FALL 2010

OMAFRA – U of G Partnership KTT Funding Program - Approved Projects Fall 2010

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Successful Projects Fall 2010

Wayne Caldwell - The Ontario Rural Landowners Stewardship Guide: Extending Its Application Across Rural Ontario - Review, Refinement and Promotion

Executive Summary:
In 2008, with funding from OMAFRA's New Directions program, the "Ontario Rural Landowners Stewardship Guide" was developed and released. This Guide was one of the deliverables of the project Developing Strategies to Engage Agriculture and Recreation Along the Lake Huron Shoreline: A Community Based Approach to Solving Water Quality Issues. This guide was developed using the Environmental Farm Plan as a template and is intended to assist rural non-farm property owners with identifying and remediating environmental issues on their property. The guide was developed with interchangeable parts that would allow it to be easily altered to fit a localized context. In this regard, the use of the Guide has exceeded our expectations. There are now multiple versions ranging from Lake Simcoe to Lake Superior to a specialized version for horse owners. The purpose of this KTT application is to continue to spread the use of the Stewardship Guide, to identify who is and who is not using it (and why), to link together the different agencies and groups that are using it (Community of Practice) and to make minor revisions to keep it current and enhance on-going use.

There are several objectives of the project:

1. Review the progress of the Ontario Rural Landowners Stewardship Guide in informing and educating rural non-farm property owners in being good environmental stewards;
2. Examine why or why not Stewardship Councils and Conservation Authorities across Ontario have adopted the guide for specific use in their locales;
3. Through contact with Stewardship Councils, Conservation Authorities and user groups define what has worked and what requires additional assistance to make the guide useful to all;
4. Based on input and feedback, make revisions to the Guide, and promote its use to Stewardship Councils, Conservation Authorities and appropriate NGO's in Ontario; and
5. To link together those who are using the Guide in a Community of Practice.

Researchers will work with those who are currently delivering the guide to establish a 'community of practice'. This networking form would consist of existing and future Guide organizational leaders who will share experience, successes and challenges with a goal to enhance overall delivery and content of the Stewardship Manual.

Glen Filson - Creating Awareness about the Demand for Locally Produced Ethno-cultural Vegetables: discovering barriers and opportunities to this niche market's entry

Executive Summary:
This KTT project will improve capacity to produce many ethno-cultural vegetables (ECV) not presently available locally. Our deliverables will be greater awareness of the health promoting qualities of ECV (e.g. antioxidant activity related to diabetes), more fresh ECV, and greater domestic production. We will conduct a workshop at the Arboretum with farmers, ECV wholesalers, retailers, academics and AAFC/OMAFRA representatives on health, demand and production techniques. An ECV website and

Facebook page will contain podcasts of workshop proceedings, factsheets on vegetable production, transportation, market linkages with GTA ethnic stores, the Toronto Food Terminal, and collaboration opportunities.

A multi-media KTT approach that employs electronic media will explain the demand and agronomic practices for ECV (e.g. bok choi, okra, bitter melon, smooth amaranth). The GreenBelt Food Guides for South Asians and Chinese are good but they don't show demand statistics and production techniques. By working with Simcoe/Vineland Research Stations, FarmStart, the GTAAAC and the OFVGA we will combine KTT with management production information strengthening the value chain.

Laura Van Eerd - Cover crop decision-making tools

Executive Summary:
Encouraging greater use of cover crops, as a proven Best Management Practice, supports advances in the OMAFRA strategic priority areas of a thriving agricultural system and healthy environment through improved soil management and reduced movement of contaminants. The ideal species and management practices for cover crops are highly specific to soil, climate and management system. This project seeks to address the information gap through the development and validation by Ontario growers of the Ontario module of the on-line cover crop decision tool developed through the Midwest Cover Crop Council (MCCC). In the past, much of the most successful dissemination of knowledge has been by word of mouth; farmers who adopt new practices are often the center point for a circle of adoption in their area. The proposed KTT activity will be more successful than previous method(s) because the MCCC decision tool allows growers to input their specific soil, drainage, and crop information as well as goals (i.e. minimizing erosion, forage for livestock, adding organic matter) to obtain custom-made cover crop recommendations. The proposed project will effectively translate knowledge via traditional and innovative means by a provincial cover crop workshop and Cover Crop Innovator profiles, respectively. The proposed project will also evaluate present and future (i.e. current agricultural undergraduate students) growers, crop consultants, and agribusiness personnel as to their preferred information sources/locations on cover crops. Overall, the project will help to speed the adoption and integration of cover crops into a greater portion of the Ontario landscape because the information is relevant to all parts of the province, a variety of farming systems and backed or validated by research and grower experience.

