

Optical Spot Spray Technology (OSST)

The ultimate weapon against herbicide resistance



- Resistance management tool for problem and hard to kill weeds.
- Precision application technology saving time and money whilst reducing overall herbicide usage.

Optical spot spray technology registrations for herbicides

With the adoption of optical spot spray technology (OSST) on many farms across Australia, Nufarm have added a new registration to many of its knockdown and fallow products to ensure growers get the best out of this technology.



Registered for application with OSST

Unique legally registered products



OSST key points

- OSST can help reduce herbicide application in fallow applications by directly targeting weeds
- OSST is optimal for use in paddocks where weed cover is up to 30%* and where spot or patch spraying to target difficult to control weeds such as fleabane, milkthistle and barnyard grass
- OSST allows the cost-effective use of alternate mode of action chemistry in broadacre fallow situations
- In some cases OSST allows growers to use higher rates to target weeds to optimise control*



* Note that some label or permit uses specify a different maximum weed cover percentage or application rate. Always refer to the label or permit for the product prior to use.

How OSST works

OSST, such as WEED-IT or WeedSeeker®, uses sensors mounted on spray equipment to detect live plant matter and directly spray the weed, rather than spraying an entire paddock. This can significantly reduce herbicide application in fallow or knockdown situations.

Through extensive R&D collaboration between Nufarm, Crop Optics, Croplands and Bill Gordon Consulting, clear guidelines have been established to ensure optimal weed control.

OSST has a great fit for spot or patch spraying to target difficult to control weeds such as fleabane, milkthistle and barnyard grass, allowing higher rates to be used*. However, as with any effective weed control, it is still critical to target young, actively growing weeds.

It is also important to take every opportunity to mix different groups of herbicides together to suit the weed spectrum in your paddock and rotate as much as possible between groups to effectively manage resistance.

- WEED-IT sprays on average 5 to 20% of the paddock depending on weed populations.
- WEED-IT's near infrared technology only detects the chlorophyll present in living plants sending a quick response to the nozzles which release the spray onto the weed.
- WEED-IT is not affected by changes in background conditions because it is only measuring active chlorophyll. For the operator this means even better targeting of small grasses.

Herbicide application with OSST

When using registered products in conjunction with OSST, sprayers should be calibrated to spray the equivalent of 100L/ha water volume.

The registration is designed to control weed cover between 0-30%. If the percentage of weed cover exceeds 30%, growers should use the registered boom spray rates.

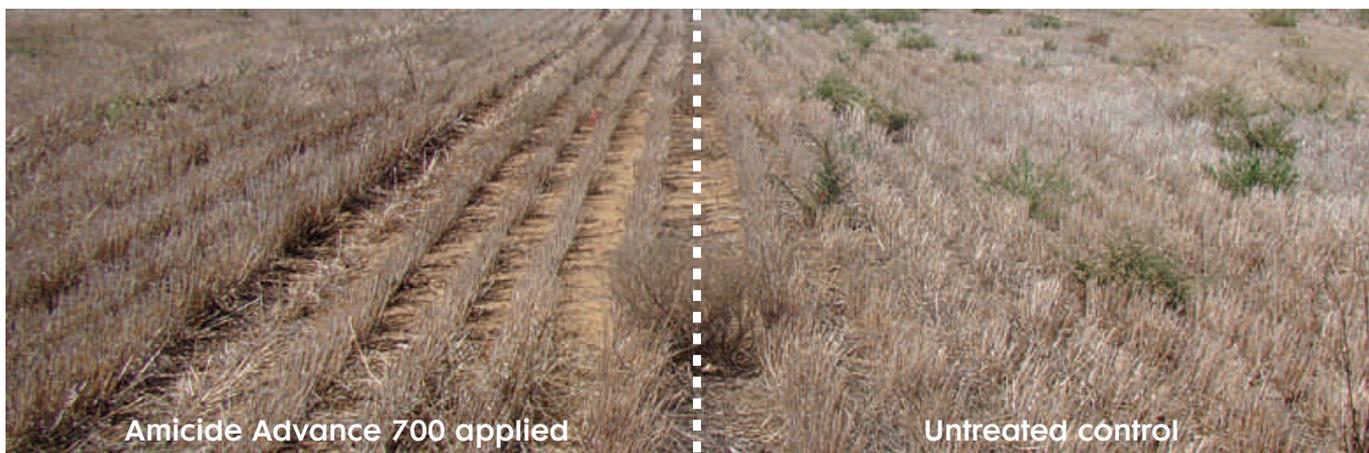


Figure 1: Amicide Advance 700 applied (left) through OSST at 4L/100L on fleabane, 60 days after application. Untreated control (right). Source: Frank Taylor, Nufarm 2013

XC Spot Fan nozzle for WEED-IT

Exclusive to Croplands, this low drift nozzle option has been designed specifically for use with WEED-IT Optical Spot Sprayers and is aimed at situations where drift reduction is paramount.

Producing an EXTREMELY COARSE (XC) spray quality, the Agrotop Spot Fan nozzle (part # TDSF-4003) is a 40 degree flat fan, #03.



TDSF	2 Bar	3 Bar	4 Bar
TDSF-4003	XC	XC	XC

* Note that some label or permit uses specify a different maximum weed cover percentage or application rate. Always refer to the label or permit for the product prior to use.

