to make the decision to defoliate and to maximise yield and fibre quality visit www.cottoninfo.com.au/blog/defoliation-what-do-consultants-say

USE PATTERN AND EXPECTED ACTIVITY FOR DEFOLIANTS, BOLL CONDITIONERS AND DESICCANTS

ACTIVE INGREDIENT	TRADE NAME EXAMPLES	PRODUCT TYPE	LABEL RATE	WATER RATE	RAINFEST PERIOD	CRITICAL COMMENTS	MATURE LEAVES	NEW GROWTH	RE-GROWTH PREVENTION	BOLL OPENING
Thidiazuron 500g/L	Dropp, Escalate	Defoliant	50-200 ml/ha depending on temperatures plus label rate of D-C-TRON cotton spray oil	Air: 20-40L/ha Ground: 90-100L/ha	24 hours	<ul style="list-style-type: none"> • Do not use when night temps fall below 12°C and/or mean day/night temps fall below 18°C. • Mixing with Glyphosate could cause leaf freezing. 	Excellent	Excellent	Excellent	Poor
Thidiazuron 120g/L + Diuron 60g/L	Thi-Ultra	Defoliant	150-400ml/ha depending on temperatures plus the recommended label rate of Hasten Spray Adjuvant, Ad-Here Spray Adjuvant or D-C-TRON @ cotton spray oil	Air: 40L/ha Ground: 90-100L/ha	24 hours. Do not apply if a total of 50 mm of rain is expected within 3 days of application.	Use higher rate for denser canopies.	Excellent	Excellent	Excellent	Poor
Thidiazuron 240g/L + Diuron 120g/L	Dropp Ultra MAX, Escalate Ultramax	Defoliant	75-200ml/ha depending on temperatures plus label rate of D-C-TRON @ cotton spray oil	Air: 20-40L/ha Ground: 90-100L/ha	24 hours. Do not apply if a total of 50 mm of rain is expected within 3 days of application.	<ul style="list-style-type: none"> • Can be used in all conditions as well as where Dropp Liquid cannot be used ie. night temps fall below 12°C and/or mean day/night temps fall below 18°C. • Use higher rate for denser canopies. 	Excellent	Excellent	Excellent	Poor
Pyraflufen-ethyl 25g/L	ETee	Defoliant	80ml/ha First pass. 40ml/ha second pass. Always apply as a tank mixture with ethephon and D-C-TRON @ cotton spray oil or HASTEN	Air: 20-40L/ha Ground: 90-100L/ha	2 hours	<ul style="list-style-type: none"> • Always apply as a tank mixture with ethephon and D-C-Tron Cotton or HASTEN. • Apply when the last harvestable boll is physiologically mature. Use higher rates where canopy is denser. 	Excellent	Fair	Fair	Poor
Ethephon 900g/L or 720g/L	Prep, Promote Plus	Growth regulator/ Boll conditioner	1.6L/ha -2.4L/ha	Minimum: 20L/ha	8 hours	Use higher rates on stressed plants, heavier crops and ensure uniform coverage of bolls.	Poor	Poor	Fair	Excellent
Ethephon 275g/L + AMADS 873g/L	CottonQuik	Growth regulator/ Boll conditioner	2L-3L/ha must be mixed with Thidiazuron for defoliation	Air: 30L/ha Ground: 90-100L/ha	8 hours	<ul style="list-style-type: none"> • DO NOT use with Thidiazuron plus Diuron based products. • DO NOT use Crop Oil Concentrates. 	Poor	Poor	Fair	Excellent
DESICCANTS FOR REGROWTH										
Diquat 200g/L	Reglone, Diquat 200	Desiccant for regrowth	2-3 L/ha or 700ml/ha + 16.5 L/ha Leafex	Air: 30-60L/ha Ground: 100L/ha			Poor	Poor	Excellent	No activity
Carfentrazone-ethyl 400g/L	Hammer	Desiccant for regrowth	50-60ml/ha	Air: 30L/ha Ground: 100L/ha	1 hour		Poor	Poor	Excellent	No activity
Paraquat 135g/L + Diquat 115g/L	Spray Seed	Desiccant for regrowth	1.2-1.6L/ha	Ground: 50-100L/ha			Poor	Poor	Excellent	No activity

Disclaimer: This list is not extensive or exhaustive list of all products available. Please consult with your agronomist and reseller prior to product selection. Always check the label.



