



the gwydir grower

20th December 2022

Damaging Spray drift has been reported in the Gwydir and with harvest almost done and fallow sprays before Christmas, lets prevent any further spray drift in the region.

PLEASE AVOID USING VOLATILE PRODUCTS – look for safer option and follow the 5 commandments when spraying

- When we **Choose to Spray**, will determine where and how far the spray driftable fraction of our application will move
- The **Sprayer Set-up** will determine how much product will be left in the air.
- **Coarser Spray Qualities / Nozzles** will lower drift risk but can also impact efficacy
- Having a set of **Spray-Plans** for different paddock situations will enable efficient, safe and effective spraying.

Source: Harry Pickering, ADAMA, GRDC webinar: [The new inversion tower network and reducing spray drift risk](#)

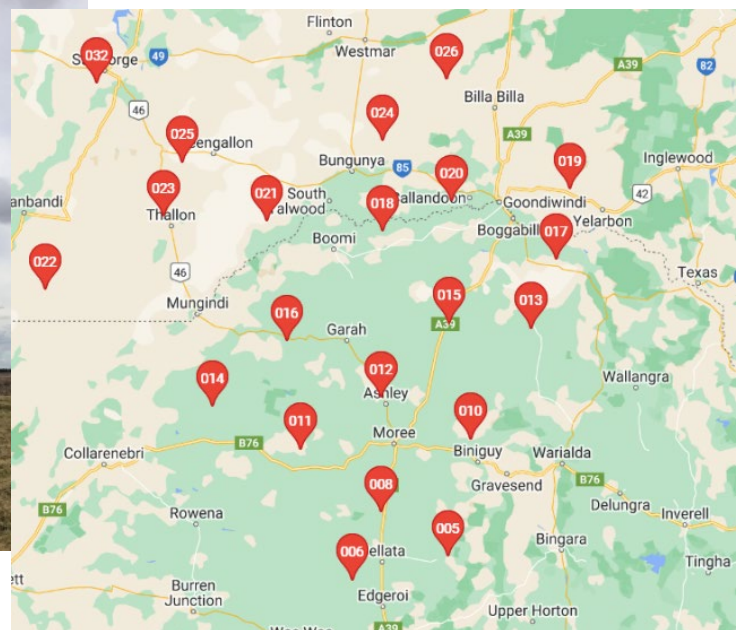
What you need to know (taken from [CottonInfo Drift Update and Resources Dec 2022](#)):

- Map your crops on SataCrop <https://satacrop.com.au>
- Notify your neighbours when spraying
- Follow the 5 commandments according to SOS (Stop Off Target Spraying) and [Keep the spray on the weeds](#)
- Use the [WAND](#) system to check for hazardous inversions
- Support your local SOS (Stop Off-target Spraying) Group
- What's in the pipeline – current research.



WAND SYSTEM

WAND (Weather and Networked Data) is a new technology that provides real time weather data about the presence or absence of hazardous temperature inversions. This will take the guess work out of when you can and can't spray and potentially open more spraying hours with greater certainty. 100 inversion towers (10 m high, Profiling Automatic Weathers Stations (PAWS)) are currently being installed across the eastern Australian grain and cotton regions. The data is provided by the WAND app to your phone, iPad or desktop. If a hazardous inversion is present, you cannot spray. However, if a hazardous inversion is absent, you can consider spraying so long as and all other label recommendations are being met, i.e., wind speed, nozzles, application speed, boom height etc.



Moree Default

As of 18/12/2022 18:50

All label requirements must be met including wind speed during periods of application.

Hazardous Inversion	? Absent
NowCast (until 20:50)	? Present
Inversion (Vert Temp Diff)	? -0.3 °C
Wind Speed (2m)	? 8 km/h SSE
Max Wind Gust (2m)	? 13 km/h
Wind Speed (10m)	? 12 km/h SE
Delta T	? 10.0 °C
Temperature	? 29 °C
Solar Radiation	? 64 W/m2
Rainfall from 9 am	? 0 mm
Rainfall 24 hrs to 9 am	? 0 mm

A short video about the WAND system is available [here](#)

WAND is available to all farmers and spray contractors for free. To access the WAND app, head to [Wand - Log in](#).

GRDC recently held a very good **webinar**: GRDC Grains Research Update, online – The new inversion tower network and reducing spray drift risk. The recording is available [here](#). The WAND system presentation by Gordon Cummings starts at 33 minutes.

What the research found?

Graeme Tepper's GRDC and CRDC funded research over the past 10 years has found the importance of measuring vertical wind turbulence as opposed to vertical temperature differences.