Bonnie Mallard - Knowledge Transfer of the High Immune Response Technology to the Dairy Industry and the Dairy Support Industry as a Best Management Practice to Improve Animal Health

Executive Summary:
The High Immune Response (HIR) technology is a testing procedure and a management tool with potential to significantly improve dairy health, and the quality and safety of dairy food products. This will be done by enhancing disease resistance via improved immunity, and by reducing antibiotic use and disease treatment costs. Research indicates that HIR animals are at a lower risk for developing disease compared to animals that have average or low immune responses. To increase awareness and uptake of HIR, funds are required for KTT to 1) prepare and distribute USB/DVDs with information on HIR technology and its benefits; 2) Develop content on HIR for social media networking and for the AgriFood

and Rural Link Destination website; 3) Showcase HIR to: dairy and specialty breeding groups (rodeo bulls, show cattle), veterinarians and government officials at regional and national dairy symposia and seminars; and 4) conduct workshops with Ontario producers and veterinarians to demonstrate the theory and practice to transfer HIR knowledge; and 5) Conduct follow-up surveys with producers and breeding groups, and veterinarians to evaluate the effectiveness of the program and the desire to use or be an advocate for HIR.

Art Hill - Enhancement of the Food Safety Network at the University of Guelph

Executive Summary:
The Food Safety Network (FSN) at the University of Guelph is a popular internet site and call center that informs professionals and consumers about current and emerging food-related risks in the context of relevant literature and recent research, especially that originating at the University of Guelph. As such, FSN is already an effective KTT tool. The KTT activity proposed for funding under the KTT program is a detailed assessment of FSN to determine how to enhance its scope and relevance to specific target audiences. During the past 12 months, FSN received an average of 7705 hits per day and 993 visits per day. Based on monthly statistics, the duration of an average visit ranged from 3.26 to 4.5 minutes. Who are these visitors and which parts of the website are they visiting? Is the current internet site the optimal mode of delivery or are there alternatives that are more effective to reach the FSN target audience?

The proposed KTT project will determine the optimal platform to host the FSN, demographics of users as well as the nature of user visits. Tools such as Google Analytics will be used to measure the web traffic, the length of time that users have remained on a page and how they interacted with the content. This information will allow us to improve the site to meet current and evolving needs. It will also help us to plan an expansion of FSN beyond food safety into a Food Confidence Network to address other areas of food security such as animal health and welfare and environmental sustainability.

Alan McKeown - Developing Educational Resources for Specialty Crop Production in Ontario

Executive Summary:
Each year, the University of Guelph and OMAFRA receive over 500 enquiries about specialty crops. Considerable research into specialty crops has been done by the University of Guelph, OMAFRA and other institutions, but has not been compiled and made permanently available to growers. The proposed project will synthesize this research and make it available using a dynamic, interactive, educational resource permanently available on the OMAFRA website. It will cover the marketing and production of approximately 100 non-traditional (e.g. ethnic vegetable, industrial/bioenergy, nutraceutical) crops. A workshop on Non-traditional Crops for the Health Market will also provide growers with practical information on growing and marketing specialty crops. By synthesizing the results of multiple research projects into a single resource, Ontario growers and entrepreneurs will be given a valuable tool for making informed decisions about production of non-traditional crops and consequently for diversifying farming operations. This may help foster economic development by providing a source of high-value, Ontario grown crops for health, ethnic and specialized markets. This will support OMAFRA's priority of a Thriving Agriculture and Food Sector and build on the KTT plans of over 40 research

projects, totalling approximately $1.5 million of direct funding and spanning a number of OMAFRA Research Theme Priorities, including Bioeconomy, Food for Health, Production Systems and Product Development and Enhancement through Value Chains. The module could also serve as a teaching tool in University of Guelph horticulture courses.

Amar Mohanty - Bioeconomy Seminar Series and Innovative Outreach Program for Wider Dissipation of Knowledge

Executive Summary:
Bioeconomy for industrial uses is the wave of the future. This new wave needs better understanding of the opportunities it creates, as well as the trade-offs involved for businesses to invest in R & D and market their products. It is important to know society's acceptance for any technology to become viable. This necessitates a need for regular discussion and timely information exchange among the stakeholders of bioeconomy. This project looks to achieve the wider dissemination of knowledge through a bioeconomy seminar series. This project will conduct a 'Bioeconomy Seminar Series' that will benefit the bioeconomy industry of Ontario through access to expertise from national and international experts.

