KNOCKDOWN CONTROL OF DIFFICULT WEEDS FLEABANE, MELONS & GRASSES

SACOA set out to prove with actual infield efficacy trials the best herbicide and adjuvant combinations for controlling difficult weeds.

A number of independent replicated field trials have now been completed across NNSW, Southern Queensland & Western Australia.

The results from these have provided some interesting takes on traditional herbicide mixtures and proved the role of different adjuvant types – emulsified mineral oils, esterified seed oils, non-ionic surfactants and soyal phospholipids - in spreading and penetrating actives on leaf surfaces.

1. What are the best adjuvant options for glyphosate mixtures?
2. How are GRPA's affected by different types of adjuvants and which is the best option?
3. How effective is the double knock?
4. Which adjuvants work best with paraquat?
5. **Are adjuvants with water conditioning properties of any benefit?**

FLEABANE CONTROL - KEY FINDINGS

- In glyphosate tank mixes, high emulsifier loaded mineral oils – such as *ENHANCE®* or *ANTIEVAP®* at 1% - provide a balance between leaf surface coverage and penetration, enabling effective coverage and translocation, and proved superior to other types
- Glyphosate activity can be reduced by the presence of Ca and Mg ions in hard water – the addition of Ammonium Sulphate will alleviate this.
- A double knock within 7-10 days of the initial application can double the efficacy of the initial treatment and prevent seed set.
- On difficult to control, stressed weeds, a penetrant type mineral oil such as *ANTIEVAP®* proved the most effective mix partner with paraquat in the double knock, being superior to non-ionic surfactants.

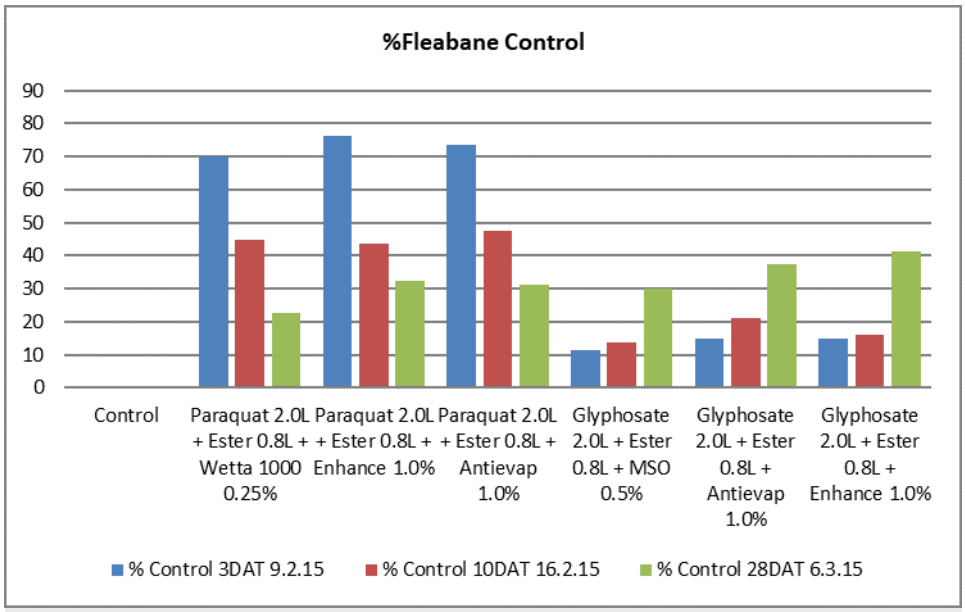

Chart 1: Control of Fleabane with Paraquat + Ester mixtures and Glyphosate + Ester mixtures with various adjuvants. *(Source: T Boyes AgVivo Agronomy, York Feb 15)*

