AIP NEWSLETTER

A Newsletter of the Agricultural Innovation Program (AIP) for Pakistan

Volume 3, Issue 1, January-March 2016

Message from the Project Leader

Greetings Readers!

I am pleased to share with you the Agricultural Innovation Program (AIP) updates for the quarter that ended on March 31, 2016.

The commissioned projects are making significant progress on out-scaling technologies/practices to generate greater impact. John Groarke, USAID-Pakistan Mission Director, visited and appreciated the AIP's tomato and wheat demo plots funded by USAID at the National Agriculture Research Center (NARC) Islamabad. The vegetable component trained 38 onion seed growers from Shuga village in Buner District, Khyber Pakhtunkhwa (KP) Province, which was declared an onion seed village because of its unique location and suitability for seed production.

The livestock component conducted farm productivity trials and disseminated the results through 11 farmer awareness programs in Punjab Province; involving 2,386 livestock farmers and three farmer awareness programs in KP Province involving 1,311 farmers.

Certified and basic seeds of 13 new high yielding and rust resistant wheat varieties were used in village-based seed production, participatory varietal selection trials, and paired plot comparisons involving more than 7,000 smallholder farmers across Pakistan. The initiative will help identify, validate, popularize new varieties and replace old varieties. It will also generate sources of seeds of the new varieties in far-flung areas that can flow from farmer-to-farmer leading to food security in the food insecure areas.

Biofortified quality protein maize (QPM) hybrids are the first batch of maize products from AIP to reach farmers in Pakistan. Two QPM hybrids, originally from CIMMYT-Colombia, were temporarily named QPHM200 and QPHM300 by NARC for local dissemination.

AIP-Rice carried out an experiment to evaluate hermetic bags along with jute and polypropylene (PP) bags for storing rice at NARC Islamabad. The data on physical grain quality revealed that head rice recovery was far lower (58.9 percent) in rice stored in jute and PP bags than in rice stored in hermetic bags. Similarly, the moisture level increased drastically during storage in jute bags (by 25.3 percent) and PP bags (by 24.3 percent) but remained the same (at 13.6 percent) during storage in hermetic bags even after one year.

CIMMYT, in partnership with Comsats Institute of Information Technology (CIIT) Lahore, organized a two-day training course on SPSS and STATA specialized software for social scientists in Lahore, including more than 40 faculty members. Additionally, 650 farmers were made aware of zero-till wheat planting technology in the rice-wheat areas of Sindh and Balochistan Provinces.

To boost the newly developing grape industry, Perennial Horticulture commissioned several research projects in partnership with Pir Mehr Ali Shah University of Arid Agriculture Rawalpindi, carried out seven training sessions in Islamabad and trained 96 grape growers from across Pakistan.

During this quarter, four workshops and a symposium provided vocational training to 210 participants, including 162 men and 48 women. Young school girls from Okara, Punjab Province, were trained on safety procedures for pesticide application by ePakAG.

I am fortunate to be supported by a highly effective team; with their hard work and commitment, the ball is rolling. AIP is the result of the combined efforts of Pakistan Agricultural Research Council (PARC), the International Livestock Research Institute (ILRI), the International Center for Agricultural Research in the Dry Areas (ICARDA), the International Rice Research Institute (IRRI), the World Vegetable Center (AVRDC), the University of California at Davis, and the International Maize and Wheat Improvement Center (CIMMYT). It is funded by the United States Agency for International Development (USAID). With these national and international partners on board, AIP continues to improve Pakistan's agricultural productivity and economy.

For details on AIP's activities and upcoming events, please visit our website aip.cimmyt.org. Your comments and suggestions are welcome.

Enjoy reading!

Md. Imtiaz
Project leader

Inside This Issue:

Livestock.....2

Cereals and Cereal Systems...3
Wheat.....3

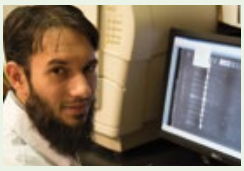
Maize.....4

Rice.....6

Socioeconomics 7
Agronomy.....8

Vegetables.....10

Perennial Horticulture.....12
Human Resource Dev. 14



E-PakAg.....16

AIP-Livestock

AIP-Livestock is led by the International Livestock Research Institute (ILRI) in partnership with the International Center for Agricultural Research in the Dry Areas (ICARDA).

For feedback and queries, contact Ibrahim Mohammed (ILRI): m.ibrahim@cgiar.org.

Snow-balling Innovations to Neighboring Villages

On January 5-17, 2016, 11 farmer awareness programs were organized to disseminate results of farm productivity trials in Bahawalnagar District of Punjab Province. The response of the farming community was overwhelming, with as many as 2,386 livestock farmers from 44 villages attending the programs. Farmers who participated in the trials shared their experience on how they improved milk productivity by giving cows balanced feeding and access to water. A balanced feeding chart to improve milk productivity in cattle and buffalo was distributed among the farmers.

