KTT Panel

Knowledge Translation and Transfer (KTT) Success Stories: KTT through Innovation and Collaboration
Rebecca Hallett
School of Environmental Sciences
APHID ADVISOR:
the path from lab bench to smartphone

REBECCA HALLETT

School of Environmental Sciences
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the path from lab bench to smartphone

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School of Environmental Sciences
What is the project about?

About this App

- Aphid Advisor is a pilot decision-making tool to help determine whether an action is warranted for control of soybean aphids (*Aphis glycines*) on soybeans.

- This app uses both aphid and natural enemy numbers, as well as expected population growth rates, to indicate whether there are enough natural enemies to keep aphid populations in check or if an insecticide application may be needed.
Who is the intended audience(s)?

- Ontario Soybean Growers
- Crop Scouts, Consultants
- OMAFRA Extension Personnel

www.aphidapp.com
What was the need for this project?

- Given complexity of natural enemies and their relative impacts on soybean aphid numbers, a simple way of implementing the dynamic action threshold was needed.
- Hand-held disk calculators were well-received, but required user to perform some calculations.
- Optimise and reduce pesticide applications.
What KTT methods/tools are used?

- Smartphone app
- Survey of potential users
- Supported by extension presentations prior to app development
- App demonstrations once launched
- Twitter announcements, blogs, video, etc
Impact of the project?

- Launch of Phase 1 app in Sep’11 generated widespread interest

- Timing of launch limited number of users in first year (award timing)
Key learnings from the project?

- Different user groups have different needs
- Different contributors have different needs
- Different perspectives, habits and/or limits that may affect how tool is designed, what are seen as priority areas along the way
- Process and tool need to work for everyone
Acknowledgements

- Christie Bahlai
- Yingen Xue
- Art Schaafsma
- Cara McCreary
- Andrew Frewin

Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada
Ontario Soybean Growers
Agri-Food and Rural Link
Michele Guerin
Department of Population Medicine
SHOULD THIS BIRD BE LOADED?
DEVELOPMENT OF A POULTRY LOADING DECISION TREE
1. Public perception: consumer concern with farm animal welfare
2. High numbers of **dead-on-arrival (DOA)** birds and carcass condemnations at the processing plant. Dead-on-arrival birds represent those whose health was too poor to endure the stress of transport.
3. Penalties for violating the **Health of Animals Act**
   - Fines increased: $1,300 to $10,000
   - Repeat violators: up to $15,000 and name posted on CFIA website
THE INTENDED AUDIENCE

- All parties involved in the catching, loading, and transport of poultry to slaughter

1. Producer
2. Catchers
3. Haulers
4. Processors
WHAT’S THE PROJECT ABOUT?

• To create a decision tree (DT) and accompanying educational resources:

1. Improve the welfare of poultry

2. Increase consensus between the different parties when deciding whether a bird should or should not be loaded
KTT METHODS/TOOLS USED

SHOULD THIS BIRD BE LOADED?
A guide for preparing, loading, and transporting poultry

DO NOT LOAD
DO NOT TRANSPORT

- Weak and/or not alert
- Dark red, pure, or black comb or wattles
- Discharge from eyes/ear/throat
- Swollen head/throat
- Bleeding from nictitating membrane or open wounds
- Drooping wings or neck
- Large tumor or fat lymph node
- Serous or purulent discharge from eyes or ears
- Sudden change in behavior (such as aggression)
- Inability to walk or stand
- Unable to rise or walk due to physical abnormality or injury

Guidelines for Dealing with Poultry

Identification of Sick or Injured Birds

- Weak, not alert
- Emaciated
- Broken leg
- Unscathed head
- Crossed Combs
- Unable to walk
- Unable to move due to physical abnormality or injury

Environmental Considerations

- Maximum Load & Transport
  - Nursery
    - Broiler: 13 kg/pen
    - Turkeys: 36 kg/pen
  - End of Lay Time
    - Broiler: 17 kg/pen
    - Turkeys: 52 kg/pen

- Maximum Density
  - Nursery
    - Broiler: 34 birds/m²
    - Turkeys: 21 birds/m²

- Factors to Consider
  - Duration of transport
  - Time of day (feeding or evening)
  - Weather at lay time
  - Handling and loading
  - Density

- Recommended Code of Practice for the Care and Handling of Farm Animals
  - Temperature should be maintained at 2°C to 5°C for all birds, except end-of-lay turkeys, which should be transported at 0°C.
  - Rearing must be consistent with the Code of Practice for the Care, Nutrition, Health, and Welfare of Turkeys.