MELON CONTROL - KEY FINDINGS

- The addition of glyphosate to triclopyr + ester mixes substantially improved control, particularly early brown out two weeks after application.
- Using a high emulsifier loaded mineral oil with spreading and droplet survival properties such as *ANTIEVAP®* or *ENHANCE®* proved most effective with triclopyr alone and glyphosate mixtures
- In mixed populations (melon + eragrostis) grass weed control was adversley impacted when using a MSO type adjuvant (see chart 3 & 4)

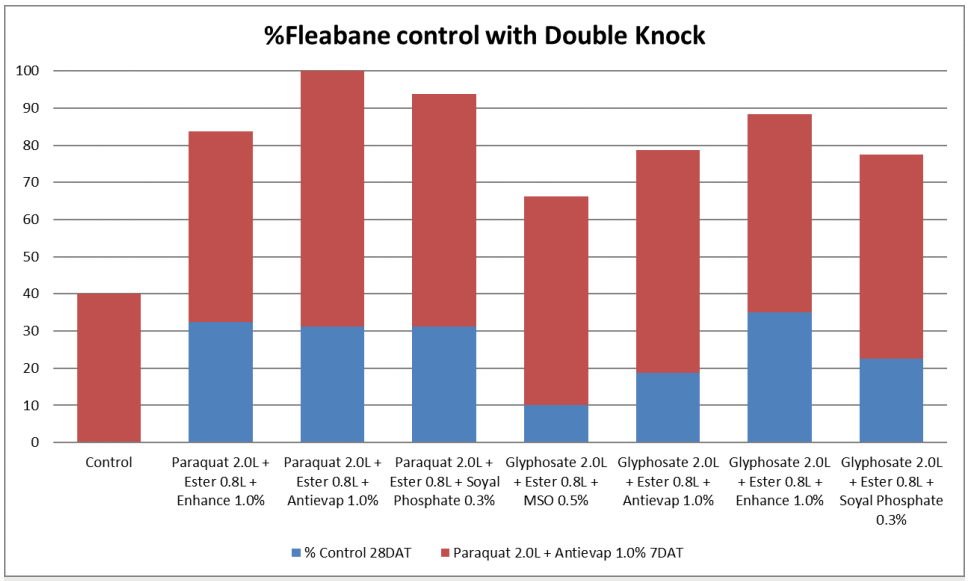

Chart 2: Control of Fleabane with Paraquat + Ester mixtures and Glyphosate + Ester mixtures with various adjuvants. *(Source: T Boyes AgVivo Agronomy, York Feb 15)*

