

Managing Herbicide Resistant Annual Ryegrass

FACT SHEET



Key Messages

1. Planning

Create and follow a plan that incorporates a systematic approach to weed control. It may take several years to fully control a weed population.

2. Integrated Approach

Utilise as many non-chemical control measures as possible, this reduces the selection pressure on herbicide groups.

Rotate herbicide modes of action to prolong their efficacy.

3. Monitor Results and Control Escapes

Weeds that are not controlled by herbicide applications must be controlled through an alternative method. These escapes will otherwise contribute to herbicide resistance development.

4. Prevent Seed Set for Two Consecutive Years

Typically 85% of the annual ryegrass seed-bank will germinate within two years and 99% within three years. Be prepared to sacrifice areas to avoid seed set.



When grass selective herbicides are no longer effective for the control of annual ryegrass, integrated management programs incorporating breaks where no seed set is allowed will allow more productive cropping to continue.

OPPORTUNITIES AND OPTIONS FOR CONTROL: CROP

- Competition
- Herbicides
 - Knockdown pre-sowing
 - Selective pre-emergent herbicides
 - Selective post-emergent herbicides
 - Spray-topping (pulses)
- Grazing
- Hay/Silage
- Spraying out (in worst cases)
- Windrow burning (particularly canola and pulses)

OPPORTUNITIES AND OPTIONS FOR CONTROL: PASTURE

- Competition
- Herbicides
 - Knockdown pre-sowing and returning to crop
 - Selective pre-emergent herbicides
 - Selective post-emergent herbicides
 - Spray-topping to control seed-set
- Grazing
- Hay/Silage

CROPPING EXAMPLES

Canola (Triazine Tolerant)

- Lime/Gypsum incorporated via cultivation encourages ryegrass germination
- Knockdown spray before sowing
- Adequate nutrition, especially Nitrogen, encourages crop competition
- Trifluralin, Atrazine, Simazine pre-emergent herbicides
- Clethodim post emergent herbicide
- Condense canola windrows by removing spreaders to improve burning
- Burn canola windrows early autumn, ensuring adequate heat to destroy ryegrass seeds

CROPPING EXAMPLES

Wheat

- “Double Knockdown” spray before sowing with Glyphosate followed by Paraquat
- Sakura pre-emergent herbicide or Boxer Gold pre-emergent herbicide
- Adequate nutrition encourages crop competition
- Monitor for escapes in spring

Lupins

- Knockdown spray with Glyphosate (Treat survivors with Paraquat)
- Trifluralin, Simazine pre-emergent herbicides
- Clethodim post emergent herbicide
- If necessary, spray top with Gramoxone pre-harvest to prevent ryegrass setting seed
- Leave straw in narrow windrows
- Burn windrows early autumn, ensuring adequate heat to destroy ryegrass seeds
- Follow with wheat

Field Pea Brown Manure

- Knockdown spray with Glyphosate (Treat survivors with Paraquat)
- Sow early to maximise biomass generation and competition with weeds
- Choose varieties with good disease resistance that generate large amounts of biomass, such as Morgan, Percy, Parafield or Hayman
- Spray-fallow with Glyphosate and appropriate companion herbicides before weeds set seed or pods form on the peas
- “Double Knock” with Paraquat 10-14 days later to ensure control of any survivors
- Residues may need to be managed, depending on sowing equipment
- Follow with Canola, then Wheat

Canola (Triazine Tolerant) - following Field Pea Brown Manure

- Rooting depth of peas and subsequent residue cover increases soil moisture available to canola, allowing early sowing into moist soil
- Knockdown spray before sowing
- Early sowing and residual Nitrogen maximizes crop competition
- Trifluralin, Atrazine, Simazine pre-emergent herbicides
- Clethodim post emergent herbicide
- Inspection in spring to determine the need for windrow burning, or herbicides in wheat

PASTURE EXAMPLES

Spray-top (Spring)

- Graze throughout the year to take advantage of ryegrass feed value
- Spray-top paddock with Paraquat in spring to prevent grasses from setting seed

Winter Clean (Winter)

- Graze pasture heavily so that plants are short
- Spray with Paraquat (Knockdown) and Simazine (pre-emergent herbicide) six weeks after the autumn break
- Once pasture has recovered, graze again and inspect for ryegrass survivors

Hay/Silage (Spring)

- Cut pasture for hay or silage before ryegrass sets seed
- Inspect pasture regrowth to determine the need for a second cut of hay or spray-topping of grasses to avoid seed set

Spray Fallow (Spring)

- Knockdown spray in spring with Glyphosate plus appropriate companion herbicide to remove pasture plants and grass weeds
- Maintain a weed-free fallow through summer
- Follow with Wheat if last two years of pasture were free of grass weeds, to make the most of residual Nitrogen from legumes
- Follow with Canola if grass weeds were present in the last two years of pasture, to control any grass weeds that emerge in-crop and avoid root diseases

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