Producers Ensure Your Birds WILL Be Loaded!

1. Identify
   - Identify compromised birds during online flock monitoring.

2. Cull
   - Daily culling improves flock efficiency and reduces the need to euthanize large numbers of birds.

3. Dispose
   - Refer to provincial regulations for methods and protocols for proper disposal.
EXPECTED IMPACT & TIPS

1. The DT and accompanying material will be in every truck and barn in Ontario

2. Questionnaire to evaluate the use of the DT by the industry (summer)

1. Involve all parties early in the process and at EVERY opportunity

2. Identify knowledge gaps ASAP and find the answers

3. Set meeting and training dates far in advance
Sarah Thomson

Poultry Industry Council
Biosecurity
From Farmers For Farmers

Project Focus:
- Develop a tool that encourages poultry producers to discuss and apply useful methods for enhancing their biosecurity programs
- Involve student poultry clubs, faculty, industry and farmers in the development process

Intended Audience:
- Poultry Producers, Poultry Service Industry

The Need:
- Lots of biosecurity recommendations available for the poultry industry
  → Messaging is not usually very engaging
- Farm visits are a biosecurity concern
The KTT Solution

- Engage with students to develop:
  - Questions to ask farmers and industry
  - A video footage outline

- Gather industry experts to contribute tips, recommendations and farm footage for the video

- Create a fast paced, engaging video that presents opinions and experiences from respected individuals from the poultry industry

- Extra Footage – able to create ~20 short youtube clips that provide really great information that did not fit into the full video
Biosecurity

From Farmers For Farmers

Project Impact
- Development of a great tool for Industry
  - Dispersed nationally to poultry producers and the service industry
  - Available on the web
  - Featured during the Innovations Conference and Producer Updates

- Capacity Building
  - Opportunities to promote the poultry industry to students
  - Students able to apply academic knowledge to solve a real-world problem
  - Involvement in networking opportunities

- Faculty Benefits
  - Enhance ties with industry partners and opportunity to involve students beyond the classroom
  - Farm visits allowed for direct conversations with farmers that spark ideas for new research projects
Lessons Learned

- Large Time Commitment
  - Organizing and Coordination between partners and students
  - Fall and Winter semesters fly by

- Need to have clear objectives, milestones and workplan to ensure everyone can be involved with as much of the project as possible

- Assign groups of students with specific tasks
  - Helps with time management
  - Encourages participation from everyone

- Collaborative KTT initiatives result in unforeseen benefits!
Biosecurity
From Farmers For Farmers

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sthomson@poultryindustry council.ca
519-837-0284

View the video from our website: www.poultryindustry council.ca

Coming together is a beginning; Keeping together is progress; Working together is success. - Henry Ford
Mai Pham

Department of Population Medicine and Lab for Foodborne Zoonoses, PHAC
Developing capacity for KTT in agri-food public health

Project leads: Dr. Andrijana Rajić & Dr. Scott McEwen
Project team members: Mai Pham, Lisa Waddell, Dr. Barbara Wilhelm, Dr. Ian Young & Judy Greig
<table>
<thead>
<tr>
<th>Project #1</th>
<th>Development of a scoping review framework</th>
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<tbody>
<tr>
<td>Project #2</td>
<td>Development of a user-friendly ‘summary of findings’ table tool for systematic reviews-meta-analyses</td>
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<td>Project #3</td>
<td>Development of a framework for using scoping-systematic reviews in combination with quantitative risk assessment (and decision analysis)</td>
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<tr>
<td>Project #4</td>
<td>Evaluation of knowledge and attitudes of agri-food professionals towards the utility of SR-MA and KTT</td>
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## What are scoping reviews?

