A Survey Of Weeds In Corn, Soybeans And Winter Wheat Across 6 Southwestern Ontario Counties

Purpose:

The last survey of weeds populating fields in Ontario was conducted over 20 years ago by B. Frick and A.G. Thomas (1992). The purpose of this project was to identify weed species that occur in corn, soybean and winter wheat fields prior to herbicide application and to compare the most abundant weed species in 2014 to those identified in the Frick and Thomas survey.

Methods:

One hundred and eighty-three corn, soybean and winter wheat fields were surveyed from May 8th to July 11th in Middlesex, Oxford, Huron, Perth, Waterloo and Wellington counties. The surveyor walked 100 paces along the edge of a field at one corner, then turned at a right angle and walked 100 paces into the field, marking the first quadrant. Weed counts were taken in a total of thirteen 0.25m^2 quadrates spaced at 20 paces apart using the "upside down W" sampling pattern that was used by Thomas, 1985. For perennial grasses and perennial herbaceous species, number of shoots were counted. For annual grasses, rooted individuals were counted regardless of tiller number.

Results:

Table 1: The five most abundant weeds found in corn prior to herbicide application in six counties during 2014

County	# 1	# 2	# 3	# 4	# 5
Huron	green foxtail	wild buckwheat	lamb's-quarters	common ragweed	yellow foxtail
Middlesex	green foxtail	dandelion	volunteer alfalfa	field horsetail	common ragweed
Oxford	large crabgrass	green foxtail	lamb's-quarters	redroot pigweed	yellow nutsedge
Perth	perennial sow-thistle	common ragweed	green foxtail	volunteer red clover	yellow nutsedge
Waterloo	lamb's-quarters	yellow foxtail	dandelion	yellow nutsedge	field horsetail
Wellington	dandelion	annual bluegrass	tufted vetch	volunteer wheat	common ragweed

Table 2: The five most abundant weeds found in soybean prior to herbicide application in six counties during 2014

County	# 1	# 2	# 3	# 4	# 5
Huron	lamb's-quarters	common ragweed	dandelion	green foxtail	redroot pigweed
Middlesex	volunteer corn	green foxtail	field horsetail	lamb's-quarters	common ragweed
Oxford	witchgrass	lamb's-quarters	green foxtail	dandelion	field horsetail
Perth	dandelion	lamb's-quarters	volunteer corn	field bindweed	field horsetail
Waterloo	lamb's-quarters	redroot pigweed	dandelion	common ragweed	perennial sow-thistle
Wellington	green pigweed	green foxtail	field horsetail	Canada fleabane	lady's thumb

Table 3: The five most abundant weeds found in winter wheat prior to herbicide application in five counties during 2014

County	# 1	# 2	# 3	# 4	# 5
Huron	lamb's-quarters	dandelion	wild buckwheat	common ragweed	perennial sow-thistle
Oxford	green foxtail	dandelion	lamb's-quarters	wood sorrel	chickweed
Perth	common ragweed	dandelion	purslane speedwell	field horsetail	lamb's-quarters
Waterloo	chickweed	purslane speedwell	annual fleabane	lamb's-quarters	annual sow-thistle
Wellington	volunteer canola	dandelion	quackgrass	field violet	common burdock

Table 4: A comparison of the top 6 most abundant weeds in each of the two Ontario surveys

Rank	Frick & Thomas Survey (1988-89)	2014 Survey
1	green foxtail	lamb's-quarters
2	lamb's-quarters	green foxtail
3	quack grass	common ragweed
4	redroot pigweed	field horsetail
5	common ragweed	dandelion
6	dandelion	pigweed (both redroot & green)

Summary:

In general, the abundant species identified in 1988 and 1989 were also abundant in 2014. However, there were some notable changes. Quack grass, which was the 3rd most abundant weed in Frick and Thomas's survey, was much less abundant in the 2014 survey. There were a number of species that were identified in the 2014 survey and at notable levels of abundance that did not show up as abundant species in the Frick and Thomas survey. Specifically Canada fleabane, purslane speedwell, tufted vetch and annual bluegrass

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Project Contacts:

Mike Cowbrough, OMAFRA, mike.cowbrough@ontario.ca