

## Dead Sure<sup>®</sup>/TeeJet DRS As a fallow herbicide adjuvant.

Dead Sure is both a spray drift risk reducing adjuvant for fallow herbicides and an adjuvant to improve the efficacy of the fallow herbicides when applied with the AITTJ60, TTJ60, TTI or AIXR TeeJet nozzles. In this Tech Note we detail the effect of the Dead Sure/TeeJet Drift Reduction System (DRS) as an adjuvant.

### How Dead Sure works as an adjuvant

The complex formulation of Dead Sure enables several key modes-of-action.

Firstly, glyphosate is most active when not bound up by the hard water cations, Mg<sup>2+</sup> and Ca<sup>2+</sup>. Dead Sure's patented formulation contains components that reduce salting out of the glyphosate active.

Secondly, because less active is lost "off-target", there is more available to act against the weed.

Thirdly, large droplets strike leaves with a lot of momentum and they are more likely than small droplets to bounce off the leaf, wasting active. Dead Sure's 'anti-bounce' carbohydrate polymer component improves droplet retention of large droplets on the target weed by absorbing the viscoelastic energy of the droplet that in Dead Sure's absence acts to recoil the impacting droplet and bounce it back off the leaf in the first few milliseconds of contact.

Fourthly, once the large droplet is bound to the leaf, Dead Sure's surfactant components act to maximise the coverage from that droplet by spreading it far and wide.

And finally, the oil components of Dead Sure soften the waxy cuticle enabling more fluid interaction with the droplet from the surface.

### What situations to use the Dead Sure/TeeJet DRS in:

In ground based boom spraying for fallow weed control with glyphosate and/or phenoxy herbicide tank mixtures.

### Why use the Dead Sure/TeeJet DRS?

To reduce risk of off-target spraying and enhance the rate of weed kill and the final weed kill performance of the herbicides.

### How to use the Dead Sure/TeeJet DRS as an adjuvant of glyphosate and 2,4-D tank mixes:

#### Before the season:

From the TeeJet nozzle chart, select the correct size AIXR, AITTJ60, TTJ60 or TTI nozzle for your selected volume application rate and optimal tractor speed. Ensure your spray rig's specified operating pressure range covers the selected nozzle's recommended operating pressure that delivers at least coarse spray quality. Fill out your Dead Sure/TeeJet nozzle order form online at [www.cpsodeadsure.com](http://www.cpsodeadsure.com) to receive your complementary nozzles.

#### At spray time:

Half fill the spray tank with water and commence agitation. When your primary aim is to improve the performance of fallow herbicides, use Dead Sure at the rate of 250-375mL/100L of water. Add the required amount of Dead Sure and, recirculate for five minutes. At this point calibrate the boom sprayer's flow rate to adjust for effect of Dead Sure on tank mix viscosity (usually < 5% adjustment is needed). Then add the recommended quantity of herbicide. Continue agitation while topping up the tank to the correct volume and during spraying.

Dead Sure acts to reduce fine droplets formed by increasing the viscosity of the tank mix. This may reduce fan angle so you may need to adjust boom height to maintain double overlap at target height when using minimum anticipated operating pressure. Normally no adjustment to height is necessary.

### Trial performances of the Dead Sure/TeeJet DRS as a fallow herbicide adjuvant

The Dead Sure/TeeJet DRS consistently improves the performance of glyphosate and glyphosate/2,4-D mixtures, particularly at marginal rates and conditions. Summaries of the field trial results are presented in Tables 1-4.

Table 1: Glyphosate weed kill enhancement by the Dead Sure/TeeJet DRS in a series of small plot field trials in the Namoi region of NSW, 29 DAT.

Nozzle	Weed	Weed Stage	Glyphosate	Glyphosate + Dead Sure
AIXR 11002	Burr Medic ( <i>Medicago polymorpha</i> )	(2-6 leaf)	51.7	68.3
	Capeweed ( <i>Arctotheca calendula</i> )	(2-6 leaf)	78.3	86.7
	Saffron Thistle ( <i>Carthamus lanatus</i> )	(2-4 leaf)	40	48.3
TTI 11002	Burr Medic ( <i>Medicago polymorpha</i> )	(2-6 leaf)	58.3	75
	Capeweed ( <i>Arctotheca calendula</i> )	(2-6 leaf)	71.7	90!
	Saffron Thistle ( <i>Carthamus lanatus</i> )	(2-4 leaf)	40	61.7!

