

Farmer Driven Solution – Developing Wheat for Western Canada

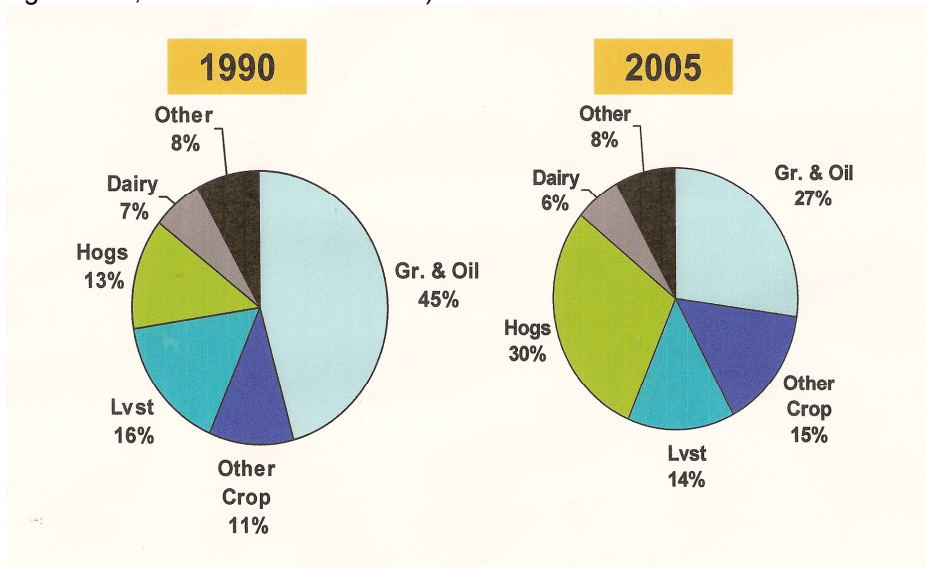
David Rourke

Western Feed Grain Development Co-op Ltd, Minto, MB R0K 1M0;
Email: david.rourke@wfgd.ca

■ Introduction

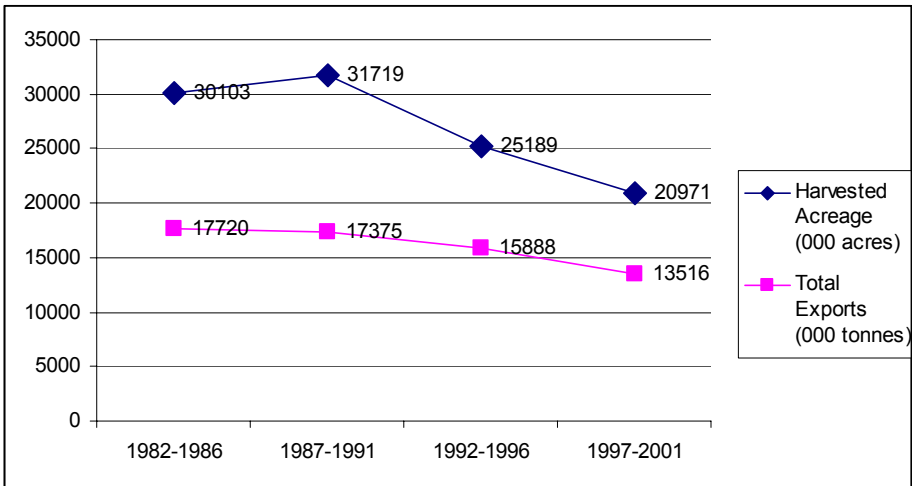
The state of agriculture in Western Canada has significantly changed in the last two decades. Decreasing farm receipts has led to a decrease in number of farms across the Prairies and diminishing rural communities. Grain and oilseed farm receipts dropped in Manitoba from 1990-2005 and these figures are mirrored in other Provinces, creating an unfavorable environment for the industry.

Figure 1. Farm Receipts, Manitoba, 1990 and 2005 (Source: Manitoba Agriculture, Food & Rural Initiatives)



As grain farms become fewer, the remaining farmers are looking to grow crops that are profitable and contribute to their bottom line. As shown in the chart below, Canadian wheat acres (excluding durum) have decreased steadily since 1987. Historically, wheat acres have been replaced with more profitable crops and this trend will continue as the wheat acres for 2007 were estimated to be below 15 million acres.

