Herbicide Drift Injury to Potato

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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 misapplication 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

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

Figure 1: Daughter tubers showing effects of herbicide drift

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 (Frontiline-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

Figure 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).

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