



PERIODIC REPORT

Looking for PHL solutions together

On October 4-7, 2015, the ADM Institute co-organized the First International Congress on Postharvest Loss Prevention with the Rockefeller Foundation in Rome, Italy and other supporters.

For two and a half days, the PHL Congress brought scientists, policymakers, businesses, NGOs, donors, educators and students together to share their knowledge and experiences.

The PHL Congress included a dynamic program that was full of opportunities to interact with world leaders on PHL issues, share and gain new knowledge, and make connections. The dialogue has continued beyond the Congress through the ADM Institute's blog campaign, Preventing PHL. Congress participants are using blogs to keep sharing what they know about postharvest loss from the perspective of their specific country or discipline.

Posts are being shared on social media, as are photos and videos using the tags #PHLCongress and #PreventPHL.

The accomplishments of the PHL Congress are driving targeted action to prevent postharvest losses. In a road mapping session at the Congress' conclusion, participants discussed reduction targets and intervention priorities in identifying next steps for this now closely connected community of practice. One clear call to action is that momentum started in Rome should continue.



All Congress photos © Francesco Vignali Photography

From the podium of the main stage in Rome, the ADM Institute announced that the second PHL Congress will be held in 2017.

The First PHL Congress was deemed a great success by all those involved. Other key supporters include the UN Food & Agriculture Organization, the Bill & Melinda Gates Foundation, USAID, John Deere, and the University of Illinois College of Agriculture, Consumer, and Environmental Sciences.

This Periodic Report presents highlights of the momentous event.



More photos
on the ADMI
Flickr site
[www.flickr.com/
phlinstitute/](http://www.flickr.com/phlinstitute/)

First International Congress on Postharvest Loss Prevention

World leaders inaugurate PHL Congress

“I don’t want this just to be another conference. We need to make this a moment in history.” With these words, Robert Easter, University of Illinois president emeritus and chairman of the ADM Institute External advisory board, set the tone for the First PHL Congress. Robert Hauser, dean of the UIUC College of Agriculture, Consumer, and Environmental Sciences, welcomed the participants on behalf of the university.



The opening session brought to stage leaders of organizations paving the way for postharvest loss prevention around the world. These leaders included Ertharin Cousin, World Food Programme; Daniel Gustafson, FAO; Judith Rodin, Rockefeller Foundation; and Joe Taets, ADM. In their individual comments and Q&A session responses, each reinforced a critical takeaway that framed the work to be done over the days ahead. “We have heard over and over again that one-third of food is lost each year”, the leaders all echoed. “It is time to do something about it”. Videos of opening session remarks can be viewed at www.youtube.com/PHLInstitute.



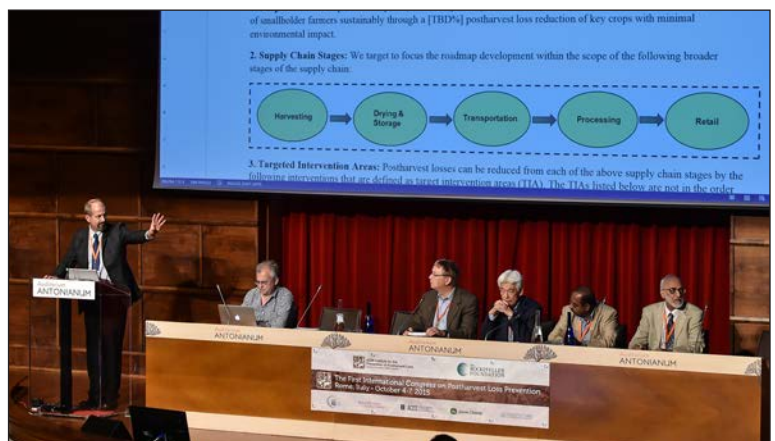
Scientists, practitioners take the stage and develop roadmap

The PHL Congress aimed to develop better tools and interventions to prevent postharvest for smallholders in developing countries through evidence-based dialogue among the world’s leading experts and actors working in the field. Technical presentations were given using four thematic areas: postharvest loss scenario & status, assessment methods and metrics of PHL Measurement, intervention strategies for PHL mitigation and education platform and decision support systems. Case studies from all four of these themes were also shared by highly experienced professionals.

In addition to technical presentations, a number of senior officials delivered featured remarks. Mr. CD Glin, Associate Director of the Rockefeller Foundation, explained the foundation’s leading Food Waste and Spoilage Initiative. USDA Undersecretary

Michael Scuse gave insights on how through good governance and public-sector investments, efficient and flexible markets can be powerful tools for reducing postharvest food loss. All Congress presentations were recorded, and the videos and slides can be viewed online at <http://phlcongress.illinois.edu>.