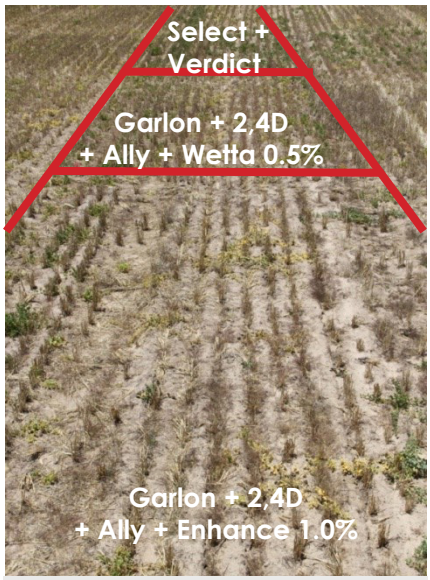

Figure 1: Melon Control - East Quairading December 2014

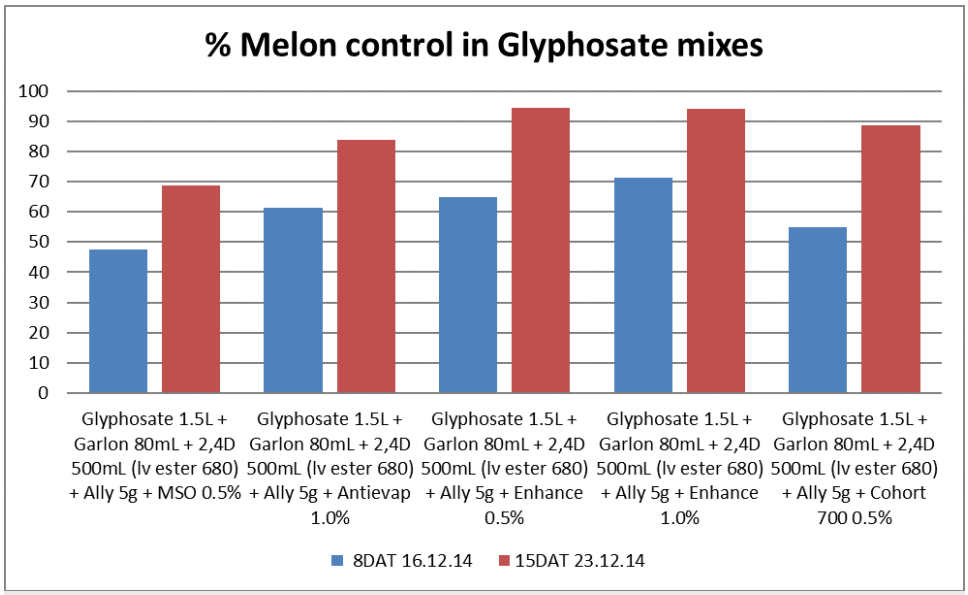

Chart 3: Melon Control with Glyphosate mixtures and various adjuvants *(Source: T Boyes AgVivo Agronomy, Quairading December 2014)*

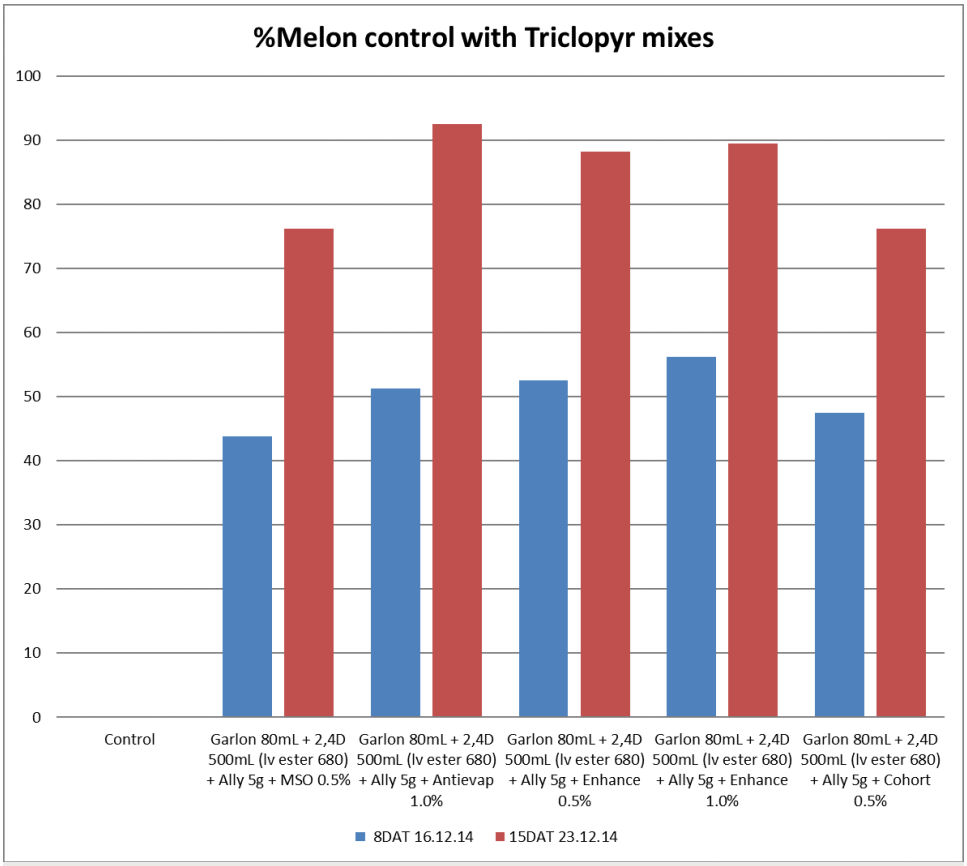

Chart 4: Melon Control with Triclopyr mixtures and various adjuvants *(Source: T Boyes AgVivo Agronomy, Quairading December 2014)*

