

Dead Sure[®] Performance with Ammonium Sulphate.

Ammonium Sulphate (AS) is often mixed with glyphosate to condition hard water and to activate the weed for better uptake. This trial work was undertaken to quantify any additive or deleterious effects of combining ammonium sulphate and Dead Sure in the same tank mix with Glyphosate CT.

Enhanced rate of Grass Weed control in Fallow

Figures 1 and 2 summarise the weed control results of a Darling Downs field trial in which several grass weed species were present during the trial, including Awnless Barnyard Grass (Fig 1) and Cow Vine (Fig 2).

The rate of grass control was enhanced significantly by all additives through all nozzles 7DAT¹ (Figure 1). A small additive effect between AS and Dead Sure was observed later in the trial.

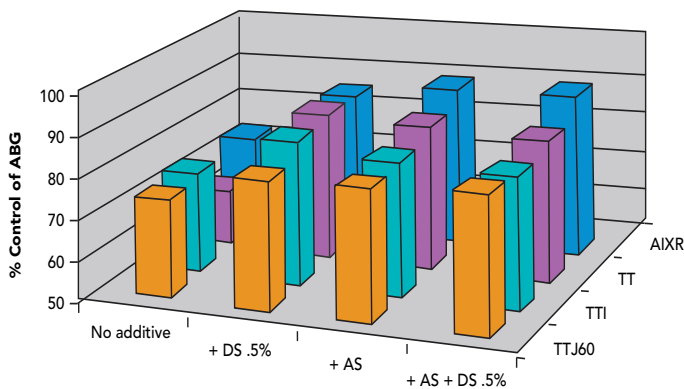
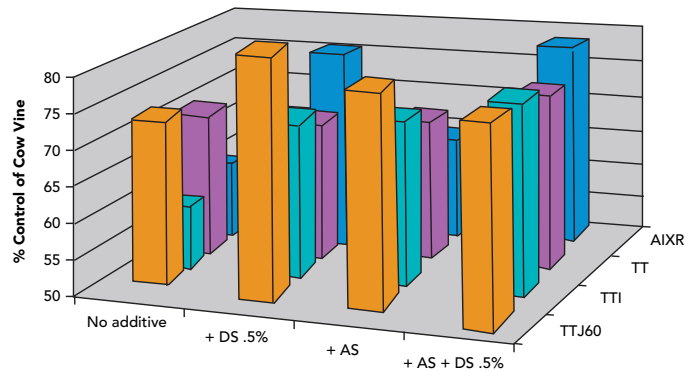


FIGURE 1. The percentage control of Awnless Barnyard grass 7DAT with Glyphosate CT and various additive combinations through low drift TeeJet nozzles.

¹ All additive treatments went on to give 100% control by 34DAT.



Glyphosate CT used at 1L/ha
AS used at 2% v/v
Dead Sure at 0.5% v/v
Spray volume = 70L/ha
Water hardness ~ 100ppm

TT 11002 @ 300 kPa
TTI 11002 @ 500 kPa
AXIR 11002 @ 500 kPa
TTJ60 11002 @ 300 kPa

FIGURE 2. The percentage control of Cow Vine 34DAT by Glyphosate CT with various additive combinations through low drift TeeJet nozzles.

Enhanced Broadleaf weed control

The final level of Cow Vine control was also enhanced by all additives through all nozzles (Figure 2). There was a trend towards an additive effect between AS and Dead Sure. Dead Sure gave significantly improved control of Cow Vine through the AIXR nozzle while AS did not.

% Driftable fines with various glyphosate formulations

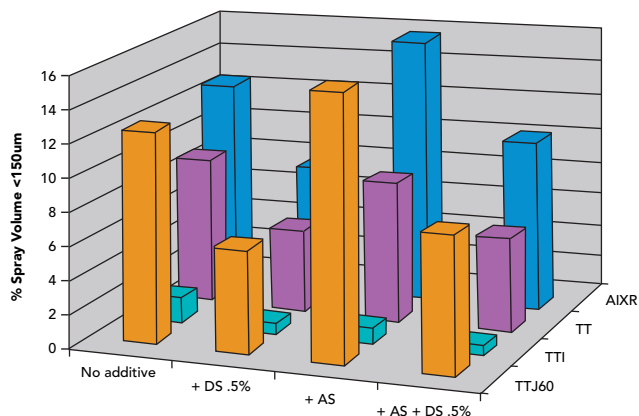
Wind tunnel testing at CPAS, UQ Gatton, showed that ammonium sulphate at 2% v/v increased driftable fine droplet production through the TTJ60 and AIXR nozzles with little effect through the TT and TTI, while Dead Sure decreased driftable fines by about half through all nozzles tested. When tank mixed, driftable fine production was intermediate between the two additives used alone (Figure 3).

When the droplet spectrum data was applied to the equation used in AgDRIFT to calculate relative drift potential, the effect of ammonium sulphate became clearer (Figure 4). While still managing to reduce the relative drift potential of the Glyphosate CT, Dead Sure's effect was reduced by AS through the AIXR, TTJ and TT nozzles.

