

EARLY POST ONE-PASS SOLUTIONS

Key Points

- Select the correct adjuvant based on mode of action of most important active.
- ENHANCE® was as safe as Uptake® on both cereals and canola.
- Weed control with herbicide mixtures containing ENHANCE® was equivalent to Uptake®.
- PLANTOCROP® proved equivalent to Hasten® on canola, with no difference in weed control.
- Alternative adjuvants provided no advantages but did cause mixing and nozzle blocking issues, particularly under cold conditions.
- Generally mineral oils, such as ENHANCE®, proved more efficacious on mixed populations of grass and broadleaves, whilst methylated seed oils, such as PLANTOCROP®, proved more efficacious on grass weed populations.

Correct application timing is critical to maximise the performance of most crop protection products, particularly for selective herbicides, preventative fungicides and foliar nutrients. Large programs and weather challenges often require the application of multiple products in a single pass, which can result in compromised product activity or crop safety.



Figure 1: An example of crop phytotoxicity caused by incorrect spraying procedure. (Source: SACOA)

Avoid crop damage by;

- Using correct mixing and application practice – right spray quality (usually means switching nozzle type from summer spraying), correct water volumes, avoid overlaps and ensuring boomspray is correctly calibrated.
- Ensuring thorough tank cleaning between differing actives/crops.
- Selecting the correct adjuvant based on mode of action of most important active.
- Being aware of crop/weed stresses, such as water logging/droughting/frosting/soil disease, which may slow growth resulting in more crop damage and/or reduced weed control.

2014 Trial Work

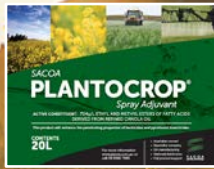
Throughout 2014 SACOA contracted a large number of independent field trials aimed at;

- Testing multiple component tank mixes including foliar nutrients, fungicides and tank mix compatibilisers to prove crop safety and provide agronomic one-pass solutions.
- Proving the crop safety and weed control performance of ENHANCE® and PLANTOCROP® in common herbicide mixtures.
- Evaluating the performance of a range of products in the market.

Products evaluated included;

Cereal Solutions

- Herbicides – Crusader®, Velocity®, Precept®, 2,4 D, MCPA, Monza®, Topik®, Axial®, Intervix®



- Fungicides – Tilt®
- Nutrients – Flexi N®, Stratosol® Copper
- Compatibilisers – Ammonium Sulphate (AMS), N-Flow®

Canola Solutions

- Herbicides – Atrazine, Clethodim, Quizalafop-Ethyl, Propyzamide, Intervix®
- Compatibilisers – AMS

Trial Outcomes

- Crop effects in cereals with multiple component tank mixes were generally transient and had limited impact on yield. Crusader® and multiple hormone-type herbicides with Flexi-N® mixes were least safe, but still caused only transient damage.
- Compatibilisers, such as AMS and N-Flow®, proved safe in post emergent situations.
- ENHANCE® was as safe as Uptake® on both cereals and canola.
- Weed control with herbicide mixtures containing ENHANCE® was equivalent to Uptake®.
- PLANTOCROP® proved equivalent to Hasten® on canola, with no difference in weed control.
- Alternative provided no advantages to the current standards, but did cause mixing and nozzle blocking issues particularly under cold conditions.
- Generally mineral oils, such as ENHANCE®, proved more efficacious on mixed populations of grass and broadleaves, whilst methylated seed oils, such as PLANTOCROP®, proved more efficacious on grass weed populations.

Trial Locations



For more information
www.sacoa.com.au or
 call 08 9386 7666

- ✓ Australian owned
- ✓ Specialist company
- ✓ QA manufacturing
- ✓ National distribution
- ✓ Full product support



Cereal Weed Control

A range of broadleaf and grass selective herbicides with mineral oil, methylated seed oil and soy lecithin adjuvants were evaluated in tank mixtures with liquid UAN, fungicide, compatibilisers and micro nutrients. Herbicides evaluated included Crusader®, Velocity®, Precept®, MCPA, 2,4D, Metribuzin, Intervix®, Axial®, Topik® and Monza®.

Results showed ENHANCE® proved equivalent to Uptake® in terms of crop safety, even in tank mixtures with liquid UAN, auxin-type herbicides and fungicides. PLANTOCROP® proved equivalent to other methylated seed oils in Monza®, Topik® and Axial® mixes. Crop phyto effects observed were generally transient with no impact on yield. The tank mix compatibiliser N-Flow® was found to be safe to apply in-crop.