This KTT project will add value and synergy to the R & D fundings already being invested by Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), and other funding agencies like Natural Sciences and Engineering Research Council of Canada (NSERC), Networks of Centres of Excellence (NCE), Ministry of Research and Innovation (MRI), Hannam Soybean Utilization Fund (HSUF) at the BDDC and other collaborating laboratories here at the University of Guelph.

Kees de Lange - Enhanced effectiveness of animal research KTT

Executive Summary:
There is tremendous activity and productivity in the animal research programs at the University of Guelph. Yet, there is no co-ordinated effort to extend research findings to potential users and stakeholders in Ontario, such as livestock producers, policy makers, consultants to the industry, OMAFRA extension personnel, horse industry and society at large. Also, with the increased emphasis on individual research projects under the OMAFRA and University of Guelph Agreement, the challenge to effectively co-ordinate KTT activities is becoming larger and more important.

Across animal research species (dairy, poultry, pork, beef, fish, horse, sheep, goats) there are many KTT activities, many of which are sponsored by commodity groups and industrial partners, with an estimated financial value in excess of $200,000 per year. However, even with these resources, the activities are too limited to fully exploit the various avenues, mechanisms and media that are available for wide distribution and rapid uptake of relevant research findings. Moreover, limited attempts have been made to evaluate the effectiveness of extension activities, and to improve the efficiency of knowledge, translation and transfer of animal research findings.

We propose to mount a harmonized effort on behalf of, and involving, the livestock species coordinators to engage a 'research information officer' to improve the extent and efficiency of the KTT efforts for animal research results. Proposed activities include:

1. Develop an inventory of current KTT activities for research in the various animal species
2. Conduct a comprehensive assessment of the effectiveness of current KTT activities
3. Fully exploit alternative avenues and media that are available for wide distribution and rapid uptake of relevant research findings
4. Contribute to the further development of the web-based system that is underway by the Office of Research and supported by the University of Guelph and OMAFRA partnership agreement, by contributing relevant content about animal research
5. Actively seek feedback about the impact of KTT and research findings

The ultimate outcomes will be increased awareness of animal research at the University of Guelph, increased and more rapid uptake of research findings, and a more rapid move towards cost-effective, sustainable production of high quality (including value added and health promoting) animal foods and a viable horse industry that contributes to the well-being and wealth of the people in Ontario.

Linda Hawkins - Celebrating partnership: Delivery of a Community-University Tradeshow

Executive Summary:
This tradeshow will present successful strategies and outcomes of current community –university partnerships, demonstrating the value and importance or partnership in research and outreach to a broad audience. Specifically, this tradeshow will assist in highlighting a) the partnership between OMAFRA and the University of Guelph, and how the partnership is helping the Ministry meet its strategic priorities through the breadth and depth of the research programs under way; and b) highlight the additional variety of community-university partnerships for research and other purposes supported across the university and community (broadly defined). Participants, presenters, funders and their broader networks will gain an appreciation for the importance of collaboration, gain new insights into how successful partnerships are managed in actual practice, and be inspired by the range of possibilities in this important work, generating rich research potential. In celebrating successful partnerships, this showcase will directly link partnership development, support and outcomes for researchers and audiences. The knowledge shared from this public forum will facilitate increased knowledge transfer among researchers, research users, and their communities. Participants, invited audiences and others will be encouraged to explore possibilities to transform knowledge into action, and future research collaboration for increased impact of University-OMAFRA partnerships among others.

Michele Guerin - Development of a Poultry Catching and Transport Welfare Decision-Tree - Should this bird be loaded?

Executive Summary:
Public concern for animal welfare continues to place tremendous pressure on the poultry industry to implement and enforce welfare standards; humane transport is currently an issue of high priority. A 2010 report by the World Society for the Prevention of Cruelty to Animals detailed high numbers of “dead on arrivals” in the poultry industry emphasizing the need for better decision-making when poultry are loaded for transport. Decision-trees, which assist producers and truckers with decisions around fitness for transport, are widely used for red meat species.