Conclusion

In the conditions used in these trials there was no additional benefit in adding ammonium sulphate to the tank mixture. Ammonium Sulphate at 2% v/v interfered with Dead Sure's reduction of driftable fines.

FIGURE 3. The percentage of driftable Glyphosate CT fines with various additive combinations through low drift TeeJet nozzles.



Glyphosate CT used at 1L/ha
 AS used at 2% v/v
 Dead Sure at 0.5% v/v
 Spray volume = 70L/ha
 Water hardness ~ 100ppm

TT 11002 @ 300 kPa
 TTI 11002 @ 500 kPa
 AIXR 11002 @ 500 kPa
 TTJ60 11002 @ 300 kPa

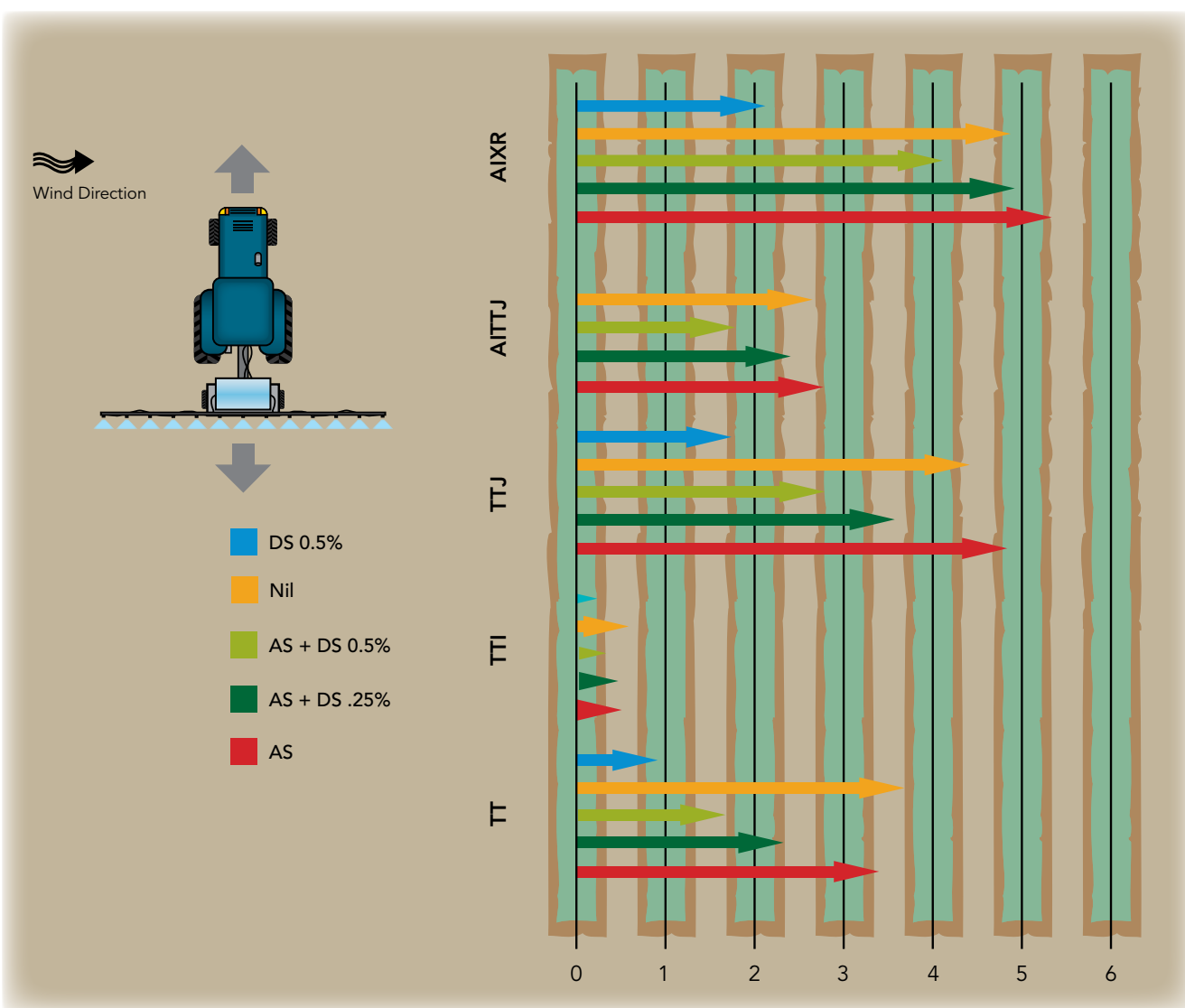


FIGURE 4. The effect of Ammonium Sulphate (AS) on the ability of Dead Sure® to reduce calculated relative drift potential (AgDRIFT) through various low drift nozzles.

Dead Sure®
 DRIFT MITIGATING ADJUVANT

TeeJet®
 TECHNOLOGIES

PRECISION SPRAY OILS
 CALTEX