The PHL Congress will produce a Global PHL Roadmap using knowledge shared and lessons learned from the international forum. On the third day, participant breakout groups discussed reduction targets and intervention priorities for the following supply chain stages: harvesting, drying & storage, transportation, processing, and retail. Results were initially reported to the group at-large, and are being further compiled by a small committee. The Roadmap is set to be unrolled in early 2016.



When in Rome ... participants forge new connections

As headquarters of the world's food security work, there was no better to meet place for PHL collaborators to meet with colleagues than in Rome, Italy. The First PHL Congress venue tucked in the heart of the city opened its doors for participants to network and build relationships with colleagues from all over the world.

The program included several sessions designed to spark conversation and interaction among attendees, including poster sessions, an exhibition room, and a formal evening banquet at a hilltop venue overlooking the Roman cityscape. The exhibition room featured many interactive displays such as one from the World Food Programme showcasing an actual grain silo used in their P4P Program. Other exhibitors included the American Society for Biological Engineers, UN FAO, Dearman Engine Company, and the ADM Institute.

The poster sessions presented a wide array of experiences on everything from on-the-ground research, such as results of



mycotoxin reduction work in Bangladesh, to technological innovations, such as the ingenious Edipeel produce shield by APeel Sciences.

A great example of how the Congress was an important opportunity to have everyone under one roof came from the Post-harvest Education Foundation. More than

10 graduates of the NGOs international training program, who had previously only interacted virtually, had the chance to meet each other for the first time in Rome. This group greatly enjoyed sharing their experiences and work in reducing PHL, much the same as the entire network of Congress participants.

Building a Community of Practice for Loss Reduction



What is a community of practice? More importantly – what are communities of practice doing for PHL prevention? These questions are exactly what Charlene McKoin, Senior Program Officer from the Bill & Melinda Gates Foundation, and panelists she led in discussion sought to answer. In an interactive session with live demonstrations and ample time for questions and answers, representatives from the UN FAO, APHLIS+, and USAID described efforts they are leading to form and grow communities of practice for postharvest loss prevention.

One important initiative is the UN FAO Community of Practice

on Food Loss Reduction. This latest effort by FAO is an internet-based platform where members can participate in on-line discussions, get in touch with other practitioners, share and request relevant and updated information, and contribute in building up a worldwide community aimed at reducing food losses and achieving food security.

We encourage Congress participants and others working on PHL to join this platform and be active in the Community.

Find more information on how to get involved at:

www.fao.org/food-loss-reduction/en/

#PreventPHL blog campaign seeks to engage

What has remained a top recommendation for how to prevent postharvest losses around the world?

A better understanding the issues.

Through the PHL Congress, representatives of 62 nations have developed a new level of communication that is leading to better knowledge transfer, coordination, and advocacy for postharvest loss issues. In Rome, this group presented research, demonstrated technologies, shared success stories from the field, and discussed critical topics. They identified next steps, built new partnerships, called for more action, and initiated a roadmap for postharvest loss prevention.

In pursuit of a better understanding of PHL issues and reduction strategies, this group is now sharing their knowledge with the rest of the world. In November, the ADM Institute launched the PreventPHL

blog campaign. Speakers, presenters, and participants of the PHL Congress and their affiliates are writing blog posts about their work and experiences, building a body of knowledge and conversation online about what can be done to prevent postharvest losses. Campaign authors have spoken to a variety of issues in Brazil, Tajikistan, Nigeria, Ghana, Malawi, and others. Researchers and practitioners are offering their perspectives from the field, such as Lisa Kitinoja, founder of the Postharvest Education Foundation, who in her post writes about what she sees as the “weakest link”.

The Prevent PHL campaign is driving discussion forward beyond Rome with both PHL experts as well as those in cross-cutting disciplines such as food security, food safety, nutrition, climate change, economic development, and environmental sustainability.



University of Nottingham Ph.D. student Sarem Ugoh is one of the scientists who has shared her research and congress experience on the #PreventPHL blog.

At the Congress, Ugoh spoke about post-harvest losses in Nigeria's citrus value chain.