There is a fervent need for education on “best practice” surrounding fitness for transport in the poultry industry. Frequently, disparities between producers and catchers arise when determining which birds are unfit for transport. However, there is a commitment among all sectors of the poultry industry to address and find solutions to this issue. To-date, there are no materials available to provide training for the poultry industry.

The KTT activities to be implemented in this project are to develop a user-friendly decision-tree for poultry producers, catching crews, transporters and regulators to protect bird welfare. This project will ‘accelerate the transformation of knowledge into use’ by providing the target group materials that will include a decision-making tree, flip charts and pocket books with pictures and descriptions of birds that should and should not be loaded. Materials will be delivered to industry through the four poultry marketing boards, service sectors and presentations to industry.

Jonathon Schmidt - Delivering High Skills Programs in Agriculture, Horticulture, Food and Environment: Professional Development Workshop Series for secondary school educators

Executive Summary:
Through a series of professional development workshops, these KTT seminars will provide a forum to which research can be shared and disseminated to a broader audience, specifically high school educators. These workshops will enable an opportunity for University of Guelph and OMAFRA researchers to engage in dialogue with the targeted audience, educating these stakeholders about innovative research being conducting in five key areas that align with research themes identified as part of the UOG/ OMAFRA partnership, specifically:

- *Bioeconomy* (including biochemicals, value added bioproducts)
- *Environmental sustainability* (e.g. management of natural resources)
- *Food for health* (e.g. consumer education about food and health)
- *Sustainable agriculture* (e.g. animal health and welfare)
- *Healthy communities* (e.g. policy to support the development of healthy communities)

This educational outreach has the potential for the following:

- Provide knowledge that can be integrated into the high school educational curriculum
- Provide a lens to recognize the career prospects in the five key areas mentioned above
- Clarify knowledge misconceptions and or uncertainties surrounding the five key areas

Ultimately, this knowledge dissemination is intended to stimulate educators to incorporate up to date agri-food and sustainability research into high school curriculum development and delivery, which will promote student interest and career development in the aforementioned five key areas.

Karen Landman - Building Regional Food Hubs in Ontario through effective knowledge translation and transfer: Creating resilient Ontario communities

Executive Summary:
While Food Hubs are acknowledged to provide the potential for critical links in local food value chains, little is known about the specifics of emerging and existing food hubs in Ontario and elsewhere and the 'push-pull' between consumers and research on local food community resilience. This project will fill that gap in two ways. First, we will conduct a scoping exercise to survey existing innovative initiatives in Ontario that demonstrate various dimensions of food hubs through a models and best practices report that identifies lessons learned. This report will build on existing OMAFRA resources (e.g. Models and best practices for local food in Ontario, Landman et al. 2009). It will include: a survey of established and emerging initiatives across the province; case studies of Ontario leaders identified through programs including the Premier's Award for Agri-Food Innovation Excellence; and a review of the international academic and grey literature of food hub success stories from other jurisdictions. This report will identify characteristics of food hubs including the roles they play within local food chains and provide detailed information about their development and operation. Second, we will develop a toolkit that interested groups can use to scope out the potential for food hubs in their communities. We will test the applicability of the toolkit through three focus groups (one in each of Wellington and Frontenac Counties, and the third in Sudbury).

Alejandro Marangoni - Delivery of Functionality International Conference IV: Ontario-Agri-Food Industry Showcase to the World

Executive Summary:
The University of Guelph will host a high-profile international conference entitled "Delivery of Functionality IV" in August of 2011. This is a bi-annual scientific gathering of top academic and industrial scientists from around the world in the area of nutraceuticals and biodelivery. Many commercial representatives from multinational corporations as well as graduate students and research staff attend this gathering as well. It is the purpose of this proposal to facilitate the attendance of several top academic and industrial scientists in the world to this meeting. Besides presenting scientific material for the conference, pre-arranged meetings and consultations between these experts and representatives from various Canadian Agri-Food sectors (agrarian, OMAFRA-funded academics, industry and government) will be arranged. The presence of this world-class expertise in Guelph will give the Ontario and the Canadian Agri-Food sectors a unique opportunity to access the expertise of these individuals during the conference.

During the course of the conference, we propose to organize one-to-one sessions between the visiting scientists and several food manufacturing companies – a "Meet The Researcher" opportunity- to address pressing needs in the area of Delivery of Functionality in Foods. This unique 1:1 interaction addressing specific industry issues will provide the Ontario Food Processing industry a unique opportunity to gain competitive advantage in emerging fields. Thus, the first specific focus of this KTT project is to enable the organizers of the conference to defray a small portion of the travel expenses necessary to bring these experts to Canada as well as pay for expenses incurred during the course of the described extension activities.

