



# Periodic Report

**The ADM Institute's Periodic Reports provide updates on recent and upcoming activities, reports, events and accomplishments.**

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## ADM Institute Participates in the Borlaug Dialogue Symposium

This October, members of the ADM Institute's External Advisory Board and its Steering Committee will participate in the Norman E. Borlaug International Symposium.

This annual event, known as the "Borlaug Dialogue," is held in conjunction with the awarding of the World Food Prize in Des Moines, Iowa. The three-day event brings together international experts, policy leaders, business executives and farmers to address cutting-edge issues in food security and nutrition.

Representatives of the ADM Institute will be engaged in the Borlaug Dialogue program, informing the participants of issues and approaches associated with postharvest loss. In addition, a meeting of the ADM Institute's External Advisory Board will be conducted in conjunction with the symposium events.

In honor of Norman Borlaug and his achievements, the World Food Prize is awarded annually to outstanding leaders who have improved the quality, quantity, or availability of food in the world. While the award ceremony is the featured event, the Borlaug Dialogue also serves as an opportunity for actors and stakeholders to come together and be engaged with key issues. This year's theme, "Partnerships and Priorities," will frame the dis-

cussion around how international players can utilize strategic collaboration in addressing rising concerns over global food safety and food security. As old problems grow, more complicated and new ones continue to emerge, the need for innovative solutions is more pressing than ever. Partnerships between businesses, the government, NGOs, institutions, and other stakeholders offer advantages in their

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**Below: October 18th Breakfast Panel**

**Reducing Postharvest Loss to Advance Food Security**

October 18, 2012  
7:00am-8:00am  
Davenport Room (3<sup>rd</sup> Floor)  
Downtown Des Moines Marriott

This seminar hosted by the *ADM Institute for the Prevention of Postharvest Loss* will address knowledge gaps which contribute to the loss of agricultural produce in food supply chains and the means to reduce those gaps.

Speakers at this breakfast panel include:

**Hans Jöhr**, Corporate Head of Agriculture, Nestlé  
**Elizabeth Mitcham**, UC Davis Postharvest Technology Center, Director  
**Marcelo Duarte Monteiro**, Aprosoja, Executive Director

(cont'd) shared resources and expertise that will allow international players to form and execute dynamic solutions. In choosing this theme, the Borlaug Dialogue highlights how partnerships are increasingly regarded as an important tool to assist in achieving global food security.

Throughout the week, dialogue sessions and side events will drive the discussion of leveraging partnerships. As an institution designed to address the complex issue of postharvest loss using the

strength of public-private collaboration, the ADM Institute is honored to host a seminar titled, "[Reducing Postharvest Loss to Advance Food Security](#)." The seminar, drawing experts and practitioners from all sectors, will focus on how knowledge gaps contribute to the loss of agricultural produce in food supply chains and how the work of the institute serves to fill those gaps through scholarship and network-building.

Director Steve Sonka will also moderate a dialogue session titled "[Waste Not,](#)

[Want Not: Solutions for Reducing Post-harvest Loss](#)." Panelists for that session include an academic, a NGO president, and a smallholder Indian farmer.

During these events, the ADM Institute will focus on the importance of partnerships by explaining how reducing post-harvest loss requires the engagement of a wide variety of stakeholders across supply chains. ¶

## ADM Institute Featured by USAID Agrilinks

USAID Agrilinks serves to disseminate the knowledge, experiences, resources, and expertise of many different actors in the fields of agricultural development and food security using an interactive online communication platform. The institute is honored to partner with Agrilinks in working to serve as an international information and resource hub.



Director Steve Sonka Interviewed by USAID Agrilinks

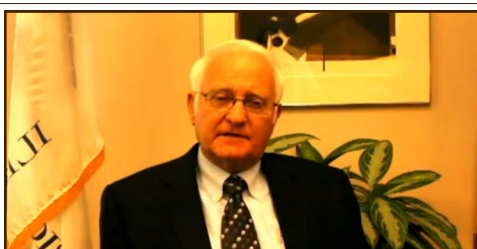
Visit Agrilinks at <http://agrilinks.kdid.org>.

