

**Effect of glufosinate-ammonium, glyphosphate and imazapyr herbicides at two spraying volumes on *Imperata cylindrica* (L.) Raeuschel.**

**ABSTRACT**

*Imperata cylindrica* (L.) Raeuschel is a problematic weed of the tropical region which causes significant losses in cultivated and non-cultivated areas, and is difficult to control. A field study was conducted to evaluate the effectiveness of glufosinate-ammonium, glyphosate and imazapyr herbicides on a stand of the weed in the field. The herbicide treatments were applied at their recommended field rates (glufosinate-ammonium at 3 kg a.i. ha<sup>-1</sup>; glyphosate at 1.65 kg a.e. ha<sup>-1</sup>; imazapyr at 0.75 kg a.e. ha<sup>-1</sup>), at two spray volumes of 400 and 800 L ha<sup>-1</sup>. Visual observation on foliage kill was related to the tiller number/unit area and mass production of the green foliage and fresh rhizomes, and the short-term plant succession pattern was also evaluated. Spray volumes of 400 and 800 L ha<sup>-1</sup> did not influence the effectiveness of the herbicides on the weeds, however, significant kill (>80% kill) of the foliage was observed for each herbicide when compared with the control. Glufosinate-ammonium caused fast kill (within 1 week after treatment (wat)) of *I. cylindrica* foliage, but plant regeneration was faster (within 10 wat) than treatments with glyphosate or imazapyr which killed both the foliage and rhizomes (within 3 and 13 wat, respectively), resulting in longer control period and minimal regrowth of the weed. Regeneration of other plant species was much less in imazapyr treatment compared with those of the glyphosate or glufosinate-ammonium. Plants regenerated were mostly of the broadleaf species.

**Keyword:** Herbicides effectiveness; *Imperata cylindrica*; Glufosinate-ammonium; Glyphosphate; Imazapyr.