

FLUROXYPYR GIVES RAPID KNOCKDOWN OF MADIERA VINE (*ANREDERA CORDIFOLIA*) AND KILL OF MOTHER-OF-MILLIONS (*KALANCHOE* SPP.)

J.T. Swarbrick

Weed Science Consultancy, Toowoomba Q 4350, Australia

Foliar application of 1.2% fluroxypyr (4 mL Starane per litre of water without additional wetter) as a low pressure high volume spray gave rapid knockdown of the serious environmental weed Madiera vine (*Anredera cordifolia*) and quickly killed at least three species of the less serious Mother-of-millions (*Kalanchoe* spp.), with safety to kangaroo grass (*Themeda triandra*).

Madiera vine carpeting the ground was treated during and just after flowering to wet both leaves and visible stems. Chlorosis and wilting occurred within two weeks, followed by progressive defoliation and collapse of stems. Long term control of a single application was unsuccessful, since regrowth occurred from tubers in the ground.

Mother-of-millions (*K. tubiflora*) treated at all stages before flowering by directed spraying from above and the side to wet stems and leaves wilted within one week, became chlorotic and began defoliating within two weeks, and collapsed within four weeks. Hybrid mother-of-millions (*K. tubiflorum x diagremonianum*) and live leaf (*K. pinnata*) reacted more slowly, but both were dead within six weeks.

ENVIRONMENTAL FACTORS INFLUENCE EFFICACY OF GLYPHOSATE APPLIED TO BARNYARD GRASS (*ECHINOCHLOA COLONA*)

S. Tantipat, M. Boersma and S.W. Adkins

Department of Agriculture, The University of Queensland, St Lucia Q 4072, Australia

Glyphosate activity is affected by weather conditions before and after application and it is generally agreed that environmental conditions that promote growth will increase efficacy. The objective of this series of glasshouse experiments was to examine the efficacy of glyphosate against *Avena fatua*, a winter weed of south east Queensland, grown under different soil moisture, light and temperature regimes.

Pre-germinated seeds were grown under uniform conditions until they were 15 days old and then kept in either wet (-0.1 MPa, field capacity) or dry (-1.3 MPa, visible plant wilting) soil conditions for 3 weeks before glyphosate (180 to 360 g ha⁻¹) was applied. Light intensity did not influence the time it took the plants to die but visual damage was faster under full sunlight than 50% shading (ca. 500 µmol m⁻² s⁻¹). Moisture stress reduced the level of glyphosate control, reduced physical damage and delayed mortality being the most obvious changes. The effect of glyphosate was similar on a number of different biotypes when no moisture stress was applied, however under moisture stress, the time it took plants to die varied suggesting biotype differences. Temperature also influenced efficacy, and level of control was dependent on an interaction of soil moisture level with temperature. Better control was possible on plants growing under well watered conditions at low temperatures (20°C) compared to plants growing under moisture stress at high temperatures (30°C).

Soil moisture level and air temperature and to a lesser extent biotype and light intensity all have an important influence on the glyphosate efficiency of wild oat, soil moisture level being the most important factor.