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## **Efficacy of graminicides on grass weed species of forestry**

**D.V. Clay<sup>a</sup>, F.L. Dixon<sup>a</sup> and I. Willoughby<sup>b</sup>**

<sup>a</sup>Avon Vegetation Research Limited, PO Box 1033, Nailsea, Bristol BS48 4FH, UK

<sup>b</sup>Forest Research, Forestry Commission, Alice Holt Lodge, Farnham, Surrey GU10 4LH, UK

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### **Abstract**

Good crop selectivity makes the use of graminicides an attractive proposition for use in tree establishment. However when compared to the agricultural situations upon which most graminicide recommendations are currently based, regenerating woodlands usually contain larger specimens of a wider range of grass weed species. For this reason, five field experiments were set up to investigate the relative susceptibility of young and established plants of 29 grass weed species and *Juncus effusus* to the graminicides cycloxydim, fluazifop-*p*-butyl and propaquizafop in comparison with glyphosate and propyzamide. Graminicide applications were made 6, 12 and 18 months after establishing small plants in early autumn. Generally, a wider range of grass species appeared to be susceptible, and at later growth stages, than currently recommended by manufacturers.

Cycloxydim was the most effective graminicide on perennial grasses giving good long term control of *Anthoxanthum odoratum*, *Cynosurus cristatus*, *Dactylis glomerata*, *Festuca arundinacea*, *Lolium perenne*, *Molinia caerulea*, *Phleum pratense* and *Poa trivialis* at all application dates and *Agrostis gigantea*, *Agrostis stolonifera*, *Arrhenathrum elatius* in spring only.

Fluazifop-*p*-butyl was the most effective on *Festuca pratensis*. Autumn applications of cycloxydim and fluazifop-*p*-butyl controlled *Holcus lanatus* and cycloxydim controlled *Agrostis capillaris*, *Deschampsia caespitosa* and *Nardus stricta*.

Propaquizafop was the most effective graminicide on *Elytrigia repens*. *Festuca longifolia*, *Festuca ovina*, *Festuca rubra* ssp. *rubra* and *J. effusus* were not susceptible to these herbicides.

The graminicides were generally very effective on annual species except *Poa annua*, although cycloxydim gave poorer control of older plants of *Anisantha sterilis* and *Anisantha diandra* and propaquizafop of *Apera spica-venti*. Possible factors affecting susceptibility of grass species to these herbicides are reviewed.

**Keywords:** Herbicide efficacy; Cycloxydim; Fluzifop-*p*-butyl; Propaquizafop; Glyphosate; Propyzamide; Grass species; *Juncus effusus*; Forestry

Corresponding author. Tel.: +44 0 1275 851735.

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