Considering the implications of Uganda's flying pineapples

By Katharine Troeger

University of Kassel, Department of Agricultural Engineering, Germany / DITSL – German Institute for Tropical and Subtropical Agriculture, Witzenhausen, Germany

When you buy a fresh pineapple from any of the markets or roadside vendors in Kampala, you can be quite certain that the fruit has already passed through numerous hands. From harvest to sale, people do their best to bring the fruits as quickly as possible to the consumers and this means that the fruits are often literally thrown from the field to the loading place, onto the truck, off the truck and in the markets. As part of the “Reduction of Post-Harvest Losses and Value Addition in East African Food Value Chains” Project (RELOAD)*, my goal in Uganda was to learn about existing losses in pineapple value chains and potential for improvement with an emphasis on how people along the chain manage the given conditions. With this at the forefront of my mind, I pondered the significance of these “flying pineapples”.

Observations left me with a puzzle: despite reports of tremendous losses and waste, my observations in markets and interactions with pineapple growers and traders left me with a conundrum. The bruising and damage inflicted on the pineapples as a result of the throwing was clearly a loss in terms of quality. However, this occurred in a context in which the idea of wasting and throwing



Pineapple harvesting in Kyanamukaaka, Masaka, Uganda / photo credit: K. Troeger, 2015

away such precious fruits did not seem acceptable, and in practice, was rarely done. Even small blemished fruits that no longer had the appearance of being fresh were still brought to markets and put to use.

Vendors sold these fruits at low prices with little profit, and in the process made this nutritious food more accessible to poor people. This is an important food security angle from which to consider postharvest losses.

Read the rest of this post at: <http://bit.ly/1NY6GdM>

To read all #PreventPHL blog entries, visit <http://bit.ly/PHLCongress>

PHL Scholars report on their time in Rome

Seven University of Illinois students were sponsored to attend the First International Congress on Postharvest Loss Prevention in Rome, Italy. They wrote about their experiences, both at the Congress and as international travelers, for our #PreventPHL blog campaign. On this page we have reposted two posts written by PHL Scholars.

For more from Congress attendees, visit <http://bit.ly/PHLCongress>. To read more from our PHL Scholars, look for PHL Scholar Reports.

A glance into global collaboration

By Anna Kanfer, University of Illinois sophomore

PHL Scholar, majoring in agriculture and consumer economics, emphasis in public policy and law

Upon arrival in Rome, I was starstruck. Our whole group jumped out of the cab and practically skipped all the way down our hotel's main street to the Colosseum. It was 10 a.m. after spending 10 hours on a plane without sleep, but we felt energized. There was an hour and a half before our first appointment at the conference venue, so it was mandatory to squeeze in at least a "breakfast gelato" and a couple of pictures beforehand. We didn't know what we'd gotten ourselves into at that point, but this wouldn't be the last of sleepless nights and jam-packed days.

For the next four days, we were immersed in a world so far from anything I've seen before. The First International Congress on Postharvest Loss Prevention convened 260 people from 62 different countries to share their research, findings, and ideas on what can be done to solve this important component of world hunger. My favorite aspect of the event was getting to meet and learn about people from all different areas of the world--from right there in Rome, to as far as Ethiopia or Thailand.

At the reception on the first evening, our group met a presenter from Ghana named Mammie, whose research focused on expanding food processing capacity. We talked about her various trips all



PHL Scholars Chelsea Peterson (center) and Anna Kanfer (right) with Congress presenter Mammie Hutchful, Ghana.

over the world, and studies during her college years in the familiar Midwestern USA! Mammie mentioned that she hadn't had much time to do any exploring, so Chelsea and I walked with her down to the Colosseum during our lunch hour the next day. We had a great chance to learn all about the experiences and culture of her home country and shared experiences from ours.

Read the rest of this post at: <http://bit.ly/1N1uWGf>

Food supply shortage answers don't always lie in science

By Kara Brockamp, University of Illinois freshman

PHL Scholar, studying agricultural and biological engineering

In the words of Daniel Gustafson of the United Nations Food and Agriculture Organization, "Food loss and waste is not an accident. There are many cultural, economic, and technical reasons that must be addressed." I think increased educational opportunities for farmers could solve most of these problems.

When most people think of education, they picture a classroom full of young, eager kids, and in America, this is widely true. However, in countries that are most affected by postharvest loss (PHL), many producers cannot read or write well enough to gain valuable information from a classroom setting. The knowledge they possess stems from their hands-on experiences.

Some of the biggest causes of PHL are due to a lack understanding. For instance, in many developing countries, tomato farmers harvest tomatoes by picking them by hand and throwing them to

collection points. Because the tomatoes leave the farm at the end of the day to go to market, the farmers never see or hear about them again. They don't even realize the damage the tomatoes undergo. This practice can create up to 100 percent losses in some batches of tomatoes. However, since there are no education programs in place, the problem remains. Because their cultures are not as supportive of classroom settings, they need more effective ways to relay this information.