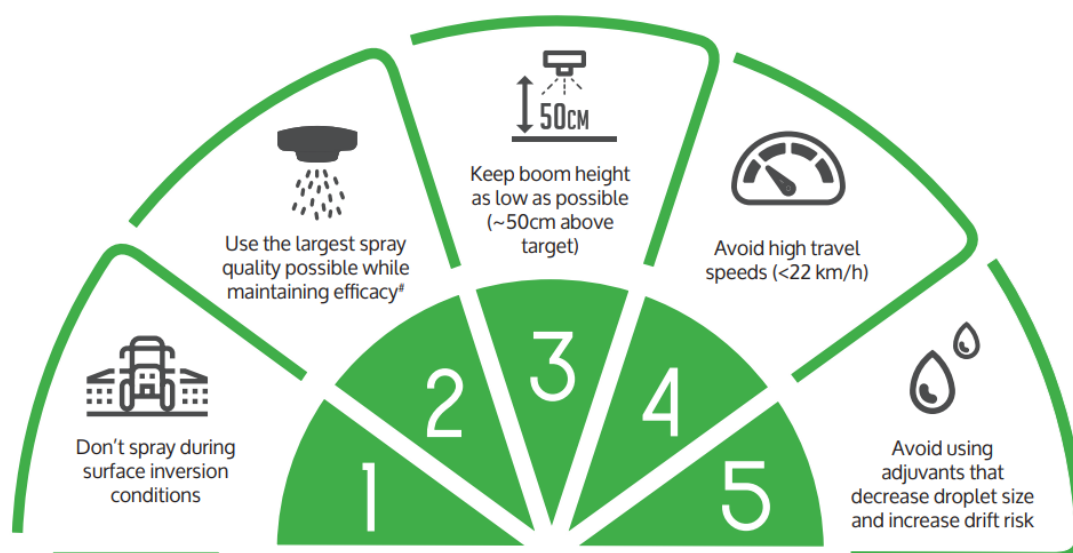
- Hazardous inversions occur when the atmosphere is strongly stable, and the intensity of turbulence is so weak that drift is not dispersed vertically.
- Recognised monitoring systems have sensors to measure the intensity of vertical turbulence.

Further information on the research:

- [GRDC Hazardous Inversion Fact Sheet](#)
- [GRDC Spray Drift Hazard warning system](#)

The WAND system only detects hazardous inversions you still need to follow the 5 commandments during all spray operations.

Five commandments according to SOS



Observe label directions for minimum and maximum droplet size. Water rates may need to be modified with increased droplet sizes

DRIFT PREVENTION – What’s in the pipeline

The **Maverick Spray Advisory** is being trialled on four trial sites in NSW, currently as a Proof-of-Concept (PoC) as part of a BRII grant with CRDC as a stakeholder.

Maverick is due to be launched commercially by mid-2023 as an advanced app within LX’s INCYT platform. We are working to offer a level of basic functionality to producers at minimal cost.

Important features of the full Maverick system include:

- In-cab view of the status of key environmental and machine variables that influence spray drift
- Dynamic forecasts and alerts when variables exceed pre-set limits (e.g., wind speed and direction)
- Automated mandatory record keeping and reporting (on an opt-in basis)
- Micro-content (e.g., short videos) - readily accessible, communicating best spray application practice
- Community networking functionality

For further information : <https://lx-group.com.au/lx-winners-of-brii-2021-grant-agricultural-spray-advisory/#Introduction-to-the-challenge>



SwarmFarm aims to reduce spray drift by eliminating the possibility of off label spray application through autonomy. This can be achieved by enabling robots to autonomously carry out pesticide applications that are compliant with label parameters.

To reduce spray applications through autonomy SwarmFarms are developing:

- Software to pull weather observations and forecasts from a variety of mobile and stationary weather sources including inversion towers.
- Decision making software that can machine read pesticide labels via a QR code and stop/ start robot spray operation depending on weather conditions and proximity of sensitive areas downwind of the spray application.
- A dock and refill system to allow robots to refill products autonomously so they can continue working without human intervention, to achieve 100% of the available, safe



spray window.

- Low power mode software to put robots into a deep sleep to save power and reduce emissions during times where spray conditions are not favourable
- A path replanning system to allow the robot to move to an alternative location if weather changes cause sensitive areas to be located downwind of the application.
- Cloud based record keeping of weather and spray compliant data.

Dates for the diary

18-19/01/23	AWM Field days Gwydir (18 th 3:30pm Murrumbidgee, 19 th 7:30am Ashley)
7-8/02/23	Weed Smart Week Dalby
16/02/23	IREC Field Day, Griffith
21/02/23	Gwydir Valley Field Day – Keytah
28/02 – 01/03/23	GRDC Grains Research Update Goondiwindi https://grdc.com.au/events/list?etype=grains-research-update
01/03/23	CSD Field Day – Namoi
08/03/23	Macintyre Field Day
15/03/23	Macquarie Grower of the year field day - Quigleys
22-26 /05/23	Northern Australia Food Futures Conference, Darwin, NT
5-7/09/23	AACS Cotton Research Conference, Toowoomba, Qld

Regards

Janelle

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