

APPLICATION TO THE CWB FELLOWSHIP PROGRAM FOR THE 2011-2012 ACADEMIC YEAR

Since 1976, the Canadian Wheat Board (CWB) has committed funds to encourage the development of agricultural research scientists in the long-term interest of western Canadian grain producers. Academic awards were created for students to study at the Universities of Alberta, Saskatchewan and Manitoba. Fellowships are available for students pursuing a Ph.D. or Masters degree in agriculture.

Given satisfactory academic and research progress, the fellowships awarded will be for up to a three-year period beginning in September 2011. For the 2011-2012 academic year, the levels of the awards for Ph.D. degrees are: Year 1 - \$18,000, Year 2 - \$20,000, and Year 3 - \$20,000. For the Masters program, the level of the awards are: Year 1 and Year 2 - \$16,500. These levels may be adjusted in the future.

Applications must be submitted to the Dean of Agriculture at one of the three Prairie universities that administer the program with the CWB (Universities of Alberta, Manitoba and Saskatchewan). Applicants are requested to apply for a CWB fellowship at the Prairie university at which they intend to study. Application deadlines will be established individually by each of the three participating universities.

The universities will forward fellowship recommendations to the CWB. The CWB will notify successful candidates.

Eligibility Criteria

1. Fellowships will be awarded on the basis of a proven record of outstanding academic achievement and research interest in areas of study directly related to wheat and barley production, marketing and utilization.
2. Any student pursuing graduate studies in these areas can apply for a CWB fellowship. Preference will be given to projects which address the research priorities described on the following page. However, proposals in other areas will be considered as well. The selection process will take into consideration the benefit to western Canadian producers.
3. Preference will be given to applicants from the University of Alberta, the University of Saskatchewan, or the University of Manitoba (as qualified in points 4 and 5 below). To qualify for a CWB fellowship, students must be enrolled in a Masters or a Ph.D. program.
4. With faculty and CWB approval, a student may spend a year or more at another institution during the program, provided he/she returns to complete the program at the university at which the fellowship is held.
5. In exceptional instances, and with CWB approval, the student will be allowed to pursue his/her studies abroad, upon demonstration that his/her educational requirements are not available in Canada.
6. Fellowships will be reviewed before the second and third years of the program. Progress in the program must be assessed by the student's supervisor. The progress report is due prior to the subsequent year's commitment for funding by the CWB.
7. The CWB fellowship student may receive concurrent awards (scholarships and fellowships). However, students who receive major awards, like an NSERC fellowship for example, are required to inform the CWB so their file can be reviewed. The CWB will determine if it is appropriate to maintain CWB funding or if the CWB fellowship program objective of encouraging agricultural research would be better served by supporting other unfunded projects.
8. Preference will be given to applicants who are either Canadian citizens or permanent residents.
9. Fellowship holders must be full-time students.

Research Priority Areas for the Canadian Wheat Board Fellowship Awards

(revised November 2010)

The following are the research priority areas that have been identified by the CWB Awards Committee, ranked in order of importance. These are meant to provide some idea of where the CWB would like to direct its research funds. However, students should not hesitate to advance proposals for research in other areas of interest to the wheat and barley producers of Western Canada.

1. **Research on mycotoxins (i.e. OTA) and microbial activity in Canadian grain:**

This research would focus on two aspects:

- Firstly, there needs to be research, at the grain storage level, linking moisture to the development of mycotoxins and microbial activity. The impact of moisture also needs to be quantified. The goal is to provide recommendations for improving the condition of stored grain.
- Secondly, there needs to be a supporting economic assessment that demonstrates the value of enhanced drying of grain beyond current recommendations. This aspect of the research would involve two steps: 1) identifying if enhanced drying adds value, and 2) determining if there is an advantage of moving payments to a dry matter basis.

2. **Railway Market Power:** Western Canadian farmers, when compared to global competitors in Europe, Australia, United States, Ukraine, Russia, and Argentina, are further from the ocean and are captive to one mode of transportation. Our global competitors often have competitive access to two and sometime three modes of transportation (truck, rail, and water). Simply put, it is not economical to move grain by truck to Vancouver or other ports when compared to the cost of rail transportation. This results in a situation where western Canadian farmers are often captive to either Canadian National or Canadian Pacific Railways. While it is true that some farmers have access to both railways, competition is limited by the price leadership model employed. This research would examine whether railway market power exists in Western Canada and what the impacts of this are to farmers. The research should consider the impact of having the government remove the revenue cap from the grain sector.