### Agrilinks Video Note Series:

#### Director Interview with USAID

Institute Director Dr. Steve Sonka appeared as a guest expert in USAID's Agrilinks Video Note interview series. Hosted by the Bureau of Food Security,

Dr. Sonka spoke about the unique ability of the ADM Institute as a university-based institution to foster learning beyond the limited scope of single-project implementation. This characteristic is particularly important for issues related to postharvest loss, as solutions must overcome more than technological obstacles. During the interview, Dr. Sonka gives an example of how addressing the complex cultural, economic, and social challenges surrounding postharvest loss in rural Honduras ultimately led practitioners to achieve success in implementing metal silo storage technology. For more of Dr. Sonka's comments on the vision for success of the ADM



Robert Easter, President of the University of Illinois, discusses the importance of reducing PHL.



Pradeep Khanna, Associate Chancellor for Public Engagement at the University of Illinois, discusses the unique public-private partnership of the ADM Institute

Institute, watch the Agrilinks interview, "[Preventing the Preventable](#)".

### Vision of the Institute Videos

President of the University of Illinois, Dr. Robert Easter, and Associate Chancellor for Public Engagement, Pradeep Khanna, also participated in institute-filmed interviews, describing the importance of reducing postharvest loss. President Easter highlighted a recent trip to the State Department, and also the opportunity for the University of Illinois to educate students and expand its knowledge base in this area. Associate Chancellor Khanna discussed the ADM

Institute's unique academic-industry partnership, the significance of the Green Revolution, and how the ADM Institute can help India identify its next challenges in agriculture. Watch both interviews and read the blog post here: [Vision of the Institute Videos](#).

### Researcher Interviews Featured

As featured in the last Periodic report, the ADM Institute created video interviews with the principal investigators of each of its currently funded research projects. Throughout the month of September, USAID Agrilinks highlighted

these videos through short blog posts. In these videos, faculty explain why research should be conducted in that specific area, what current challenges are, and what success would look like for their projects. You can also find these videos on the [ADM Institute website](#). ¶

## New and Improved Webpage

The ADM Institute has updated its website! The new site features a complete listing of all research projects and proposals, as well as graphics that allow for better understanding of the institute's vision, goals, and themes.

The '[Home](#)' page features new side panels with updates on new additions to the website. Our '[Recent News](#)' shortcut allows site visitors to see all that has happened recently in one quick location. The Site Map shows all the locations of the different types of information on the site.

The '[About](#)' tab includes information on the institute, staff, External Advisory

Board, Steering Committee, and 'Why PHL?'

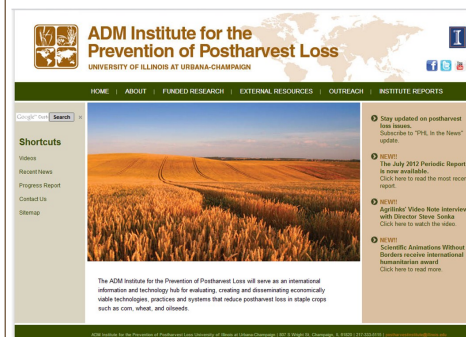
'[Funded Research](#)' covers 2012 Funded Projects, 2011 Seed Projects, and 2011 Projects in India. Each of these sections includes proposals, some include video interviews, while others have PowerPoint presentations available.

'[External Resources](#)' consists of Literature, Databases, Tools, Projects, Videos, and Events that have been compiled by institute staff.

'[Outreach](#)' consists of Sponsorship, Presentations, Reports, and Videos created by the institute.

'[Institute Reports](#)' consists of the Progress Report, Periodic Reports, and [PHL In the News](#).

We hope that you will have a chance to visit the site and make use of all it has to offer. Should you have any suggestions, comments, or recommendations, please do not hesitate to contact us! ¶



## MART: Postharvest Loss of Black Gram in India is about 22-25%

The ADM Institute for the Prevention of Postharvest Loss recently collaborated with [MART](#), an Indian consulting company dealing with emerging markets, to identify harvest and postharvest issues of black gram production in India. Following is a summary of the main findings. The entire report is available on the [ADM Institute website](#).

India accounts for 70% of black gram

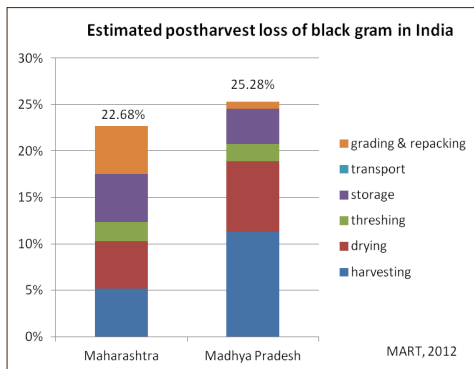
production worldwide, and is thus the largest producer of black gram. Each year, 1.5 million metric tonnes of black gram are produced in India. However, the current production cannot satisfy Indian demand for black gram. India is also the largest black gram importer, as pulses are widely consumed as a main staple in Indian cuisine. Preventing black gram loss is essential for Indian farmers

to meet the demand and feed the Indian people.

