

## Resistance to glyphosate found in feathertop Rhodes grass populations (*Chloris virgata* Sw.) in Australia

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**Summary** Feathertop Rhodes grass (*Chloris virgata* Sw.) is annual, warm season, C4 grass. It has become a significant weed in agricultural systems in northern Australia. This weed species has spread to southern Australia, where it is found on roadsides and vineyards in South Australia. *C. virgata* is viewed as difficult to control with glyphosate. It was reported that *C. virgata* had a high risk of evolving glyphosate resistance, particularly in summer fallows. Dose response experiments were conducted on one susceptible (CV7) and two suspected resistant (V15 and V14.2)

populations of *C. virgata* collected in Victoria and South Australia, Australia. The V15 and V14.2 populations exhibited LD50 values 5.7 and 16.9-fold greater than the sensitive biotype CV7, respectively. Sequencing of the target-site gene (EPSPS) of the three populations confirmed the presence of mutations at position 106 leading to a change from proline to serine in V15 and from proline to leucine in V14.2 populations. This is the first report to show that these substitutions confer resistance to glyphosate in *C. virgata*.