FACT SHEET | APRIL 2026

Managing Herbicide-Resistant Ryegrass before Onions and Carrots

Practical options using cover crops in Tasmanian onion rotations

Why it matters

Herbicide resistant annual ryegrass is a major risk in onion and carrot crops due to very limited in-crop control options, especially in onions. Because onions and young carrots are poor competitors, most ryegrass control must occur before planting. Cover crops can help, but only when used deliberately as part of an integrated weed-management strategy.

Why is herbicide resistant annual ryegrass an issue in Tasmanian vegetable rotations?

The situation

- The current estimate based on GRDC funded surveys is that >50% of paddocks in vegetable rotations may have Group 1 resistant ryegrass
- Tasmania has very low resistance to pre emergent and glyphosate compared with mainland regions due to the production systems (Refer to soilwealth.com.au for a factsheet on managing herbicide resistance and grdc.com.au to get an overview of resistance against certain herbicide active ingredients by state).
- Lack of herbicide choices and industry wide integrated weed management (IWM) are a major cause of the problem
- Resistance is driven by over reliance on crop by crop 'safe' post emergent options, not broad acre intensity like in WA and SA.

BEST-PRACTICE COVER CROP USE TIPS FOR TASMANIAN ONION AND CARROT GROWERS

- Sow cover crops early enough to out-compete ryegrass
- Choose vigorous, winter-active species
- Maintain zero tolerance for ryegrass seed set
- Terminate covers on time to avoid other weeds to establish
- Integrate cover crops into an industry wide, rotational management approach.

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RMCG AUSVEG

Key drivers are high value, sensitive crops (e.g. onions, carrots, poppies, processing vegetables):

- Restrict use of some pre emergent (soil active) residual herbicides
- Reenforce the reluctance to using pre-emergent herbicides due to observed carryover issues
- Lead to strong reliance on post emergent grass herbicides, especially Group 1 over many years
- Are grown in typical rotations that may not allow the use of some herbicides, unintentionally intensifying selection on fewer herbicide active ingredients
- Dry and late summer harvested crops allow rye grass to set seed.

THE GOOD NEWS

Tasmania has less overall resistance pressure than SA and WA, but vegetable specific constraints and rotations with dry harvested crops drive resistance evolution.

What cover crops can do to manage ryegrass risk

Cover crops do not manage herbicide resistant ryegrass on their own, but they can create a valuable control window before cash crops, allowing growers to:

- Reduce ryegrass numbers before onions or carrots are planted
- Shift weed control out of the high-risk onion or carrot phase
- Reduce reliance on selective herbicides
- Lower ryegrass seedbank pressure over time.

Cover crops help when:

- Ryegrass is allowed to germinate, then controlled before onions or carrots
- The cover crop establishes quickly and produces high biomass
- The cover phase enables non-selective control (knockdown or cultivation)
- ***All ryegrass seed set is prevented***
- The cover phase is used deliberately to reduce seedbank pressure.

Cover crops are unlikely to help when:

- Cover crop establishment is slow or patchy
- Ryegrass survives and sets seed within the cover
- Covers are used without knockdown or cultivation
- Weed-contaminated seed is sown
- Cover crops are expected to solve herbicide resistance on their own.

Tasmanian system example of ryegrass control before onions or carrots

Example location: North-West Tasmania | Rotation: Potatoes or other crop ➔ winter cover crop ➔ onions or carrots

What growers can do

- Post-potato or other crop harvest: allow ryegrass to germinate, then apply knockdown or light cultivation.
- **Autumn:** sow a vigorous cereal cover crop (e.g. oats or triticale) or mix with a legume and broadleaf option to achieve rapid canopy closure.
- **Winter**: monitor paddocks and control any ryegrass escapes before seed set.
- **Late winter:** terminate the cover crop and create a clean stale seedbed, use preemergent herbicides if feasible.
- **Spring:** plant onions or carrots into a paddock with reduced ryegrass pressure.

Outcomes

- Lower ryegrass pressure during the crop
- Reduced seedbank replenishment
- Improved trafficability after wet winters because cover crops take up excess water
- Reduced reliance on in-crop herbicides

KEY MESSAGE

Cover crops are a risk-management tool, not a silver bullet. They need to be managed accordingly.

TAKEAWAY

"Grow something competitive, then clean it up hard before onions and carrots."

WANT TO KNOW MORE?

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