

Knockdown Control of Rosette Staged Common Sowthistle

Trial ID: RB1807

Location:

Blue Nobby

Trial Year: 2018

| Pest Scientific Name | | | | <i>Sonchus oleraceus</i> | |
|-------------------------------|-------------------|--------------|-------------|--------------------------|-----------------|
| Pest Name | | | | Common Sowthistle | |
| Assessment Date | | | | 16/07/2018 | 24/08/2018 |
| Assessment Type | | | | BURNDOWN | COUNT |
| Assessment Unit | | | | % | /m ² |
| Treatment-Evaluation Interval | | | | 24 DAA/ 13 DAB | 63 DAA/ 52 DAB |
| ARM Action Codes | | | | AA | AA T2 |
| Trt No. | Treatment | Product Rate | Appln. Code | | |
| 13 | Fallowboss Tordon | 1000ml/ha | A | 64d | 0.05- |
| 14 | Fallowboss Tordon | 1000ml/ha | A | 97a | 0.01- |
| | Gramoxone | 1600ml/ha | B | | |
| 15 | Gp H C V | 600ml/ha | A | 36fgh | 0.09- |
| | Hasten | 1% v/v | | | |
| 16 | Gp H C V | 600ml/ha | A | 87ab | 0.03- |
| | Hasten | 1% v/v | A | | |
| | Gramoxone | 1600ml/ha | B | | |
| 17 | Gramoxone | 1600ml/ha | A | 57def | 0.20- |
| 18 | Gramoxone | 1600ml/ha | A | 86ab | 0.07- |
| | Gramoxone | 1600ml/ha | B | | |
| 19 | Sledge | 200ml/ha | A | 16i | 0.19- |
| | Hasten | 1% v/v | A | | |
| 20 | Sledge | 200ml/ha | A | 57def | 0.15- |
| | Hasten | 1% v/v | A | | |
| | Gramoxone | 1600ml/ha | B | | |
| 21 | Glyphosate CT | 1000ml/ha | A | 33ghi | 0.14- |
| | Sledge | 80ml/ha | | | |
| | Hasten | 1% v/v | | | |
| 22 | Glyphosate CT | 1000ml/ha | A | 84bc | 0.14- |
| | Sledge | 80ml/ha | A | | |
| | Hasten | 1% v/v | A | | |
| | Gramoxone | 1600ml/ha | B | | |
| 23 | Pixxaro | 400ml/ha | A | 60de | 0.04- |
| | Uptake | 0.5% v/v | | | |
| 24 | Pixxaro | 400ml/ha | A | 97a | 0.02- |
| | Uptake | 0.5% v/v | A | | |
| | Gramoxone | 1600ml/ha | B | | |
| LSD P=.05 | | | | 12.1t | nsd |
| Treatment Prob.(F)= | | | | 0.0001 | 0.1299 |

Assessment Type

BURNDOWN = % Burndown/brown out

ARM Action Codes

AA = Automatic arcsine square root % transformation

T2 = Arcsine square root percent ([5])

DAA = Days after Application A

DAB = Days after Application B

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Objective:

To evaluate alternative options to glyphosate for the knockdown control of Common Sowthistle

Conclusions:

Application was on common sowthistle that had survived and regrown following a fallow application of glyphosate + 2,4-D ester ~ 2 months earlier. The weed population was ~ 4/m² at a rosette to flowering growth stage (45% of population 20cm tall and 20cm diameter). Conditions were dry with weeds appearing moisture stressed for the duration of the trial. All first knock treatments were evaluated alone or when followed with a second knock of Gramoxone at 1.6 L/ha.

As expected, assessment of % burndown at ~2 weeks after the second knock application, showed increases in burndown where Gramoxone had been applied. All double knock treatments provided burndown of ~85-95% with the exception of the first knock of Sledge + Hasten (57%)

Assessment at 9 weeks after the first application showed high levels of control (~95-100%) from all treatments. The poor control from the previous spray did not appear to be due to glyphosate resistance.

In this situation, there was no significant difference between first knock treatments and no benefit in final weed control from the Gramoxone double knock. Although not significant, treatments that included Sledge appeared to provide the lowest level of control. All surviving sowthistle were showing signs of regrowth at the final count.

In this trial a large number of alternative treatments provided equivalent common sowthistle control compared to glyphosate (either alone or when double knocked with Gramoxone).

| Application Description | | |
|----------------------------|------------|-----------|
| | A | B |
| Application Date: | 22/06/2018 | 3/07/2018 |
| Application Start Time: | 10:30 AM | 10:00 AM |
| Application Stop Time: | 1:30 PM | 11:00 AM |
| Application Method: | SPRAY | |
| Application Placement: | FOLIAR | |
| Air Temperature, Unit: | 17 C | 18 C |
| % Relative Humidity: | 44 | 48 |
| Wind Velocity, Unit: | 5 km/h | 8 km/h |
| Wind Direction: | NE | ESE |
| Dew Presence (Y/N): | No | No |
| Soil Moisture: | DRY | SLIWET |
| % Cloud Cover: | 0 | 20 |
| Next Moisture Occurred On: | 27/06/2018 | |

| Pest Stage at Each Application | | |
|--------------------------------|-------------------|----------------|
| | A | B |
| Pest: | Common Sowthistle | |
| Stage Majority, %: | 32 | 45% |
| Stage Minimum, %: | 18 | 20% |
| Stage Maximum, %: | 65 | 5% |
| Diameter, Unit: | 20 | cm |
| Height, Unit: | 20 | cm |
| Density, Unit: | 3.8 | m ² |

| Application Equipment | | |
|---------------------------|-------------|---|
| | A | B |
| Application Equipment: | Polaris Ace | |
| 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 | |