



Photo: Peter Baker, Fenceline Consulting



# Onion weed

(*Asphodelus fistulosus* L.)

## Key facts

- Onion weed is re-emerging as a problem in low-rainfall cropping regions of south-eastern Australia.
- Onion weed populations tend to build up during the pasture phase of the cropping rotation.
- No-till farming and the reduction in the use of sulfonylurea (SU) herbicides has led to an increase in onion weed populations.
- Effective herbicide options in pastures remain limited.
- A double-knock herbicide application during summer is often necessary, particularly to control mature plants.

*Onion weed (Asphodelus fistulosus L.) is an unpalatable grass-like herb that can be annual, biennial or perennial. The weed produces abundant, white-pink flowers during spring and summer, yielding as many as 13,200 seeds per plant. Native to the Mediterranean regions of southern Europe, northern Africa and the Middle East, onion weed extends through western Asia to India. It was introduced into Australia as a garden ornamental during the 1850s.*

**Onion weed can germinate throughout the year**, but it usually germinates after summer rain. It prefers neutral to alkaline soil and can survive prolonged dry periods due to its drought tolerance. The weed thrives in run-off areas, such as roadsides, depressions, creek lines and non-arable rocky outcrops.

### Impact in no-till cropping systems

The introduction of sulfonylurea (SU) herbicides, in combination with minimum till, during the 1980s effectively controlled onion weed in low-rainfall cropping systems across south-eastern Australia. However, since the adoption of no-till and the reduced use of SUs, onion weed populations have increased during the past 15–20 years, particularly in seasons with above-average summer rainfall.

Onion weed populations tend to build up during the pasture phase of a rotation, particularly if two or more years of pasture are grown before the cropping phase. Although onion weed is of

low toxicity to livestock, it is unpalatable and not controlled by grazing. Herbicide control options for onion weed in pastures are limited.

### Control options for onion weed

A combination of chemical and non-chemical strategies can be used to control onion weed. Non-chemical options include increased crop competition, (increasing sowing rates or reducing row spacing) and full-cut cultivation. In most years it will require some form of double-knock during summer. Effective herbicide options are available for onion weed control during summer, which reduce the need for cultivation and the level of exposure of soil to erosion.

### Pre-cropping chemical control options

Various farming systems groups (including the Upper North Farming Systems group — UNFS) and government agencies



**PREVIOUS PAGE:** Unpalatable to stock, onion weed populations tend to build up during the pasture phase. Photos: Andrew Storrie, Agronomo Consulting and Peter Baker, Fenceline Consulting.

**LEFT:** Individual onion weed plants can produce up to 13,200 seeds. Photo: Andrew Storrie, Agronomo Consulting.

have tested a range of herbicide options in field trials over the years. Two of the most successful chemical control options are glyphosate mixed with metsulfuron (e.g. Ally®) and paraquat during summer–early autumn. A double knock using paraquat, usually applied either 2–4 weeks after the first spray or after a subsequent rainfall event, is often required to achieve near 100 per cent control.

Achieving 100 per cent control of onion weed with herbicides during summer can be expensive. The use of precision spray technologies (i.e. WeedSeeker™ or WEEDit™ systems) in the future will help reduce herbicide costs.

### Chemical control options in pasture

During 2015, Bates Agricultural Consulting in partnership with SARDI tested 12 different herbicide options to control onion weed in medic pasture. Of these options, only paraquat (250g/L) at 600mL/ha resulted in effective control (95 per cent). However, this treatment also resulted in a significant reduction in medic biomass (46 per cent) compared with the nil (control) treatment.

The use of paraquat in medic-based pastures to control onion weed is a trade-off between weed control and pasture production, as such, cultivation is still used as an effective control measure. In permanent grass-based pasture systems in the Upper North, a combination of 2,4-D ester and metsulfuron has been used to successfully control onion weed.

## Non-chemical control

### Non-chemical control options

#### ■ Crop competition

If onion weed numbers are relatively low (<5/m<sup>2</sup>), cereal crops will compete reasonably well, especially if row spacings are kept narrow (18–25cm) and sowing rates are at the higher end of district recommendations.

#### ■ Strategic tillage

Strategic soil disturbance with full-cut cultivation can effectively control onion-weed-infested pasture paddocks coming into cropping.

### Further information

- Herbiguide website: [http://www.herbiguide.com.au/Descriptions/hg\\_Onion\\_Weed.htm](http://www.herbiguide.com.au/Descriptions/hg_Onion_Weed.htm)
- Upper Northern Farming Systems Stubble Management Guidelines — Onion weed management

**BELOW:** Paraquat (applied on right) is still the only effective herbicide for onion weed control in medic pasture. Photo: Peter Baker, Fenceline Consulting