Type of literature review that aims to rapidly ‘map’ the relevant research in a field of interest.

<table>
<thead>
<tr>
<th></th>
<th>Scoping review</th>
<th>Systematic review</th>
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</thead>
<tbody>
<tr>
<td><strong>Study question</strong></td>
<td>Often broad</td>
<td>Focused</td>
</tr>
<tr>
<td><strong>Search strategy</strong></td>
<td>Systematic &amp; transparent</td>
<td>Systematic &amp; transparent</td>
</tr>
<tr>
<td><strong>Inclusion/exclusion criteria</strong></td>
<td>Flexible</td>
<td>Defined a priori</td>
</tr>
<tr>
<td><strong>Study appraisal</strong></td>
<td>None/minor</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Synthesis</strong></td>
<td>Typically qualitative</td>
<td>Often quantitative</td>
</tr>
</tbody>
</table>

(Adapted from Armstrong et al., 2011)
### Example: scoping review ‘evidence map’

<table>
<thead>
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<tbody>
<tr>
<td><strong>Lettuce</strong></td>
<td></td>
<td></td>
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<tr>
<td>Prevalence</td>
<td>87</td>
<td>71</td>
<td>123</td>
<td>44</td>
<td>34</td>
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<tr>
<td>Risk factor</td>
<td>161</td>
<td>9</td>
<td>88</td>
<td>84</td>
<td>22</td>
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<tr>
<td>Intervention</td>
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<td>42</td>
<td>65</td>
<td>18</td>
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<tr>
<td><strong>Cabbage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevalence</td>
<td>32</td>
<td>21</td>
<td>43</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Risk factor</td>
<td>35</td>
<td>22</td>
<td>35</td>
<td>30</td>
<td>4</td>
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<tr>
<td>Intervention</td>
<td>17</td>
<td>11</td>
<td>18</td>
<td>14</td>
<td>4</td>
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<tr>
<td><strong>Herbs</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Prevalence</td>
<td>24</td>
<td>22</td>
<td>28</td>
<td>17</td>
<td>8</td>
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<tr>
<td>Risk factor</td>
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<td>23</td>
<td>12</td>
<td>13</td>
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<tr>
<td>Intervention</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
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(Ilic et al., 2012)
Project #1 overview

Scoping review #1: Identify/characterize published scoping reviews
(Pham et al., in progress)

Scoping review #2: Pathways for human exposure to *M. avium* spp. *Paratuberculosis*
(Waddell et al., in progress)

Scoping review #3: Public health risks of zoonotic hep E virus, norovirus & rotavirus
(Wilhelm et al., in progress)

Descriptive & framework analysis

Stakeholder evaluation & lessons learned

Proposed framework

Discussion with end users

Published framework
Alison Duncan

Department of Human Health and Nutritional Sciences
AGRI-FOOD FOR HEALTHY AGING (A-HA):
Building connections and advancing knowledge within the agri-food, nutrition and health sectors

Alison M. Duncan, Ph.D., R.D.
Associate Professor, Department of Human Health & Nutritional Sciences, University of Guelph

OMAFRA Knowledge Exchange Day, February 1, 2012
Project #: 299509
AGRI-FOOD FOR HEALTHY AGING (A-HA):
Building connections and advancing knowledge within the agri-food, nutrition and health sectors

Alison M. Duncan, Ph.D., R.D.
Associate Professor, Department of Human Health & Nutritional Sciences, University of Guelph

OMAFRA Knowledge Exchange Day, February 1, 2012
Project #: 299509
What is A-HA?

...innovative agri-food and nutrition research for healthy aging...

- Collaborative research & dissemination group
- Areas of expertise:
  - Applied nutrition and dietetics (Heather Keller)
  - Nutritional science (Ken Stark, Alison Duncan)
  - Food science (Lisa Duizer)
  - Priorities to apply research in aging (Research Institute for Aging Leaders Mike Sharratt, Josie d’Avernas)
  - Knowledge translation and project management with nutrition research expertise (Jessica Bowes, Hilary Dunn)
What is A-HA?