3. **Fusarium:** Fusarium has moved westward in recent years and is now a significant problem in areas of Saskatchewan. The causes of the movement and the types of fusarium present in Saskatchewan have not been fully studied. The relationship between fusarium types present in Manitoba and presence of different types in Saskatchewan also needs to be studied, especially with regard to the impact on end use quality for wheat and durum.

4. **Economic Modeling of Rent Seeking:** Today the CWB advocates with government and other agencies positions that are an overall benefit to western Canadian producers. For example, the CWB advocated and helped form a coalition of growers that examined government's ownership of hopper cars which resulted in a reduction in the revenue cap of close to 200 million dollars annually. Today the CWB together with other farm groups is advocating that

the government perform a costing review which is expected to reduce the revenue cap by 100 million per year. This research would try to measure the magnitude and cost/benefits of these advocacy efforts.

5. **Selecting durum varieties on the basis of carotenoid levels:** With growing interest in the nutritional benefits of various foods, it would be useful to examine carotenoid levels in Canadian Western Amber Durum (CWAD) germplasm. Anecdotal evidence from the Grain Research Laboratory suggests that, through indirect selection by breeding programs, there are interesting levels of carotenoid within existing CWAD lines. Additional research is required to determine how this can be best exploited to improve overall CWAD quality and/or develop unique germplasm for targeted niche markets.
6. **Climate variability and the impact on cropping systems** Recent record floods in Western Canada have outlined the need to study the impact of climate extremes on current and proposed cropping systems. What strategies of adaptation can be deployed to create a more sustainable and profitable system for western Canadian farmers?
7. **Black Sea grain trade:** Research is required into the potential evolution of the Black Sea grain trade in the coming decades – specifically, a comprehensive investigation into changing patterns of land use, productivity gains, infrastructure development, interaction of livestock industry and dietary patterns on grain supplies available for export, and government policies that may significantly alter the path of development.
8. **Producer cars:** Producer cars are an important competitive tool for western Canadian farmers. Farmers are able to reduce supply chain costs by utilizing producer cars and at the same time enhance competition among grain handlers. The two areas of producer car welfare for the farmer include the reduction in direct elevation savings (welfare for farmer loading the producer car) and the impact on the local market (increased trucking premiums at the high throughput elevators benefits producers who are not shipping producer cars). This research should examine and quantify the benefits of shipping producer cars. In addition, the research could consider examining why it is that over 95% of all producer cars are Canadian Wheat Board grains.
9. **Agri-meterological modeling of plant diseases:** A disease model – based on current agri-meterological data – is already available for fusarium head blight. With the CWB's expanding WeatherFarm™ project, there is an opportunity to provide additional modelling support for other plant diseases such as leaf spotting and leaf rust pathogens. Research gaps exist on appropriate model parameters as well as disease model validation for the eastern Prairie region. A project coordinated with our ongoing network development could enhance real-time based decision support systems for farmers in a rather quick and meaningful way.
10. **Linkages between foodgrain, feedgrain, and the energy market and implications for wheat markets in the future:** The surge in oil prices in 2008, combined with expansionary ethanol policy in the United States in particular, has highlighted the connection between corn prices and oil prices. Corn prices have historically provided a strong floor under wheat prices via potential for substitution in the feed grain market. With ethanol production continuing to expand steadily in a clearly supportive policy environment, this research would examine

whether a stronger link may mean demand and volatility from energy markets could spill over and alter the grain markets of the future.