Another aspect of this conference is to market Ontario research to the multinational food manufacturing community. This meeting is heavily attended by industry representatives. I believe it represents a unique opportunity to showcase and market our research to potential customers.

Peter Kevan - Best Management Practices for Pollination & Pollinators: Promoting & Sustaining a Crucial Ecosytem Service

Executive Summary:
Pollination and pollinators are crucial to agricultural and natural productivity yet are in jeopardy around the world, no less so in Ontario. The proposed project involves the creation of living e-document that is directly and multisectorally aimed at KTT for best management practices for crop pollination in Ontario. The targeted synthesis will focus on the pollination requirements for the range of crops grown in Ontario, from oil seeds to modern greenhouse vegetable production, and will provide much needed information on current cultivars and modern cropping practices. The e-document will also form the basis of a series of directed bulletins and fact sheets, each targeting one of Ontario's most important crops. The "living" nature of the document will allow it to be continually updated and improved as new information becomes available. Moreover, it will also lay the foundation for a more comprehensive BMP guide that will address the full spectrum of topics related to the promotion, conservation and management of pollinators and pollination in agricultural and surrounding environments.

Eric Lyons - Maintaining sustainable sport opportunities in rural communities by communicating new research in turfgrass management on IPM and pesticide free turfgrass management

Executive Summary:
Recent provincial legislation regarding pesticide use on turfgrass has impacted the methods that can be used to maintain safe athletic fields for sport. The goals of this project are to improve and maintain the quality of rural athletic fields and school fields in response to the provincial ban of the application of traditional pesticides to turfgrass through education of rural turfgrass managers. Traditional KTT in turfgrass management has focussed on urban areas where the largest populations and number of athletic fields and golf courses are located. This project uses an existing KTT partnership of the professional organizations, OMAFRA, ROMA and the GTI as well as draws upon additional UoG expertise in capacity development and extension and centers located closer to rural communities such as the Regional Equine and Agricultural Centre of Huron to reach out to rural turfgrass managers with an educational program that will allow them to comply with provincial legislation. Specifically, the project focuses on promotion and outreach to the rural communities and provides affordable and time efficient instruction to the managers of rural school grounds and athletic fields. The three components of the programs will be: 1) training of trainers; 2) networking of trainers/experts; 3) training/learning material production and distribution.

Anna Crolla - Best Management Practices for Manure and Organic Waste Treatment Technologies: Use of Videos, Workshops and Research Notes to Enhance Adoption of Technologies

Executive Summary:
The KTT activities outlined in this proposal will support the uptake of treatment technologies at the farm/operational scale, including: anaerobic digestion (manures and other organic inputs, both on-farm and off-farm), constructed wetlands (manure runoff and septage) and composting (manures and organic wastes). The assessment of these technologies in comparison to the baseline case of storage and land application has been investigated in two OMAFRA/UofG Research Program projects (026533 and 026577), and can be used for policy development. Outcomes from Chris Duke's project on GHG assessments from on-farm anaerobic digester systems will also be included in the knowledge transfer. Videos, workshops and research notes will be used to demonstrate the Best Management Practices (BMPs) and design recommendations that have been developed from the research work around these technologies; including economic assessments and environmental impacts for each technology. Conferences (e.g. GTM and OOWA), the International Plowing Match and Rural Expo 2011 and partner websites will be used to showcase the videos, workshops and research notes. The target audience for the KTT activities include researchers, policy/program analysts, farmers, engineers and other industry stakeholders (e.g. AgriEnergy Producer's Association of Ontario (APAO)). The partnership of researchers with OMAFRA engineers and program analysts, farmers and industry is crucial in demonstrating the environmental and economic benefits of these technologies, which supports the OMAFRA mandate of increasing the adoption of these BMPs on Ontario farms and rural communities. The increased knowledge and adoption of these BMPs will help with policy/program development by creating clarity in applications for nutrient management strategies, where changing nutrient characteristics from treatment technologies can be properly addressed, such as considering N2O losses, better crop utilization, new land application rates, setbacks and odour management. The results from this project will also be reviewed with the Ontario Ministry of Environment (MOE) and presented as normal standard practices to be included in Renewable Energy Approvals (REAs).