Maharashtra and Madhya Pradesh, two of the major black gram-producing states, account for about one-third of India's annual production. In this study, these two states were chosen to understand the causes of black gram loss as well as to identify currently available

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(cont'd) postharvest technology in India. Farmers, representatives of farmer groups, the private sector, and governmental agencies were interviewed to examine current practices, loss along the



supply chain, and key postharvest loss issues.

**Extent of loss**

The report indicates that black gram farmers were somewhat unaware of postharvest loss and tended not to pay attention to the amount of loss in the processing stages. Respondents reported that postharvest loss in Maharashtra and Madhya Pradesh were 22.68% and 25.28%, respectively. Farmers in both states reported their highest loss during the harvesting stage, mostly in response to weather conditions. Drying stage practices also resulted in high loss, especially as the drying conditions of the black gram affect different extents of loss during the threshing and storage stages.

**Supply chain challenges**

There are four major challenges in black gram production: weather conditions, lack of timely available labor, low technology adoption rates, and improper drying and storage practices. Black gram is cultivated as an inter-crop on land that is usually devoid of nutrients and irrigation facilities. As black gram is grown during the rainy season, produc-

tion is highly affected by weather conditions. While fertilizing requires adequate rainfall, sunny days are usually expected during harvesting and drying stages.

The lack of timely available labor is another problem in black gram production. Large labor input is necessary for black gram production. Cultivating, harvesting, and threshing all heavily rely on labor. However, the amount of labor is limited, and farmers' processes are concentrated on certain days as dictated by weather constraints. As the wait for processing lengthens, so does the quality of grain continue to deteriorate. Additionally, technology adoption rates remain low in both Maharashtra and Madhya Pradesh. Each village interviewed had only 2-4 tractors or threshers. Many farmers still employ traditional processing methods, although threshing techniques are slowly shifting from manual to mechanical. Farmers generally prefer manual threshing methods when grains are already



*Broken and split black gram kept for domestic consumption by farmers in Bodgaon, Alirajpur*

damaged or of low quality. They also indicated that manual threshing practices result in less loss.

Finally, improper drying and storage practices are also key issues of black gram postharvest processing. Indian farmers still rely on sunlight to dry their crop, which leaves them with minimal control of moisture content. High mois-

ture content results in a higher possibility that fungus will be present in storage, while over-drying grains lead to breakage during threshing. Additionally, storage practices are poor, particularly at the farm level. Farmers store grains in their homes, and government- or privately-owned storage facilities were not found in the interviewed villages.

The table below summarizes the challenges along the black gram supply chain.¶

*Table 1. Challenges in Each Stage*

Stage	Challenges
Cultivation	<ul style="list-style-type: none"> <li>• Unpredictable and unevenly-distributed rain</li> <li>• Shortage of timely available labor</li> </ul>
Harvest	<ul style="list-style-type: none"> <li>• Shortage of timely available labor</li> <li>• Slow harvesting process</li> </ul>
Drying	<ul style="list-style-type: none"> <li>• Serious loss may occur from heavy rain</li> <li>• No moisture content control results in both quality and quantity loss</li> </ul>
Threshing	<ul style="list-style-type: none"> <li>• Manual threshing results in less loss but higher soil content</li> <li>• Machine-threshing causes more breakage, splitting and blowing away of grains</li> <li>• Threshers are not exclusively used for black gram and thus need trial and error to achieve appropriate settings</li> <li>• Shortage of timely-available threshers and labor</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• Loss occurs only because of accidental breakage of gunnysacks</li> </ul>
Storage	<ul style="list-style-type: none"> <li>• High moisture content</li> <li>• Lack of storage facilities</li> </ul>
Sales	<ul style="list-style-type: none"> <li>• Careless handling in market yards</li> </ul>



*Incomplete wicker basket for field storage, Alirajpur*

*All photos provided by MART.*

# Outreach and Recent Events

This summer, representatives of the ADM Institute for the Prevention of Postharvest Loss presented at several events to document the significance of postharvest loss and how the ADM Institute contributes to this issue. The following are some key points addressed in presentations:

## *Postharvest Loss: A Global Issue for a Growing World*

- Food demand is expected to increase 70%, and demand for agricultural products will double by 2050.
- Millions of tons of staple crops – enough to meet the dietary needs of hundreds of millions of people – are lost each year. FAO estimates that roughly one-third of food produced is lost.
- Only 5% of agriculture research dollars are dedicated to the study of postharvest loss.
- Postharvest loss is a complex issue which differs by region, by crop, and

across growing conditions. It even varies between countries or states for the same crop.

