
**EXEMPLAR DMP ONLY - THIS DOES NOT REPRESENT AN
ACTUAL RESEARCH PROJECT**

Herbicide-Resistant Weeds in Ontario - Surveys, Mechanism of Resistance, and Development of Integrated Management Strategies

A Data Management Plan created using DMP Assistant

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Project abstract:

There is an increasing number of herbicide-and multiple-resistant weed biotypes in Ontario and they are found in wider geographic area. Herbicide-resistant waterhemp, common ragweed, giant ragweed, and Canada fleabane have caused an average yield loss of 17, 75, 72, and 64% in corn; and 43, 74, 74, and 65% in soybean, respectively. Understanding the biology of these emerging weed pests is required to develop integrated weed management strategies. Surveys on their distribution and an understanding of the mechanism of resistance of these biotypes is crucial for the proper development of control strategies.

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Data collection

Provide an overview of the data that will be generated, collected or acquired to support this project. If data will be acquired from a third party, specify the source.

Studies will be implemented on the evaluation of new herbicides and new herbicide-resistant crop hybrids/cultivars. Trials will be established on farms to evaluate diverse integrated weed management strategies including environmental impact, crop row width, crop rotation, cover crops and diverse herbicide modes-of-action.

What method(s) of data collection will be employed?

Numeric data will result from crop measurement and plant analysis. Tabular data will be acquired through a provincial survey.

What types of data will be included?

All data will be numeric.

What software or digital formats will be used to collect, manage and analyze the data?

All data will be captured and analyzed in Microsoft Excel.

Provide an indication of the scope of the data?

A total of 100 plots will be employed to accommodate all test conditions. Metrics from each plot will be collected five times on average over a period of three months. The survey will be administered to 100 farms.

Data storage

Estimate the size of data storage that will be required.

Approximately 10 GB.

Where will your data be stored during the collection, collation and analysis phases of the project?

The primary copy of the data will be stored in OneDrive. A second copy will be stored on a remote hard drive in a locked cabinet in the PI's office.

What backup strategy will be employed?

The data will be backed up to the hard drive once a week.

How will your data files be organized? What file naming conventions will you use? A brief overview or example would be adequate.

Folders will be established for the nature of the data (e.g. raw, collated, analyzed, final). Within each folder files will be named by type of analysis, date and version number (e.g. cropInjury_20210309_01). Survey data will be stored separately from the numeric data.

What metadata will be developed for your data? Will there be supplemental documentation prepared to assist with the interpretation and analysis of your data?

A data dictionary will be developed to explain each column in the spreadsheets. A README.txt file will be created for each folder.

Data archiving and preservation

Will you deposit your data in the UG data repository or an external data repository? If you are opting to not archive your data in a repository, where will your data be housed after completion of your project?

Raw, processed, analyzed and final data from this project will be deposited into the Agri-environmental Research Data Repository (<https://dataverse.scholarsportal.info/dataverse/ugardr>) along with relevant supplemental files through a facilitated deposit process managed by the University of Guelph Library.

Discuss any data transformations that will be needed so your data is preserved in appropriate, non-proprietary formats.

Data in Excel files will be saved as plain text CSV files for preservation.

If some of your data will not be preserved, how long will you retain it? Will the non-preserved data be destroyed?

All data will be preserved.

Sharing and reuse

Will the data that you archive in a data repository be made available for sharing and reuse by other researchers?

All data generated in this project including surveys, crop injury, weed control, weed density, weed dry weight, seed moisture content and crop yield will be shared via the UG Data Repository.

Explain which version of your data or subset of your data will be shared.

Raw, processed, analyzed and final data will be shared.

When will your data be available for discovery by other researchers? Will you impose an embargo on publication of your data? If so, please provide details on the duration of the embargo.

Data will be shared immediately following publication of the findings.

Will you limit who can access your data? If so, who will that be and why are you limiting the data's reuse?

No.

Are there specific license terms you will assign to users of your data?

Restrictions/limitations

Are there limitations or constraints on how you manage your data resulting from legal, ethical or intellectual property concerns?

There are no current or future restrictions on the data used in and/or generated during this project.

Would your data need to be anonymized or de-identified before being shared with others?

No.

Confidential information

What information do you want to include in your DMP that should not be publicly shared?

N/A