In appreciation of the efforts to improve livestock farming practices, 33 livestock farmers (three from each village) received one bag of feed concentrate to attain the highest milk productivity per animal per day during the trial period. Three similar farmer awareness programs were organized in partnership with the Khyber Pakhtunkhwa (KP) Livestock Department involving 1,311 farmers from Swat and Mardan districts of KP Province. A practical guide to improve awareness of balanced feeding in the form of feeding charts was also distributed among the participating farmers. Three farmers from each village where farmer participatory trials were conducted received a 50-kg bag of concentrated feed in appreciation for coming in first, second and third in milk production of their animals.

Agriculture Exposition in Faisalabad

During February 29-March 6, 2016, AIP-Livestock participated in an agriculture exposition organized by the University of Agriculture Faisalabad (UAF), Punjab Province. Visitors showed keen interest in AIP-Livestock activities in Pakistan. In addition, the AIP-Livestock display was ranked third among the 100 stalls by visitors and organizers.

Livestock Development in Balochistan Province

A one-day conference (March 31, 2016) on livestock development was organized in Balochistan Province by the Government of Balochistan's Livestock Department in partnership with AIP-Livestock, PARC, FAO, and Australian Aid in Quetta. The meeting focused on documenting the existing issues in livestock rearing and productivity and developing strategies to improve livestock productivity and the livelihoods of poor livestock farmers of Balochistan Province. The Federal Minister for National Food Security and Research, the Chief Minister Govt. of Balochistan Province, as well as the provincial ministers and secretaries attended this meeting. AIP-Livestock sponsored 82 of the 110 men and women livestock farmers from 23 districts of Balochistan Province who participated in this meeting.

Cereal and Cereal Systems

WHEAT

AIP-Wheat is led by the International Maize and Wheat Improvement Center (CIMMYT).

For feedback and queries, contact Krishna Dev JOSHI (CIMMYT-Pakistan): K.D.Joshi@cgiar.org.

Strengthening Wheat Seed Systems for Farmers in Pakistan

- Smallholders living in far-flung areas of Pakistan have limited access to quality seeds of new wheat varieties and, as a result, grow old and obsolete varieties.
- Strengthening formal seed systems or informal seed systems is key to improving wheat productivity in the country. This is possible only by fast-tracking the deployment of new high yielding, rust resistant wheat varieties in these areas, and initiating village-based seed production to improve availability of quality seeds at farmers' doorsteps, which will ultimately help enhance overall wheat productivity.
- This approach is also one of the most practical ways of strengthening informal seed systems.

In view of the above realities, CIMMYT included certified and basic seeds of 13 new high yielding and rust resistant wheat varieties in village-based seed production trials, participatory varietal selection trials, and paired plot comparisons involving more than 7,000 smallholder farmers across Pakistan. The initiative is helping to identify, validate and popularize new varieties, replace old varieties and generate seeds of the new varieties that can flow from farmer-to-farmer in far-flung areas.

Of all project participants in 2015-16, nearly 500 farmers from 27 districts and 4 provinces participated in village-based seed production on nearly 600 acres of land (Figure 1) which are conservatively estimated to produce around 850 tons of seeds.

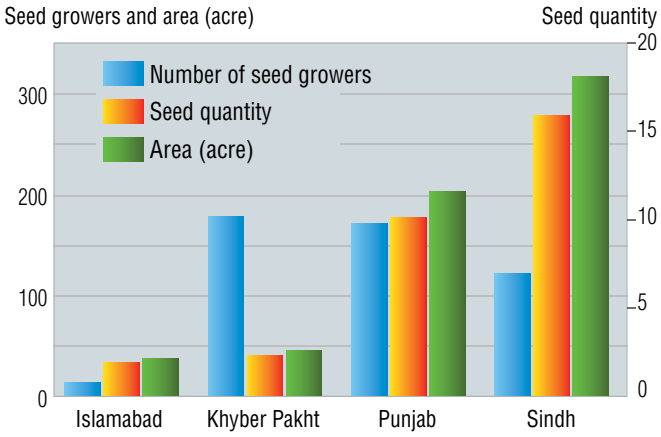


Figure 1. Summary of village-based informal seed production.

A glimpse of participants in a workshop on "Village-based Seed Production and Seed Flow through Farmers" held on March 4, 2016, in Islamabad.