- Core mandate of knowledge translation & transfer (KTT).
- With funding from the **Agri-Food and Rural Link program**
  A-HA is implementing a 3-year KTT project to build connections and advance knowledge in the agri-food, nutrition and health sectors.
Project Objectives:

- **Objective 1:** Create and communicate A-HA knowledge translation/mobilization resources.
- **Objective 2:** Plan and execute A-HA knowledge translation events.
- **Objective 3:** Build relationships with new audience stakeholders.
- **Objective 4:** Train highly qualified personnel (HQP).
Project Activities:

**Objective 1:** Create and communicate A-HA knowledge translation/ mobilization resources.

- ‘Functional Foods for Healthy Aging’ toolkit.
  - Provide guidance and resources to assist Registered Dietitians in communicating with older adults about functional foods for healthy aging.
  - Includes background information on functional foods (e.g. definitions, Canadian regulations) and results of a University of Guelph research study.
  - Collaborative effort to develop and include stakeholder engagement to finalize.
**Objective 1:** Create and communicate A-HA knowledge translation/mobilization resources.

<table>
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<tr>
<th>SOCIAL MEDIA PLATFORM</th>
<th>HIGHLIGHTS</th>
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| **Twitter**           | • Growth in followers:  
                         - 117 in February 2011.  
                         - 324 in February 2012.  
                         • Key followers: Canadian Institutes of Health Research (CIHR), Agricultural Adaptation Council (AAC), Foodland Ontario, producer/grower organizations, professional associations. |
| **Blog**              | • Initiated in 2010, the blog is updated weekly with 57 postings to date.  
                         • Growth in number of site hits:  
                         - 121 in April 2011.  
                         - 539 in November 2011.  
                         - Averaging 350 hits/month. |
| **Facebook**          | • Initiated in 2010, synchronized with Twitter/Blog so all postings appear on Facebook fan page.  
                         • 83 ‘likes’ to date. |
Project Activities:

**Objective 2:** Plan and execute A-HA knowledge translation events.

- Annual Health Professionals’ Forum at the Royal Agricultural Winter Fair (Fall 2010-2012).
  - **Themes:** *Functional Foods & Natural Health Products: Staying Ahead of the Curve* and *Food Innovations for Health*
  - **Target audiences:** Health professionals (e.g. Registered Dietitians, Naturopathic Doctors), government, food industry, researchers & students.

- A-HA Innovation Breakfast with the Guelph Food Technology Centre (Spring 2012).
  - **Theme:** *Formulating Foods for the Aging Population.*
  - **Target audiences:** Food Industry - Research & Development, health professionals, researchers & students.
Project Activities:

Objective 3: Build relationships with new audience stakeholders.

- Nutrition Community of Practice (CoP) – 300+ members.
  - Part of Seniors Health Research Transfer Network (SHRTN).
  - Diverse core working group (e.g. A-HA, Dietitians of Canada, Ontario Society of Nutrition Management, UoG, UW).

- Action plan for 2012:
  - Monthly webinars (e.g. Local Foods to Healthcare Facilities – February 14, 2012).
  - Engage graduate students to develop resources based on Members Needs Assessment survey.
Agri-Environmental Research Data Repository

Wayne Johnston
Head, Research Enterprise and Scholarly Communication
University of Guelph
Agri-Environmental Research Data Repository

Wayne Johnston
Head, Research Enterprise and Scholarly Communication
University of Guelph
Research data management

• Accelerates scientific progress
• Increases the visibility and impact of research
• Ensures compliance with funding agency policies
• Avoids duplication of research
• Enables replication and verification of research results
• Enhances collaboration

Research Data: Unseen Opportunities
Canadian Association of Research Libraries, 2009
All too often the results of expensive and time-consuming research as represented by rich data sets are lost due to the absence of sound data management plans. Redundant research is undertaken because the previous research data is no longer available. Opportunities for analysis of data across time are lost along with the historical data sets. Even when data has been properly stored and preserved it benefits no one if it isn't easily discovered, retrieved and repurposed.
“When I read your letter I got pretty excited as the lack of dissemination and use of data generated in the 'public' sector has always worried me. [...] If the Final Report is already stored at the Library, and there is already a system of cataloguing and searching it, why not entrust the same institution to store the data.”