Herbicide application with OSST

The use of Collide 700 at registered use rates for these herbicide applications is recommended.

Product	Weeds targeted with OSST	Rates	Comments
Alliance 250g/L amitrole 125g/L paraquat	Fleabane, yellow vine (caltrop), barnyard grass, bladder ketmia, sowthistle, turnip weed	4–10L/100L	Rates and comments vary between weed species. Check the product label for full rates and comments.
Amicide Advance 700* 700g/L 2,4-D	Fleabane, sowthistle, yellow vine (caltrop)	4.8L/100L	Apply to rosette to flowering plants. Use higher rate on late flowering/mature plants or plants under moisture stress.
Archer 750 Dual Salt Liquid Herbicide 750g/L clopyralid	Capeweed, numerous thistles, Russian knapweed, lucerne, sub clover, vetch, volunteer chickpea, volunteer faba bean.	100–200mL/100L	Apply to rosette to flowering plants. Use higher rate on late flowering/mature plants or plants under moisture stress. Check plant back windows before use.
Amitrole T 250g/L amitrole 220g/L ammonium thiocyanate	Fleabane, sowthistle, yellow vine	5–8L/100L (fleabane) 5–10L/100L (sowthistle, yellow vine)	Apply to rosette to flowering plants. Use higher rate on late flowering/mature plants or plants under moisture stress. Check plant back windows before use.
Biffo 200g/L glufosinate-ammonium	Awnless barnyard grass, Australian bindweed, bladder ketmia, caltrop, flaxleaf fleabane, wild turnip	10L/100L	Apply to actively growing weeds. Good coverage is essential. Best results are achieved when applied under warm humid conditions (temperature below 33°C with a relative humidity above 50%).
Comet 400 400g/L fluroxypyr	Fleabane, sowthistle, yellow vine	1–3L/100L	Rates and comments vary between weed species. Check the product label for full rates and comments.
	Cotton (15–30 nodes)	1L/100L followed by 1L/100L, or 1L/100L followed by Shirquat at 2L/100L or 1L + 1L Amicide Advance 700/100L	The sequential application interval should be 7–14 days. For a single pass operation apply Comet + Amicide Advance 700. Ensure sufficient leaf regrowth has occurred on the ratoon cotton to maximise chemical uptake.
Crucial Advanced Technology Herbicide 600g/L glyphosate	Australian bindweed, barnyard grass, bladder ketmia, sowthistle, turnip weed, yellow vine (caltrop)	2.75–5.5L/100L	Apply to rosette to flowering plants. Use higher rate on late flowering/mature plants. Australian bindweed: Suppression only at lower rates. Use higher rates on larger mature plants.
Shirquat 250 250g/L paraquat	Australian bindweed, barnyard grass, bladder ketmia, cotton, fleabane, sowthistle, turnip weed, yellow vine	3–9L/100L 9L/100L (Australian bindweed)	Rates and comments vary between weed species. Check the product label for full rates and comments.
Trooper 75-D* 300g/L 2,4-D 75g/L picloram	Fleabane, sowthistle, yellow vine	1–2L/100L (yellow vine) 2L/100L (fleabane) 2–4L/100L (sowthistle)	Apply to rosette to flowering plants. Use higher rate on late flowering/mature plants or plants under moisture stress. Check plant back windows before use.
Weedmaster DST 470g/L Dual Salt Technology® Glyphosate	Australian bindweed, barnyard grass, bladder ketmia, fleabane, sowthistle, turnip weed, yellow vine	3.5L/100L (sowthistle, yellow vine, turnip weed) 3.5–7L/100L (Australian bindweed, barnyard grass)	Apply to rosette to flowering plants. Use higher rate on late flowering/ mature plants. Australian bindweed: Suppression only at lower rates. Use higher rates on larger mature plants.

Figure 1: Rates and critical comments when applying Nufarm herbicides with OSST.

* Due to APVMA interim chemical review label changes on 2,4-D products in 2018, this use pattern is currently covered under a permit as the minimum boom height requirement cannot be met with OSST. Please refer to this permit as additional restrictions are in place such as a maximum 10% weed cover when a COARSE droplet size is used or maximum 15% weed cover when a VERY COARSE or EXTREMELY COARSE* droplet size is used. <http://permits.apvma.gov.au/PER87570.PDF>

† The XC Spot Fan nozzle detailed above produces an EXTREMELY COARSE droplet spectrum and is therefore suitable for adoption under permit PER87570.

For more information on OSST or the XC Spot Fan nozzle, visit croplands.com.au



The information and recommendations set out in this brochure are no substitute for professional or expert advice and are based on tests and data believed to be reliable at the time of publication. Results may vary, as the use and application of the products is beyond our control and may be subject to climatic, geographical or biological variables, and/or developed resistance. To the maximum extent permitted by law, Nufarm Australia Limited disclaims all warranties of any kind, whether express or implied, including but not limited to any warranty that the information is up-to-date, complete, true, legally compliant, accurate, non-misleading or suitable.

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Please refer to respective product labels for registered uses in specific crops.

For more information on WEED-IT, contact your local Nufarm Territory Manager