## *Raising Awareness: The Role of ADM Institute*

- Reducing postharvest loss represents one of the most economical ways to increase food production.
- The ADM Institute serves as an international information and technology hub to encompass technologies, practices, and systems, focusing on staple crops in key agricultural domains.
- Reducing postharvest loss is an efficient, achievable way to fight hunger and help feed a growing population, and the ADM Institute is committed to being a part of this important solution.

## *Solutions for the Future*

- The ADM Institute has allocated \$2.5 million in funding since 2011 in four

major research themes: measurement & technology development; systems informatics & analysis; policy analysis; and education, training & information transfer.

- With these projects, the ADM Institute will:
  - Develop low cost methods to obtain robust measurement of loss,
  - Design and utilize animations to educate and train farmers on techniques to reduce postharvest loss, and
  - Implement systems-based frameworks which can effectively track potential benefits and costs of loss reducing interventions..

The table below lists some of the recent events at which representatives of the ADM Institute have participated. ¶

Date	Event / Representative / Location	Topic
Jun 6	Director Steve Sonka presented to USAID officials in Washington, D.C.	<a href="#">Reducing Postharvest Loss to Advance Food Security</a>
Jun 12	Director Steve Sonka met with ADM China employees in Shanghai, China.	Development of the ADM Institute
Jun 13	Director Steve Sonka presented at the 22 <sup>nd</sup> Annual IFAMA World Forum and Symposium in Shanghai, China.	Postharvest Loss and Sustainable Development
Jun 26	Director Steve Sonka was interviewed by USAID Agrilinks in Washington, D.C.	Postharvest loss and the ADM Institute
Jul 16	Professor Richard Gates, an institute faculty member in Agricultural and Biological Engineering, presented at the CLIA/CONBEA 2012 conference in Brazil. This presentation is available in both <a href="#">English</a> and <a href="#">Portuguese</a> .	Preventing Postharvest Loss: An Initiative at the University of Illinois
Aug 21	Director Steve Sonka met with FAO officials in Rome, Italy.	Postharvest Loss and Sustainable Development
Sept 17	Pradeep Khanna, Associate Chancellor for Public Engagement, presented to students of the Sustainable Product and Market Development for Subsistence Marketplaces course in Champaign, IL.	Postharvest Loss and Sustainable Development
Sept 18	Director Steve Sonka presented at the Reducing Food Waste: From Farm to Fork Conference in London, U.K.	Food Loss in Production, Processing and Distribution
Oct 9	Director Steve Sonka presented to the National Defense University Fellows at the University of Illinois.	Reducing Postharvest Loss to Advance Food Security

# Upcoming Events

The ADM Institute has been involved both domestically and internationally in events concerning post-harvest loss and agricultural development. Below is a partial listing of upcoming events in which representatives of the ADM Institute will participate:

Date	Event / Representative / Location
Oct 18-19	The ADM Institute will host a breakfast panel session and Director Steve Sonka will moderate a session at the <a href="#">Borlaug Dialogue Symposium</a> in Des Moines, Iowa. The ADM Institute will also host the second External Advisory Board meeting while in Des Moines.
Oct 22-26	The <a href="#">China Executive Leadership program</a> at the University of Illinois is hosting the ADM-China State Administration of Grain Program. KC Ting, a member of ADM Institute Steering Committee, will lead the seminar discussion about postharvest loss and sustainable development.
Oct 22-Nov 2	Grace Kenney, one of the ADM Institute staff, will attend the “ <a href="#">Rice: Postproduction to Market Training Course</a> ” hosted by the <a href="#">International Rice Research Institute</a> in Los Banos, Philippines, to learn about the latest practices regarding the postproduction handling and market assessment of rice.
Oct 24-25	Representatives and faculty members of the ADM Institute will attend a conference about postharvest loss and storage in Sinop, Brazil.

*If there is a conference or event that should be brought to the ADM Institute’s attention, please do not hesitate to inform us.*



*Harvested wheat left in heaps for field-level drying in Jobat, Alirajpur (credits to MART)*



*Grain transferred into plastic bags for in-field storage in Brazil (credits to Marvin Paulsen)*



## ADM Institute for the Prevention of Postharvest Loss

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