Figure 2 : Cereal stage at application at Gnowangerup (GS 13) and Walkaway (GS 21-25) 18.6.14 (Source: SACOA)

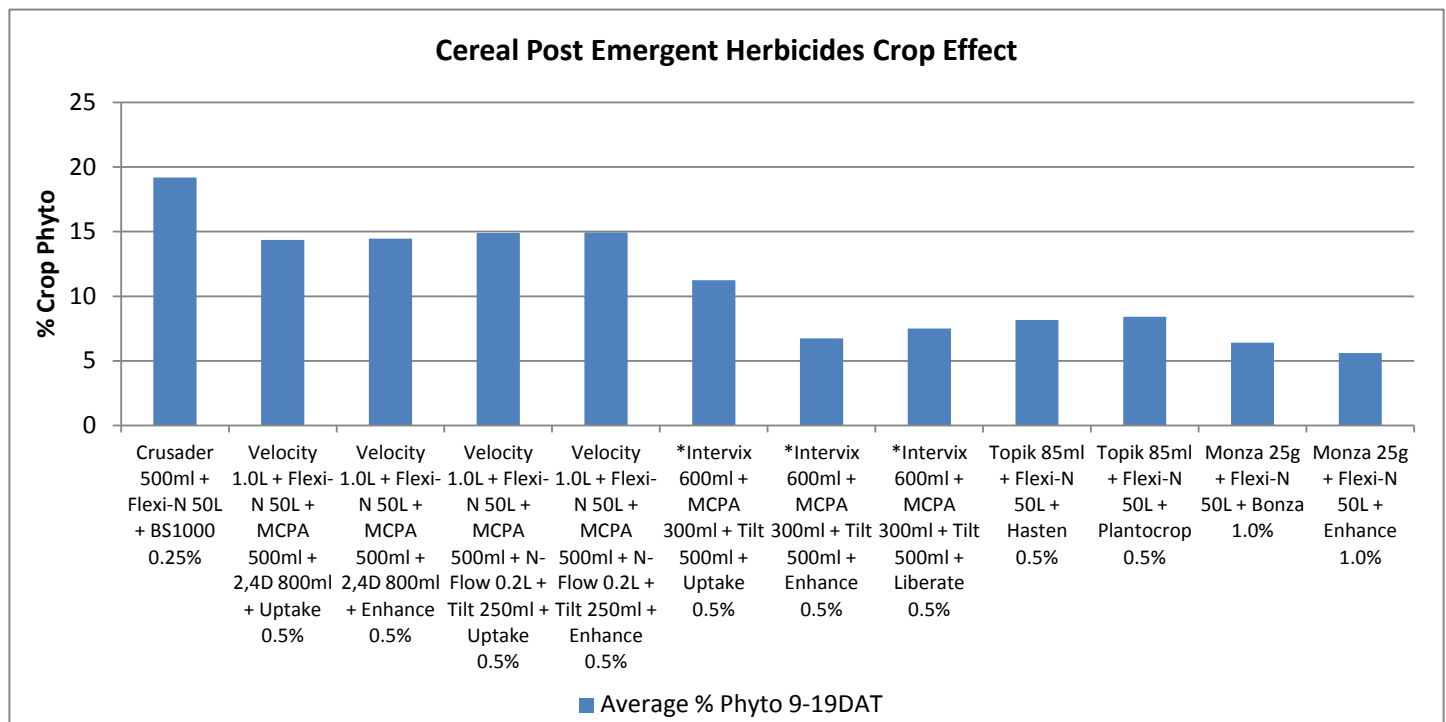


Chart 1: Crop effect of common cereal herbicide mixtures measured as biomass reduction and leaf discolouration relative to the untreated. Average of 7 sites – Walkaway, Moora, Yorkrakine, Quairading, Gnowangerup (BT Parkin) and Quambatook - 2 sites(Agrivision). *Intervix® treatments applied to Scope barley. July 2014.



Canola Weed Control

In this series of independently conducted canola trials across the Victorian Mallee, mid north of South Australia and Western Australia – a range of adjuvants were trialled in the triazine tolerant canola system in mixtures with atrazine, propyzamide, clethodim and quazilofop ethyl. The most efficacious treatments on annual ryegrass were the three-way mixes of atrazine +

clethodim + quazilofop ethyl which were also the highest yielding. Propyzamide caused a significant amount of crop damage when applied early post emergent.