In other developing countries, farmers lack the know-how to raise their crops properly. Basic biological principles that farmers in America take for granted - such as when to plant, harvest, and apply fertilizer - are way beyond the capacities of the educational systems in other countries.

This lack of information is certainly a problem for Caribbean cassava producers. A harvest delayed or hurried by even a few days can prove problematic ...

Read the rest of this post at: <http://bit.ly/1lgavOW>

Project updates

Farmers learn about PHL prevention technology

Training is a key step in ADMI Village process

Education and training are critical components of PHL prevention. As a part of the ADM Institute's postharvest loss reduction project in Bihar, India, ADMI project partners at Rajendra Agricultural University (RAU) organized two KISAN GOSTHIs (interactive session with farmers) at Rajaur village, Shivaji Nagar, Samastipur and Naipur village, Mansurchak, Begusarai on December 5 and 8, 2015 respectively.

About 50 farmers and some government officials (Block Agricultural Officer and Mukhiya of the concerned Panchayat) participated in each Kisan Gosthis. The farmers were made aware about the issues of postharvest losses and effective technologies and practices for cleaning, drying, and storage of crops to minimize these losses.

Trainers explained the working mechanism and advantages of hermetic bags (Su-



Er. Vishal Kumar, RAU, leads a village KISAN GOSTHI session in the state of Bihar, India.

per GrainPro and Purdue improved crop storage (PICS) bags) and two dryers (low-cost STR dryer and solar bubble dryer). Some of these farmers have been involved in the hermetic storage studies that started

in the last week of November 2015.

The low-cost STR dryer is under fabrication at RAU and will be demonstrated to farmers in January 2016.

Rendall hired as project manager



Tim Rendall is the project manager for the Appropriate Scale Mechanization Consortium (ASMC). He will join the consortium in January, having completed his graduate

degree in Technical Systems Management from the University of Illinois. The ASMC aims to empower smallholder farmers in Burkina Faso, Bangladesh, Cambodia, and Ethiopia through appropriate scale mechanization to improve land and labor productivity in a sustainable manner.

This ADMI-sponsored project will foster a culture of innovation by empowering small-holder farmers, business professionals, professors, and students to create new technologies to expand mechanization.

ADMI partners attend PHL Congress

Several of the ADM Institute's project partners made presentations at the First International Congress for PHL Prevention. In addition to the presentations, those working on the Bihar project held a project meeting at the Congress site, since so many of the project participants were at the event. We are proud to recognize the work of our partners all over the world.

More information about the projects presented at the Congress are on the next page. For updates about ADMI projects, read the 2015 annual report here: <http://bit.ly/1Nu6j7e>



This group of ADMI partners, pictured during a Congress poster session are (left to right): Dr. Md. Abdul Awal, Bangladesh Agricultural University; Dr. R.K. Mittal, Rajendra Agricultural University; Er. Satish Kumar, Bihar Agricultural University; and Er. Vishal Kumar, Rajendra Agricultural University.

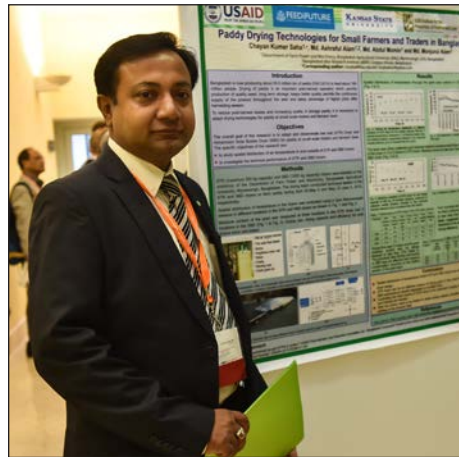
Awal is a researcher on the Bangladesh project, the others work on the ADMI Village project in Bihar.

ADMI researchers present at PHL Congress

USAID - Feed the Future Innovation Lab for the Reduction of PHL

The ADM Institute funded a rice value chain-focused PHL reduction research project to the Bangladesh Agricultural University (BAU), Mymensingh. The project focuses on capacity building for mycotoxin detection, identifying and disseminating drying and storage technologies.

The researchers from BAU (Saha and Momin on this page, Awal on previous page) presented their results from the first phase of the project during the First International Congress on Postharvest Loss Prevention.



Dr. Chayan Kumer Saha,
Bangladesh Agricultural University



Md. Abdul Momin
Bangladesh Agricultural University

Reduction of Postharvest Loss for Smallholder Farmers, Bihar, India

The aim of the project is to reduce postharvest losses in cereal crops (wheat, maize, rice, and lentil) in the state of Bihar by identifying the hotspots in supply chain, identifying and testing suitable processing techniques, and providing training and education about these technologies. Project work will be expanded and scaled up to develop the ADMI Village: an international PHL reduction knowledge, demonstration and training site in Bihar, India.