Figure 2: Glyphosate 1.5L + Garlon 80ml + 2,4D 500ml (lv ester 680) + Ally 5g + Enhance 1.0%, 8DAT on 16 December 2014.

Figure 3: Glyphosate 1.5L + Garlon 80ml + 2,4D 500ml (lv ester 680) + Ally 5g + MSO 0.5%, 8DAT on 16 December 2014.

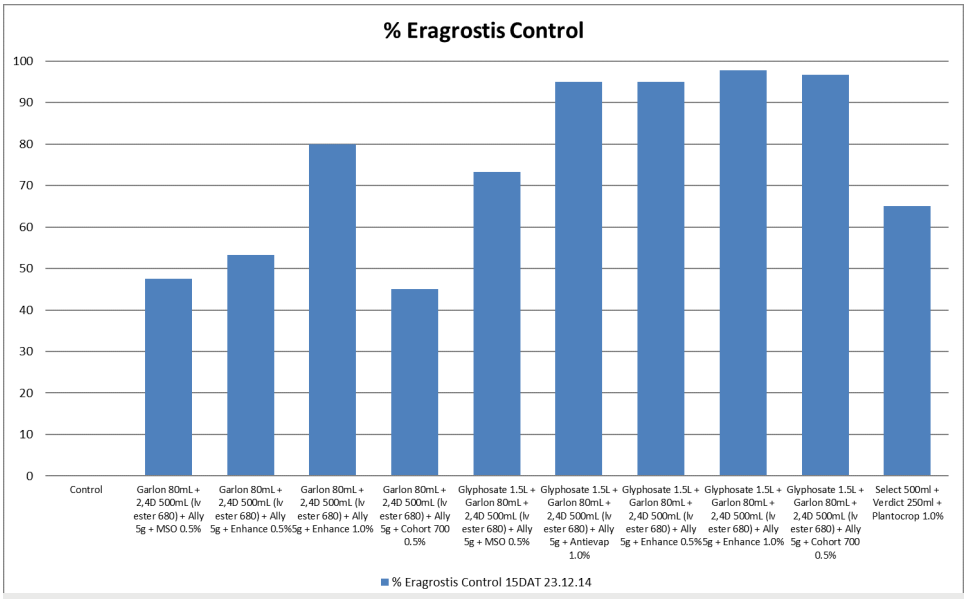

Chart 5: Eragrostis control with various common control mixtures and associated adjuvants. *(Source: T Boyes AgVivo Agronomy, Quairading December 2014)*

Figure 4: Untreated control, 8DAT on 16 December 2014.

TAKEAWAY MESSAGES

1. For the majority of difficult knockdown weed control situations which include glyphosate, a coarse emulsion mineral oil with droplet survival and penetrant properties such as *ANTIEVAP®* or high emulsifier loaded mineral oil with spreading properties such as *ENHANCE®*, provides the best balance of droplet survival, leaf surface coverage and penetration, resulting in more complete weed control.
2. In a paraquat double knock – under difficult conditions or on stressed weeds a penetrant type mineral oil such as *ANTIEVAP®* will improve the effectiveness of the double knock.
3. Soyal phospholid based products such as *COHORT® 700* were of benefit only in hard water situations in mixtures with Glyphosate.

REFERENCES

- T Boyes AgVivo Agronomy, York Feb 15
- T Boyes AgVivo Agronomy, Quairading Dec 2014

FIND OUT MORE

Further information is available at www.sacoa.com.au or by contacting SACOA on 08 9386 7666 or contact your local SACOA representative;

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