

## **Management of Herbicide Resistant Weeds in Processing Carrot Fields in New York**

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Weeds cost growers hundreds of thousands of dollars because of improper carrot root formation, reduced yields and harvest interference. Pigweed and ragweed have become particularly difficult to control in the Potter muck region of Yates County, where roughly 400 acres of carrots are grown. Growers rely on post-emergence applications of linuron (Lorox), using multiple low-rate applications starting at the 1 true-leaf stage. Linuron-resistant pigweed, ragweed and purslane have been previously documented in carrot production (<http://www.weedscience.org/summary/home.aspx>) with the problem escalating in Canada in recent years ([www.omafra.on.ca](http://www.omafra.on.ca)). Seed collected from Powell Amaranth escapes on the Potter muckland were grown in the greenhouse and found to be resistant to sprays of 0.25 lb active ingredient/acre linuron and metribuzin. To find alternate products, field trials were conducted in 2012 and 2013 on mineral soils at the H.D. Thompson Research Farm in Freeville, NY and in 2013 on muck soil in Potter, NY. Pre-emergence applications of Lorox, Dual Magnum, Nortron, Prowl H<sub>2</sub>O, Zidua, Harness/Warrant and Define, and post-emergence applications of Blazer, Reflex, GoalTender and Define were tested. There was no crop injury with the pre-emergence treatments on the muck, but significant stand reduction, stunting and reduced yields occurred with Zidua and Warrant on the mineral soil. In the muckland trial, the Zidua and Harness plots when followed by a single post-emergence application of 0.375 lb active ingredient/acre linuron were clean all season-long. All post-emergence treatments in the muck trial resulted in severe necrosis to 2-leaf carrots, however this was outgrown. At the Thompson Research Farm, the post-emergence treatments were applied at the carrot 4- and 7-leaf stages, and while there was some chlorosis, necrosis and stunting in all treatments, it was only significant with GoalTender and Define. Yields were not impacted by the post-emergence treatments. Data from the trials will be used to obtain new product registrations for use on carrots in New York.