Congress presenters on this project included Rausch and Baylis (at right) and R.K. Mittal, Satish Kumar and Vishal Kumar on the previous page.



Dr. Kent Rausch, University of Illinois at
Urbana-Champaign, Bihar project



Dr. Kathy Baylis, University of Illinois at
Urbana-Champaign, Bihar project

Measurement and Documentation of Brazilian Postharvest Loss

Continuing its research work in Brazil, a research team from various departments of the University of Illinois and three universities in Brazil (Universidade Federal de Viçosa, Universidade Federal de Goiás, and Federal University of Mato Grosso) are working to estimate soybean and corn postharvest losses through a comprehensive survey of smallholder farmers in Paraná state and exploratory data collection in Mato Grosso state. The research also involves determining the best management practices and developing maximum allowable storage time (MAST) guidelines of soybeans and corn.



Dr. Marvin Paulsen
University of Illinois at Urbana-Champaign



Dr. Mary Arends-Kuenning
University of Illinois at Urbana-Champaign

For more details about ADMI projects,
download our 2015 annual report <http://bit.ly/1Nu6j7e>

ADMI board looks forward to the next year

This year, the ADM Institute hosted its Annual External Advisory Board Meeting in conjunction with the PHL Congress in Rome. Chaired by University of Illinois President Emeritus Dr. Robert Easter, the meeting gave members of the institute's External Advisory Board (EAB) and Steering Committee the opportunity to provide input on the institute's latest project work and initiatives.

The meeting was held on the morning before the PHL Congress began. The group was eager to discuss plans of what would unfold over the next three days, as attendees would be directly involved in the Congress program throughout the event - interacting with participants; fulfilling leadership roles as presenters, session chairs, panelists, group leader, and speaker hosts; and providing their expert insights to discussion.

The conversation started on what the Congress was poised to achieve. The group emphasized two important insights about PHL reduction, that collaboration continued to be a critical need, and in convening the world's experts for the first time, the PHL Congress was delivering the needed momentum. They challenged the ADM Institute to continue serving in this convening capacity, recognizing the important global linkages it was establishing. They gave critical advice on developing the PHL Roadmap, and supported the idea that ADMI should host a second PHL Congress in 2017.

Dr. Prasanta Kalita also presented updates on ADMI's recent programs and initiatives. A major topic of discussion was the institute's recent launch of the ADMI Village project in Bihar, India. Several committee members bring years of experience with agricultural development in India, including Ashok Gulati, former chairman of the Indian Commission for Agricultural Costs and Prices, and Usha Barwale-Zehr,



Pictured above are the External Advisory Board (EAB) and Steering Committee (SC) members present at the annual meeting in Rome. Members are (left to right): Pradeep Khanna (UIUC), Kent Miller (EAB), Ashok Gulati (EAB), Robert Easter (chair, EAB), and Neal Merchen (SC); back row: Udatta Palekar (SC), Carlos Campabadal (EAB), Prasanta Kalita (SC), Usha Barwale-Zehr (EAB), Charlene McKoin (EAB), K.C. Ting (SC), and Dirk Maier (EAB).

Chief Technology Officer of Mahyco Seeds.

The group recognized the importance of developing regional, on-the-ground hubs for postharvest loss prevention, and commended the institute for its growing presence and impact in South Asia through its expanding project portfolio in India, Bangladesh, and other countries.

As the institute looks ahead to further reduce postharvest losses by expanding its

key programs, it will continue to benefit from the guidance and support of its advisory group. The ADM Institute would like to thank and specially recognize these dedicated individuals for their leadership, collaboration, and service.

A full list of External Advisory Board and Steering Committee members can be viewed at <http://postharvestinstitute.illinois.edu/about.html>.

ADMI project list to date

- Reduction of Postharvest Loss for Smallholder Farmers - Bihar, India
- Feed the Future Innovation Lab for the Reduction of Postharvest Loss - Bangladesh
- Measurement and Documentation of Brazilian Postharvest Loss
- Reduction of Postharvest Losses in Soybeans in Northeast Mexico
- Integrated Stored Solar Dryer and Cooker - UIUC
- Postharvest Green Technologies for Urban Farms - Prosperity Gardens, Rantoul, Ill.
- An Overview of Postharvest Losses in Rice in APEC Economies - Asia Pacific nations
- Postharvest Loss Reduction Project in China
- Appropriate-Scale Mechanization Consortium for Sustainable Intensification



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