

Herbicide Drift Injury to Potato

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2013 Jan 23-24, Manitoba Potato Days, Brandon, Manitoba



Background

- Lately there have been reports of injury to potato crops from herbicides
- Herbicide injury could result from drift from use in neighbouring crops, improper cleaning of spray tank or mis-application in potato crop itself.
- Demonstration trial was set up to understand the injury

2011

- Four herbicides, commonly used in Manitoba were selected for the demonstration
 - Group 2 – Odyssey (imazamox 35% + imazethapyr 35%)
 - Group 4 – 2, 4-D (2,4-D Ester)
 - Group 9 – Round-Up (Glyphosate)
 - Group 10 – Liberty (glufosinate ammonium)
- Four concentrations of the herbicide solution (0, 1, 10 and 20% of the recommended rates on a field crop) were used.
- Herbicide solutions were sprayed on Russet Burbank plants in a field, about 5 weeks after emergence
- Tubers were harvested from these treatments and visually observed for effects from the herbicides
- Tubers were then put in cold storage for planting in 2012

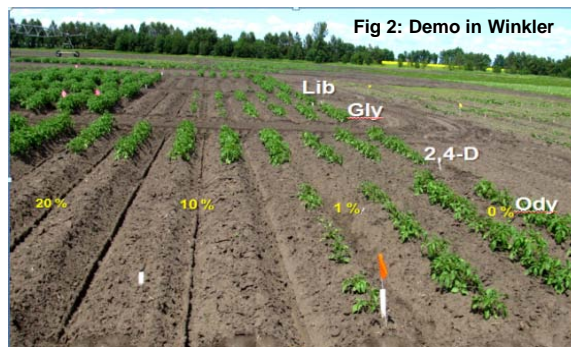
Figure 1 : Daughter tubers showing effects of herbicide drift



* 2011 Harvest: At these low concentrations, Odyssey affected tuber surface; 2,4-D and Round-Up had no apparent visual impact on tubers. Liberty reduced the tuber size but showed no surface symptoms.

2012

- Daughter tubers from 2011 herbicide exposure were planted in 2 locations: Winkler and Portage La Prairie CMCDC sites.
- Emergence was recorded after 4 weeks of planting.
- Emergence was very similar at both locations. Data for only Winkler site presented here



Figures 2 & 3: Emergence in Winkler, daughter tubers of 2011 drift affected plants. Herbicides Odyssey, Round-Up and Liberty significantly reduced emergence and yield (Fig 4).

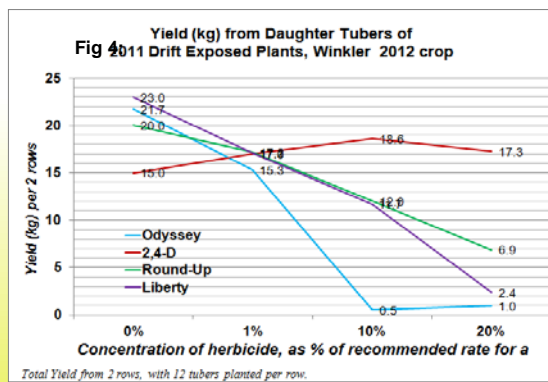
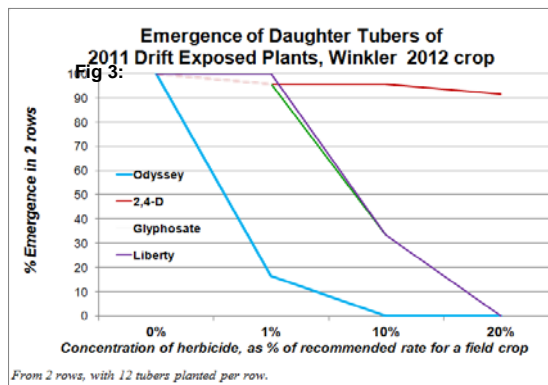


Fig 5: Impact of herbicides on emerging seedlings

2012 Field Planting

- Untreated RB tubers were also planted in Winkler and Portage, for demonstrating affect of current season spray drift injury
- 4 concentrations of 6 herbicides (Frontline-2,4-D & Infinity added in 2012) were used for the demonstration
- Foliage injury from the herbicides are highly variable, and symptoms appeared to fade away with time
- Daughter tubers have been harvested and put in cold storage for planting in 2013



Acknowledgements

- Field help from Leon Jarvis in 2011 and Tom G & Justin C. in 2012 is greatly appreciated;
- CMCDC (Portage la Prairie, MB): In-kind support as labour (including plot preparation, planting, maintenance & harvest), land, equipment, etc.