Trials comparing the efficacy and crop safety of methylated seed oils found PLANTOCROP® to be equivalent to Hasten®, with no difference in crop safety, weed control or final yield.



Figure 3: Gnowangerup TT Canola Atrazine + Clethodim + Quazalifop-Ethyl + Hasten 11DAA 25/06/14. White necrotic spots indicate desiccation from rapid penetration with methylated seed oil. (Source: SACOA)

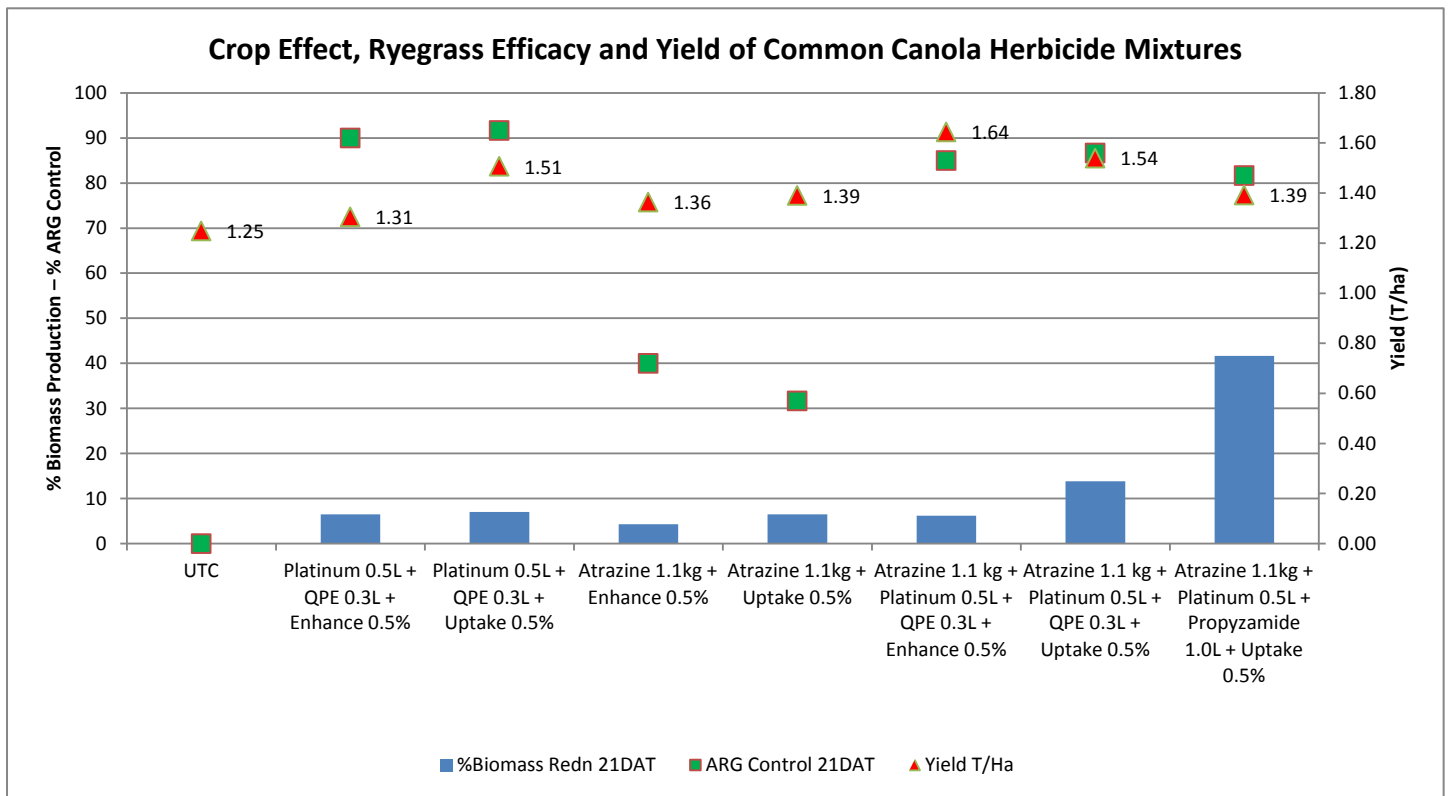


Chart 2: Crop effect, ryegrass efficacy and yield of common canola herbicide mixtures measured as biomass reduction and leaf discolouration relative to the untreated. Average of 4 sites – Gnowangerup (SACOA) Saddleworth (AW Vater), York (ADAMA) and Mallee (Agrivision). July 2014 – Yield LSD: 0.118 @95%