• Agrometeorology
• Capacity development
• Environmental geology
• Food processing
• Food safety
• Soil physics
Alison Blay-Palmer
Wilfrid Laurier University

Karen Landman
School of Environmental Design and Rural Development
Rural resilience through community food hubs

Ontario Ministry of Agriculture, Food and Rural Affairs
Knowledge Translation and Transfer

Dr. Karen Landman
University of Guelph

Dr. Alison Blay-Palmer
Wilfrid Laurier University
Rural resilience through community food hubs

*Ontario Ministry of Agriculture, Food and Rural Affairs Knowledge Translation and Transfer*

*Dr. Karen Landman*
*University of Guelph*

*Dr. Alison Blay-Palmer*
*Wilfrid Laurier University*
Project overview

• Eight universities, nine NGOs and four government offices, international partner

• Scanned 400+ projects, 100+ interviews, and 19 case studies including selected Premier's Agri-Innovation Award winners

• By region

• Typology:
  • urban/rural;
  • organizational structure and motivation;
  • project scale/scope
Rationale for project

• Develop understanding of how community food projects emerge, the challenges they face and how they succeed, describe innovation process

• Work in progress

• Will produce 'Models and Best Practices' report and toolkit describing case studies and notable projects across the province
Preliminary findings

- Many ingredients, no single recipe, place specific
- Multiple funding sources and supports that combine community resources often with local economic development and community health
- Technology increasingly important
- Require more flexible programs and policies
- Over-reliance on volunteers
Vivianne Bielmann

Department of Population Medicine
Calf-ETERIA

Knowledge Exchange Day: KTT in Action

Managing for the Future
Calf-ETERIA
Knowledge Exchange Day: KTT in Action

Managing for the Future
What is Calf-ETERIA?

- **Calf-ETERIA**: Using *Calf* health and productivity as a template for an *Evaluation of Translation and Extension of Research Information for Agriculture*

- Intended audience:
  - Dairy Producers (all objectives)
  - Project results:
    - Industry representatives
    - Dairy and Animal Science researchers
    - Bovine practitioners
Need for this project?

- Practical research advances within the last decade, which have led to new concepts for a variety of aspects related to the management and care of dairy calves and heifers
  - i.e. milk feeding programs, pain management, respiratory disease

- There has been very little documented benefit of this research

- There has been little understanding of how these new management schemes should best be implemented and little known about the barriers to adoption of these programs

- The most suitable methods of KTT to facilitate adoption of these new practices are unknown
Project Objectives

- Benchmark current dairy calf and heifer management practices

- Develop 3 approaches to undertaking KTT initiatives to improve awareness of, and encourage adoption of, known optimal management techniques to increase economic performance and health of animals raised for replacement stock

- Evaluate and quantify both the animal health and economic performance subsequent to their initial benchmark

- Disseminate case-study based benefits of optimal management systems to demonstrate both financial and animal health improvements to all Ontario dairy producers through producer meetings, print and web-based media

- Evaluate and quantify financial and animal health impact to measure success and determine value on both a per farm and whole-industry basis.
3 KTT Approaches

- Calf and Heifer management clubs
- Web-based KTT for BMP’s for calves & heifers
- Control Group

Timeline:
- Funding: Oct. 2010
- Survey sent to producers: Feb. 2011
- Data entry from survey: Feb. 2012
- Follow-up data collection: Feb. 2012
- Complete Analysis: April 2011
- Final Reporting: Oct. 2010
Benefits Ontario dairy producers from two key perspectives:

- Economically – through reduced costs attributed to death losses, animal morbidity and associated treatment costs and reduction in compromised lifetime milk production losses

- Improved welfare of dairy calves and heifers - through increased survival rates and improved health-status

- To change and improve specific aspects about the management of calves and heifers on Ontario dairy farms
KTT Panel

Knowledge Translation and Transfer (KTT) Success Stories: KTT through Innovation and Collaboration

Questions?