Figure 2. Wheat (excluding Durum) 5 Year Averages – Harvested Acres / Exported Tonnage (Source – Agriculture Canada, based on Canada Grains Council Annual Statistics)



■ Should we look for other alternatives?

The publication *Manitoba Agriculture Food and Rural Initiatives Crop Production Costs* (2007) states for wheat that the breakeven yield needed to cover operating and fixed costs was 41.9 bushels per acre. The breakeven yield to cover the total costs (includes labour) is 45.7 bushels per acre. Unfortunately, the approximate average yields in Manitoba and Saskatchewan are 34 and 31.8 bushels/acre, respectively. Of course, yields range throughout the provinces but it isn't encouraging to see that average farmers are unprofitable growing wheat. These figures are causing farmers to research higher yielding varieties that will increase farm gate receipts and increase the sustainability of their operations.

■ High Yielding, Fusarium Resistant Wheat Development

The demand for a consistent supply of feed wheat to be used in ethanol production and livestock production has grown and will continue to grow as the Canadian ethanol industry matures. Fusarium resistant, high starch, high yielding feed wheat is required for both of these industries to achieve success.

The need for this wheat has significantly increased in recent years due to the shift in the demand for renewable fuels and a major increase in the ethanol production capacity within Canada. Looking back two years ago, three ethanol facilities existed in Western Canada using a total of 3.61 million bushels of wheat. By the end of 2007 a total of six facilities will be using 41.3 million bushels of wheat. In this short time the acres needed to produce this wheat has increased by 835,000 acres. Several additional ethanol production facilities have been proposed for Western Canada and it is anticipated the number of proposals could increase in coming years. The combination of a country wide demand for a reliable feedstock, and lower availability of U.S. corn due to supplies being consumed within the U.S., emphasizes the need for dependable feed wheat cultivars.

Current winter wheat, hard red spring, and prairie spring varieties will not provide the industry with a reliable, superior feedstock because all of the current varieties are tailored toward export markets for human consumption. The development of a domestic use, starchy variety should not be a difficult task, except that there are currently no provisions in Western Canada that allow for registration of this type of wheat. Unfortunately, the efforts by both public and private plant breeders for over thirty years have been without success due to the limitations on registration imposed by the Canadian Wheat Board.

Given the current registration limitations and the unwillingness to change these regulations, the development of superior cultivars may lie in the hands of private initiatives. The Western Feed Grain Development Co-op (WFGD Co-op Ltd.) was established in December 2005 and has been actively working to develop cultivars that possess characteristics that will benefit the ethanol industry and the livestock industry. The Cooperative gives every farmer in Western Canada an opportunity to become a member and the group will collectively own the germplasm developed. Throughout development, breeders will not be concerned about Kernel Visual Distinguishability or export quality because the grain will not be destined for export facilities. Members will be informed of this restriction and will understand the negative consequences of the contamination of export wheat. The Co-op will work within the established variety registration framework if possible, however since this has the potential to be a closed Co-op, with specific end use and distribution only

to members, the likelihood of proceeding forward in one manner or another is extremely high.

■ Conclusion

WFGD Co-op Ltd. initial target for development is to provide lines that have high starch, fusarium resistance and a 30-40% higher yield than that of hard red spring wheat. This program will have real and meaningful results, but there is a substantial requirement for funding and upfront member commitment to ensure success.

Corporate contributions, membership fees, and government research grants will fund development of these cultivars and there will be no royalties charged. The breeding program commenced in the summer of 2005 and the group is anticipating a limited seed release in 2008-2009. WFDG Co-op Ltd is working to expedite the breeding program by using a variety of research facilities and techniques including greenhouses, growth rooms, growth cabinets, winter nurseries, etc. Three crosses were made in 2005, seven in 2006, and twelve further crosses made in 2007.

■ Websites for More Information

Agriculture Canada http://www.agr.gc.ca/index_e.php

Canadian Renewable Fuels: <http://www.greenfuels.org>

Manitoba Agriculture Food and Rural Initiatives Crop Production Costs 2007 Guidelines – Wheat
www.gov.mb.ca/agriculture/financial/farm/pdf/copcropproductioncosts2007.pdf

Manitoba Agriculture Food and Rural Initiatives
www.gov.mb.ca/agriculture/index.shtml

WFGD Co-op Ltd.; Website www.wfgd.ca; Toll free 1-877-250-1552