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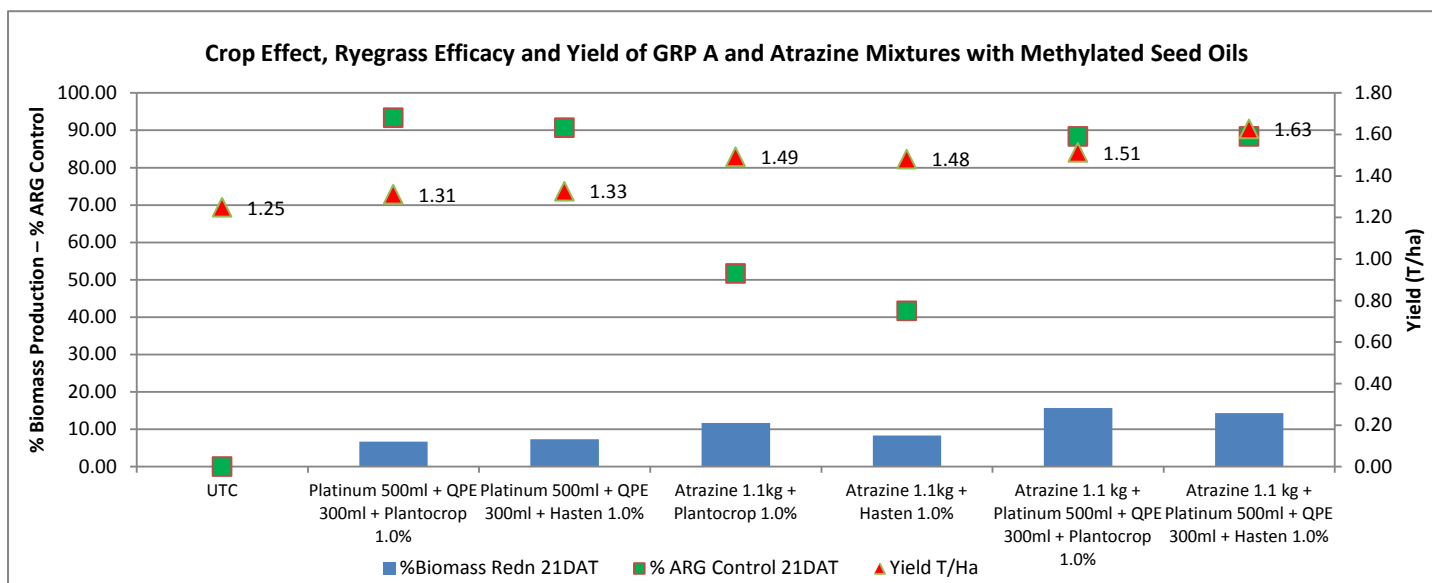


Chart 3: Crop effect, ryegrass efficacy and yield of GRP A and Atrazine mixtures with methylated seed oils.
Source: ADAMA/SACOA joint trial York WA. July 2014 – Yield LSD: 0.118 @95%

Future Work

SACOA are continuing to invest in research to provide agronomic solutions in broadacre cropping in 2015. Work currently underway includes;

- Targeting difficult fallow weeds.
- Improving the efficacy of pre-plant knockdown actives glyphosate and paraquat.
- Improving early crop emergence, nutrient uptake and vigour, particularly for dry seeding.
- Developing the next generation of post emergent adjuvants.
- Alternative sclerotinia control options in canola.
- Alternate MOA products for aphid control in canola
- Alternative disease control programs in pulses.
- Extending the lifespan of existing herbicide and fungicide mode of actions through improved efficacy.

References

Early post one-pass agronomy – B. Parkin July 2014 – Walkaway, Yorkkraine, Gnowangerup, Quairading - WA

Crop Safety and Efficacy of Herbicides in TT Canola – ADAMA/SACOA July 2014 – York WA

Crop Oil Adjuvant Trial – C. Davis – AW Vater August 2014 – Saddleworth SA

SACOA Adjuvant Trial – J. Brown – Agrivision Consultants March 2015 – Quambatook VIC

Find Out More

Further information is available at SACOA.com.au, on (08) 9386 7666 or by contacting your local SACOA representative;

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