

Disclaimer:

This document is based on the results from an individual trial and may contain experimental use patterns that are currently off-label. **This document does not provide any interpretation and should not be taken as an endorsement of any unregistered use pattern.**

Professional advice should be sought for specific recommendations to ensure access to the most up to date information and knowledge.

Any product referred to in this document must be used strictly as directed, and in accordance with all label or permit instructions. Always consult the label prior to use.

Alternatives to Paraquat in a Double Knock

Trial ID: **BD1812** Location: **Edgeroi** Trial Year: **2018**
 Investigator: **Branko Duric**

| | | |
|---|---|-------------------------------|
| Objective: | To evaluate alternative second knock options for broadleaf weed control | |
| Situation: | Fallow | |
| Application Code: | A | B |
| Application Date: | 23/05/2018 | 6/06/2018 |
| Application Timing: | Post-Emergent | 14 Days after Appln. A |
| Application Volume: | 100 L/ha | |
| Weed Stage: | 6 Leaf (~60% of Population) | |
| Weed Range: | 4 Leaf - 2 Side Shoots | |
| Weed population: | 3.1 /m² | |
| Keywords: | Common sowthistle, knockdown, fallow | |
| NB: Application A was 1.25L/ha Glyphosate 450 + 300ml/ha Amicide 625 + 1% Liase. Applied over entire trial area. | | |

| Pest Scientific Name | | | <i>Sonchus oleraceus</i> | | |
|-------------------------------|-----------------|---------------------|--------------------------|-----------------|-----------------|
| Pest Name | | | Common Sowthistle | | |
| Description | | | 14/06/2018 | Regrowing | Total Surviving |
| Assessment Date | | | BURNDOWN | 4/07/2018 | 4/07/2018 |
| Assessment Type | | | COUNT | COUNT | COUNT |
| Assessment Unit | | | % | /m ² | /m ² |
| Treatment-Evaluation Interval | | | 8 DAB | 28 DAB | 28 DAB |
| ARM Action Codes | | | AA | AA T1 | AA T2 |
| Trt No. | Treatment | Product Rate | | | |
| 1 | No Second Knock | - | 68.8e | 0.10a | 0.18a |
| 2 | Gramoxone | 800ml/ha | 76.8de | 0.03abc | 0.19a |
| 3 | Gramoxone | 1600ml/ha | 80.7cde | 0.05ab | 0.14ab |
| 4 | Gramoxone | 2000ml/ha | 89.1cd | 0.04abc | 0.12abc |
| 5 | Gramoxone | 2400ml/ha | 80.7cde | 0.00bcd | 0.05b-e |
| 6 | Sharpen | 9g/ha | 100.0a | 0.00cd | 0.00ef |
| | Hasten | 1% v/v | | | |
| 7 | Sharpen | 17g/ha | 100.0a | 0.00bcd | 0.00ef |
| | Hasten | 1% v/v | | | |
| 8 | Sharpen | 26g/ha | 100.0a | 0.00d | 0.00f |
| | Hasten | 1% v/v | | | |
| 9 | Sharpen | 34g/ha | 100.0a | 0.00d | 0.00f |
| | Hasten | 1% v/v | | | |
| 10 | Gramoxone | 800ml/ha | 91.8c | 0.04abc | 0.08a-d |
| | Sharpen | 9g/ha | | | |
| 11 | Gramoxone | 800ml/ha | 100.0a | 0.01bcd | 0.01def |
| | Sharpen | 9g/ha | | | |
| | Hasten | 1% v/v | | | |
| 12 | Gramoxone | 1600ml/ha | 89.1cd | 0.03abc | 0.05b-e |
| | Sharpen | 9g/ha | | | |
| 13 | Gramoxone | 1600ml/ha | 99.4ab | 0.03abc | 0.03c-f |
| | Sharpen | 9g/ha | | | |
| | Hasten | 1% v/v | | | |
| 14 | Gramoxone | 1600ml/ha | 93.5bc | 0.03abc | 0.07a-d |
| | Experimental | 150ml/ha | | | |
| | | LSD P= | 11.98t | 0.881t | 1.145t |
| | | Treatment Prob.(F)= | 0.0001 | 0.0091 | 0.0003 |

Means followed by same letter do not significantly differ (P=.05, LSD)

t=Mean descriptions are reported in transformed data units, and are not de-transformed.

Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL.

Alternatives to Paraquat in a Double Knock

Trial ID: BD1812 **Location:** Edgeroi **Trial Year:** 2018

Assessment Type

BURNDOWN = % Burndown/brown out

REGROWING = Regrowing weeds

SURVIVORS = Total surviving weeds including regrowing

ARM Action Codes

AA = Automatic arcsine square root % transformation

T1 = Arcsine square root percent ([5])

T2 = Arcsine square root percent ([3])

DAB = Days after Application B

Objectives:

To evaluate the efficacy of second knock applications on broadleaf weeds

Conclusions:

This trial was conducted to screen for potential alternatives to paraquat when applied as a second knock against common sowthistle. All plots received a first knock application of 1.25 L/ha Glyphosate 450 mixed with 0.3 L/ha Amicide 625 and 1% Liase. Second knock treatments were applied 14 days later. Weeds at this site were heavily grazed by kangaroos. This may have influenced the results.

The first knock application alone provided ~95% control when assessed at 6 weeks after application, with ~50% of survivors regrowing.

Gramoxone alone was disappointing with only the 2.4 L/ha rate significantly improving control compared to the first knock application.

All rates of Sharpen + Hasten alone provided improved control compared to Gramoxone at 0.8-2.0 L/ha. Mixtures of Sharpen at 9 g/ha with Gramoxone improved the control compared to the same rate of Gramoxone alone. The addition of Hasten to the same rates of Gramoxone + Sharpen improved the speed of brownout and provided improved levels of control.

In this situation, all rates of Sharpen + Hasten alone provided an effective alternative to paraquat for second knock application on common sowthistle. Mixtures of Sharpen at 9 g/ha + Hasten with Gramoxone at 800 – 1600 mL/ha also provided effective control.

| Application Description | | |
|--------------------------------|------------|-----------|
| | A | B |
| Application Date: | 23/05/2018 | 6/06/2018 |
| Application Start Time: | 12:30 PM | 12:00 PM |
| Application Stop Time: | 2:00 PM | 2:30 PM |
| Application Method: | SPRAY | |
| Application Placement: | FOLIAR | |
| Air Temperature, Unit: | 28.6 C | 21.4 C |
| % Relative Humidity: | 33 | 42.8 |
| Wind Velocity, Unit: | 0.6 m/s | 2.9 m/s |
| Wind Direction: | SW | |
| Dew Presence (Y/N): | No | |
| % Cloud Cover: | 0 | 80 |

Alternatives to Paraquat in a Double Knock

Trial ID: **BD1812**Location: **Edgeroi**Trial Year: **2018**

| Pest Stage at Each Application | | | | |
|---------------------------------------|--------------------------|----------------------|------------|----------------------|
| | A | | B | |
| Pest: | Common Sowthistle | | | |
| Stage Majority, Percent: | 16 | 60% | 16 | 60% |
| Stage Minimum, Percent: | 14 | 20% | 14 | 20% |
| Stage Maximum, Percent: | 22 | 20% | 22 | 20% |
| Diameter, Unit: | 20 | cm | 20 | cm |
| Density, Unit: | 3.1 | m² | 3.1 | m² |

| Application Equipment | | |
|----------------------------------|-----------------|----------|
| | A | B |
| Application Equipment: | Polaris | |
| Equipment Type: | BOOM | |
| Operation Pressure, Unit: | 300 kPa | |
| Nozzle Type: | AIXR | |
| Nozzle Size: | 110015 | |
| Nozzle Spacing, Unit: | 50 cm | |
| Boom Length, Unit: | 4 m | |
| Boom Height, Unit: | 50 cm | |
| Ground Speed, Unit: | 7.2 km/h | |
| Spray Volume, Unit: | 100 L/ha | |