11. **World Trade Organization (WTO) agreement:** If an agreement is reached in the Doha round of WTO negotiations, there will be important and far-reaching implications for western Canadian farmers. Research is required into potential market access gains for wheat and barley that might result from an agreement, as well as net changes in subsidy levels that could potentially result from the Doha round.
12. **Deregulation in the Australian wheat industry:** The Australian single-desk for wheat exports was removed July 1, 2008 - ending over 60 years of single desk wheat marketing from Australia. The Australian wheat industry has begun to adapt to the new marketing environment, but the transition away from a single-desk system to an open market has only begun. The ownership of grain handling infrastructure and assets is highly concentrated, regionally, to only a few companies. As a result, the Australian government wants to ensure that the economic welfare of farmers is not diminished and that the supply chain remains competitive in the absence of the single desk. In response, a comprehensive set of industry and government regulation has been developed and modified. The outcome of grain industry deregulation in Australia can offer some useful insights in the event that the Canadian grain industry faces the same reality. Further research could evaluate the policy development and enforcement in Australia and then apply them in the context of the competition policy required for Canada in the absence of a single desk.
13. **Grain exchanges:** Historically, grain exchanges have been not-for-profit institutions that exist for the sole purpose of accurate price discovery. The goal of a futures market is to provide a mechanism for information exchange and price discovery. As the futures contract moves to expiry, the cash and futures price are supposed to converge. In other words, by the time the month of March rolls around, the March futures price should be equal to the cash price for the commodity that is being priced. Over the past two years, lack of convergence in agricultural futures markets has been the typical. The Commodities Futures Trading Commission (CFTC) has pressured the US exchanges to force convergence by altering the contract design. An examination of the mechanisms to force convergence needs to be studied to determine the potential for solving this problem and present any adverse impacts from the changes to the futures contract structure.
14. **Environmental impact of cereal grain production in Western Canada:** What is the carbon footprint of cereal production in Western Canada compared to products from other origins? Throughout the world, people are becoming more and more conscious of the impact they have on the environment. Grain production is no different. The customers for western Canadian wheat and barley want to know how our production system compares to other agricultural production around the world. This research would need to look at the entire production lifecycle, from when plans are first made to seed a given crop until it is delivered to the customer. It would provide information that would be useful in terms of demonstrating agricultural sustainability of our cropping systems to certain customers and branding of western Canadian grain. It could also serve as a guide to farmers seeking ways to reduce their environmental footprint.

15. Food barley fractionation: The fractionation of food barley into potential value-added constituent parts is an area of considerable promise. However, it is as a flour product that it will most likely make a large-volume impact in the North American diet. There has been significant commercial interest since the proclamation of the USDA health claim, looking for research, pre-pilot and pilot studies demonstrating the use of barley flour in commercial processes. The CWB is currently working on a project with Tim Horton's that will hopefully lead to the inclusion of barley in some of this company's products. There is an opportunity for university research students to work on applied research projects with outside partners such as the Grain Research Laboratory (GRL) and Canadian International Grains Institute (CIGI) to develop practical applications and products. Of particular interest to the CWB would be projects that use large amounts of barley versus smaller, very high-value fractions. In this vein, research showing the beneficial interactions between barley starch (waxy, non-waxy, etc) and wheat starch in leavened and non-leavened bread as well as in noodles, pasta and other products would be very desirable.

8. If not now attending university, give present occupation and location of employment.

9. Scholarships and Awards: (Include all scholarships, bursaries, fellowships, prizes, and other award monies received or to be received during the next twelve months, beginning with most recent.)

Award	Where Held	Starting and Termination Dates
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10. Publications: (including theses, research reports, and journal articles. Attach reprints, reports, or abstracts if available.)

Author	Title	References
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11. Technical Experience: (research-related job experience other than thesis research)

Date	Institution	Subject	Supervisor
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12. List skills in operation of specialized scientific and technical equipment or processes.

13. Courses taken toward present graduate degree:

Course Title	Instructor	Mark
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14. Expected date of completion of present degree:

15. Expected starting date of Ph.D. or Masters:

16. Letter(s) of reference: (Identify individual(s) requested to submit separate letters of reference.)

17. Outline of proposed research: a) Title/Subject Area; b) Research Objectives; c) Anticipated Supervisor(s)

18. Practical Application: Indicate how the findings of the proposed research will benefit agriculture in Western Canada, including time needed for benefits to accrue.

Permission to obtain / use photo:

By signing below, I agree that if I am selected for a CWB fellowship I will provide the CWB with a high-quality, colour digital photo of myself to be used for advertising in community and agricultural publications.

(Note that the photo must be supplied at the recipient's own expense no later than 30 days after being selected for the award.)

Fellowship recipients will also be required to provide their Social Insurance Number and a blank cheque in order to process their payments.

Date

Signature