

## AS2.

### PERFORMANCE OF GOTUKOLA UNDER SELECTED PRE- AND POST-EMERGENCE HERBICIDES AND TIMING OF NITROGEN APPLICATION

S.L. RANAMUKHAARACHCHI AND K.H.T.M. PERERA

*Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka*

Gotukola (*Centella asiatica L. Urb*) is a popular leafy vegetable grown on a commercial scale, is often vulnerable for severe weed competition due to its prostrate growing nature, thus causing great yield losses. Manual weeding is currently practiced despite high cost of labour in the absence of any effective low cost weed control method. Therefore, a series of experiments was conducted at the University of Peradeniya and Gurukelle in Kandy district, to develop a herbicide-based effective weed management method to increase both leaf yield and net income of the farmers engaged in the cultivation of gotukola.

In the herbicide screening phase, commonly available pre-and post-emergence herbicides in the market were tested for the herbicide tolerance. Factorial combinations of two rates of glyphosate (0.356 and 0.712 kg a.i/ha) and two commonly used pre-emergence herbicides (oxyfluorfen and alachlor) were tested in a pot experiment. A field study comprising combinations of two dosages of glyphosate (0 and 1.08 kg a.i / ha), three pre-emergence herbicides (viz. None, alachlor and oxyfluorfen) and three timings of Nitrogen (N) application was conducted.

The herbicide screening studies showed that glyphosate and fluazifop-butyl as post-emergence herbicides, and linuron, alachlor, diuron, napropamide and oxyfluorfen as pre-emergence herbicides did not cause any casualty to gotukola. Gotukola remained unaffected in the pot study too.

Gotukola was neither affected by the normal recommended rate of glyphosate (1.08kg a.i/ ha) nor pre-emergence herbicides during the field experiment. The fresh leaf yield of gotukola was highest with the use of glyphosate + alachlor combination (6.05mt or 51,405 bundles/ha), while with glyphosate + oxyfluorfen combination leaf yield was 4.67 mt/ha (39,690 leaf bundles/ha). It was only 2.39 mt/ha (20,230 bundles) without both post and pre-emergence herbicides.

Both grass and broadleaf weeds were fully suppressed by the glyphosate at 1.08 kg a.i /ha when compared to no glyphosate, and had a longer weed free period when glyphosate was combined with alachlor when compared either with oxyfluorfen or none.

Net income was highest with glyphosate + alachlor combination (Rs. 86,316 per ha) when compared to current practices adopted by farmers (Rs. 18,498 per ha), and also N, when applied one week later ( Rs. 53,537 per ha) than N applied one week prior to or immediately after application of herbicides.