Table 2: Glyphosate weed kill enhancement by the Dead Sure/TeeJet DRS in a series of small plot field trials in the Riverina region of NSW, 15 DAT.

Nozzle	Weed	Weed Stage	Glyphosate	Glyphosate + Dead Sure
AIXR 11002	Annual Ryegrass ( <i>Lolium rigidum</i> )	Early tillering	70	86.7!
	Dense Flowered Fumitory	(4-6 leaf)	80	83.3
	Shepherd's Purse ( <i>Capsella bursa-pastoris</i> )	(4-6 leaf)	73	80!
TTI 11002	Annual Ryegrass ( <i>Lolium rigidum</i> )	Early tillering	76.7	83.3!
	Dense Flowered Fumitory	(4-6 leaf)	76.7	86.7!
	Shepherd's Purse ( <i>Capsella bursa-pastoris</i> )	(4-6 leaf)	73.3	83.3!

Table 3: Glyphosate/2, 4-D weed kill enhancement by the Dead Sure/TeeJet DRS in a series of small plot trials in the Riverina region of NSW, 15 DAT.

Nozzle	Weed	Weed Stage	Glyphosate + Surpass 475	Glyphosate + Surpass 475 + Dead Sure
AIXR 11002	Annual Ryegrass ( <i>Lolium rigidum</i> )	Early tillering	70	90!
	Dense Flowered Fumitory	(4-6 leaf)	80	90!
	Shepherd's Purse ( <i>Capsella bursa-pastoris</i> )	(4-6 leaf)	76.7	80
TTI 11002	Annual Ryegrass ( <i>Lolium rigidum</i> )	Early tillering	80	86.7!
	Dense Flowered Fumitory	(4-6 leaf)	80	90!
	Shepherd's Purse ( <i>Capsella bursa-pastoris</i> )	(4-6 leaf)	80	86.7!

Notes:

Glyphosate = glyphosate CT applied at 800mL/ha, except fleabane and wild oats 1000mL/ha.

Dead Sure used at 0.25% v/v

water volume = 50L/ha

! indicates significant enhancement.



Table 4: Glyphosate/2, 4-D weed kill enhancement by the Dead Sure/TeeJet DRS in a series of small plot trials in the Namoi region of NSW, 15 DAT.

Nozzle	Weed	Weed Stage	Glyphosate + Surpass 475	Glyphosate + Surpass 475 + Dead Sure
AITTJ60 11002	Awnless Barnyard Grass ( <i>Echinochloa colona</i> )	(Emergence to tillering)	49.7	69.7+
	Pigweed ( <i>Portulaca oleracca</i> )	(Emergence to 10cm rosette)	79.9	94.9+
	Windmill Grass ( <i>Chloris truncata</i> )	(Emergence to tillering)	59.9	78.2+
AIXR 11002	Awnless Barnyard Grass ( <i>Echinochloa colona</i> )	(Emergence to tillering)	81.4	83+
	Pigweed ( <i>Portulaca oleracca</i> )	(Emergence to 10cm rosette)	79.9	93.2+
	Windmill Grass ( <i>Chloris truncata</i> )	(Emergence to tillering)	83.2	89.9+
TTI 11002	Burr Medic ( <i>Medicago polymorpha</i> )	(2-6 leaf)	45	61.7
	Capeweed ( <i>Arctotheca calendula</i> )	(2-6 leaf)	61.7	73.3
	Flaxleaf Fleabane ( <i>Conyza bonariensis</i> )	(4-14 leaf, up to 15cm rosette)	45	61.7
	Saffron Thistle ( <i>Carthamus lanatus</i> )	(2-4 leaf)	33.3	36.7
	Wild Oats ( <i>Avena fatua</i> )	(Tillering to jointing)	45	61.7

Notes for tables 1-4:

Glyphosate = glyphosate CT applied at 800mL/ha, except fleabane and wild oats 1000mL/ha.

Surpass 475 used at 415mL/ha

Dead Sure used at 0.25% v/v except for + (0.5%)

water volume = 50L/ha

! indicates significant enhancement.