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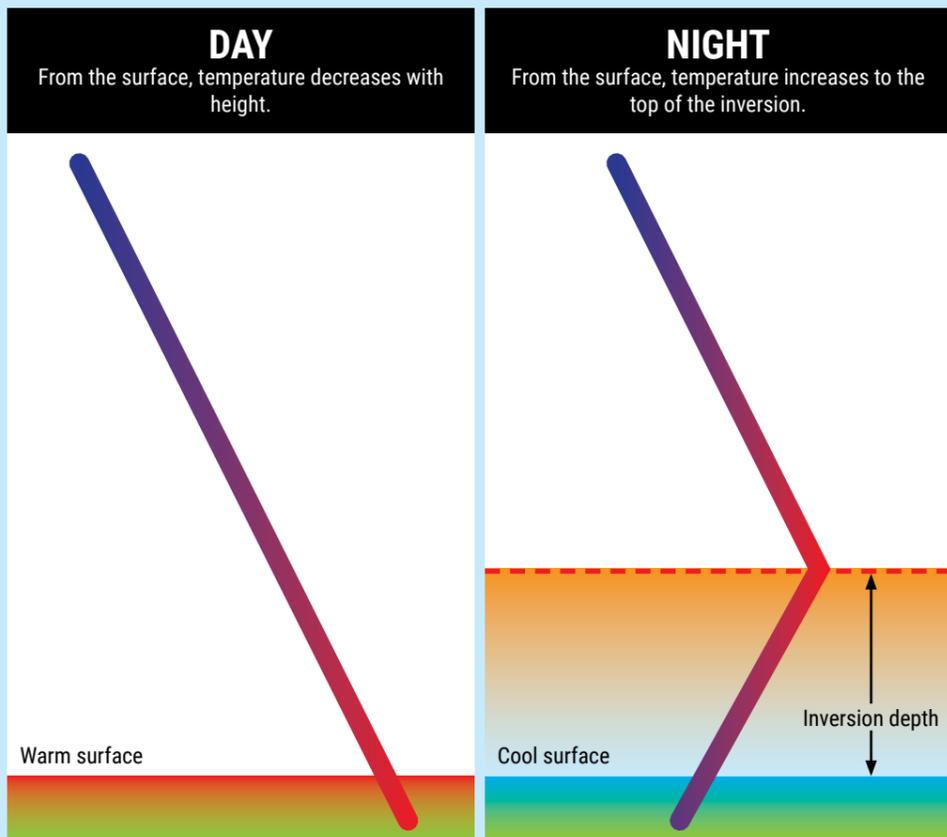
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Best Practice



KEEP DEFOLIATION ON TARGET

WHAT IS AN INVERSION?



Above: Typical vertical temperature profiles for a point in time during the night and day. The day profile typically cools with height and the night profile typically warms with height to a depth which constitutes the surface temperature inversion layer. The point where the temperature stops increasing is the top of the surface temperature inversion layer.

1 NEUTRAL CONDITIONS FAVOUR PLUME DEPOSITION TO THE NEAR SURFACE



2 UNSTABLE CONDITIONS PROMOTE VERTICAL DISPERSION



3 STABLE CONDITIONS CAUSE HIGH CONCENTRATION NEAR THE SURFACE



● Fine ▲ Medium ▼ Coarse

Source: GRDC Weather Essentials for Pesticide Application Booklet, 2017; author: Graeme Tepper.

24 Hour risk profile for Summer spraying

Always follow label instructions

