RESEARCH SUMMARY		
	Project Title: Manitoba Corn Initiative- Corn Breeding Program	
	Date: Feb 28, 2015	
	Project Start Date: April 1, 2014	**Project End Date:** March 31, 2018
	Principal Researcher: Dr. Lana Reid	
	Email: lana.reid@agr.gc.ca	**Phone:** 613-759-1619

OBJECTIVE:

1.) Development of a satellite breeding nursery in MB.
2.) Increase the number of yield trials for AAFC testcross hybrids in MB from one to five trials per year.
3.) Establishment of a Goss's Wilt nursery in MB.
4.) Increase corn research in all areas of science in MB and increase the number of research plots in MB.

SUMMARY:

Funding came too late to plant a satellite breeding nursery in MB in 2014; however, we have made many plans to develop lines and families for a MB nursery in 2015. At the Ottawa nursery in 2014, we made several more selections for early maturing developing lines and harvested more seed to be used in the 2015 MB nursery. The harvest and subsequent seed processing was expanded with funds used from this project to hire Dan Kristoliatis as a technician for this project. In September 2014, we also prepared and shipped a 1423 row breeding nursery to our winter nursery in New Zealand. This will allow us to have 2 generations of selection in 2014/15. Seed from this nursery will be returned to us in April 2015 and we will make selections to send to the 2015 MB breeding nursery. We are currently planning the 500 row MB nursery to be planted in Carberry this summer.

In 2015, we had two new corn field experiments at CMCDC-Portage with Curtis Cavers. One field was a screening of 100 AAFC inbred lines. Observations made on silking dates and general performance allowed us to determine which of our inbreds had the most promise in MB for future breeding initiatives. The second experiment was a 50-entry, 3 replicate yield trial of experimental hybrids involving AAFC genotypes. Data from this trial was used to select inbred and hybrid genotypes for the MB nursery in 2015.

We have not established a Goss's wilt nursery in MB as the technology to screen for this disease is still being developed by other researchers. However, in 2015, DuPont Pioneer screened 100 AAFC inbreds and developing inbreds for us at their research station in Carman. Several of our inbreds had very high and acceptable levels of resistance. Many of these inbreds were developed by AAFC for resistance to other leaf diseases such as common rust and northern corn leaf blight. This resistance will have to be confirmed in future screenings but we

did make some crosses at our winter nursery to develop several new families from which to select new inbreds with Goss's Wilt resistance and adaptation to MB.

The final objective of increasing overall research in corn in MB was accomplished by the hiring of Karin Rose, and the very successful acquisition of increased research funds for many different projects as well as large pieces of field equipment such as precision corn planters through the Grain Innovation Hub. The latter will be used to conduct more trials at many different locations in MB in the future.

BENEFITS TO CORN GROWERS:

The overall goal of this project is to deliver new corn genetics to the corn producers of Manitoba. The establishment of a corn breeding nursery in Manitoba will allow us to select genotypes adapted to Manitoba. This is much faster and more efficient than doing the inbred selection in Ottawa, where the AAFC corn breeding program is based, and then just doing experimental hybrid trials in Manitoba. This project is also greatly increasing the capacity of many public researchers in Manitoba to do corn research in many different disciplines. All of this will result in improved hybrids and farming practices for the Manitoba corn producer.

COMMUNICATION:

Dr. Reid has visited all of the 2014 experimental sites in Manitoba in the fall of 2014 prior to harvest. She also attended the 2015 CropConnect Conference to network with producers and researchers. She has also established AAFC Material Transfer Agreements to allow University of Manitoba researchers to access AAFC corn inbreds to be used in various research projects. In 2014, Karin Rose visited the Ottawa AAFC breeding nursery for one week in June to learn more about corn research. She returned for 2 weeks in July to learn how corn is selected at flowering time and hand-pollination in a breeding nursery and then again for one week in October to learn how corn is selected for harvest.

● ● ●

This project was funded in part by the Canada and Manitoba governments through Growing Forward 2, a federal-provincial-territorial initiative.