To contribute to sustaining all the activities of AIP-Wheat, systematic efforts have been made to link a few of these farmers with private seed companies while majority of them with village-based groups. The project is working with more than 24 Village Support Organizations (VSOs) or Local Support Organizations (LSOs) associated with National Rural Support Programs (NRSPs) in 23 districts of Punjab, Sindh and KP Provinces. Members of 23 groups involved in village-level seed production were trained on wheat seed production and quality management, seed business and seed provisioning so they can emerge as business-oriented seed groups in their respective areas. These groups were trained to manage seed quality after harvest, including drying, cleaning, grading, safely storing, packaging, labeling and marketing seed. In coming years, they will also be supported with seed graders and other items that are vital for improving wheat seed quality. These groups will produce and market seeds of recently released wheat varieties.

To improve their understanding of village-based informal seed production and enhance their capacity, a one-day workshop on "Village-based Seed Production and Seed Flow through Farmers' Groups" was organized on March 4, 2016, by CIMMYT in partnership with NRSP at NRSP Sehla farm, for NRSP district heads, CIMMYT representatives and other seed experts. The main objective of the workshop was to review the activities that have already been done and make these seed groups more effective. All these efforts are expected to help make the new wheat varieties available to farmers, the ultimate end users, at their doorsteps.

Seed production plots of Benazir-13 in a farmer's field in Tando Muhammad Khan, Sindh Province, Pakistan.

Maize

AIP-Maize is led by the International Maize and Wheat Improvement Center (CIMMYT).

For feedback and queries, contact Abdurahman Beshir ISSA (CIMMYT-Pakistan): A.ISSA@cgiar.org.

Energizing Pakistan's maize seed sector

Maize Products Allocated to Partners

Some CIMMYT maize products have white kernels.

AIP-Maize interventions focus on introducing and developing climate resilient, biofortified, biotic stress resistant maize and enhancing Pakistan's maize seed sector. During the last four seasons, the program has tested early, intermediate and late maturing varieties, biofortified maize varieties, as well as varieties that are resistant to stem borers and tolerant to low nitrogen stress. In 2014 and 2015, more than 1,000 maize genotypes (sourced through CIMMYT's regional maize breeding hubs mainly from Colombia, Mexico and Zimbabwe) have been tested across Pakistan, including areas in the maize belts of Punjab

Province and in selected areas of Sindh and Balochistan Provinces with huge potential for maize production.

In two years' time, AIP's national partners were able to identify more than 80 CIMMYT-derived maize hybrids and open-pollinated varieties (OPVs) adapted to diverse ecologies. Based on field performance and requests from national programs, CIMMYT allocated 36 maize hybrids and 13 OPVs to 11 public and private partners for registration, commercial release, further seed scale-up and delivery in the target areas of Pakistan. Product allocation was based on the ability of NARS and seed companies to deliver maize products to end users, particularly small-scale farmers in areas where private sector interventions are low. This product allocation and local seed production will enhance the availability, accessibility and affordability of maize seeds and varieties in Pakistan. These interventions are expected to lower seed prices by at least 50 percent from their current levels and will help a competitive and healthy local maize seed industry emerge in Pakistan.

Handing Over CIMMYT Parental Lines

Eleven AIP-Maize national partners received 100 CIMMYT maize inbred lines to start local seed production. The parental lines/ breeder seeds, which will produce both white and yellow maize varieties, biofortified maize hybrids and early maturing open-pollinated maize varieties, were handed over to national public and private partners during a national ceremony held on Feb. 17, 2016, in partnership with the PARC. The provision of parental lines of finished CIMMYT maize products is helping partners to establish sustainable seed businesses and diversify their product portfolio. The products from CIMMYT's maize parental lines are expected to alleviate the limited varietal options, particularly in areas where formal seed systems are weak.

Handing over CIMMYT's product allocation certificate to a private seed company.

Launch of the First Biofortified Maize in Pakistan

USAID Mission Director John Groarke distributing QPM hybrids to farmers.

Quality protein maize (QPM) hybrids are the first batch of maize products from AIP to reach Pakistani farmers. A ceremony was held on Feb. 17, 2016, in Islamabad to officially launch and distribute demo seeds of two biofortified maize hybrids to farmers. The two QPM hybrids, originally from CIMMYT-Colombia, were temporarily named QPHM200 and QPHM300 by the National Agricultural Research Center (NARC). Currently, these hybrids are being registered with the Federal Seed Certification and Registration Department. Their demo seeds will reach about 300 farmers during the current season and further seed scale-up is expected to deliver more certified seeds by 2017.

RICE

AIP-Rice is led by the International Rice Research Institute (IRRI).

For feedback and queries, contact Abdul Rehman (IRRI): a.rehman@irri.org.

Hermetic Storage Improved the Grain Quality with Aging

Hermetic storage test at NARC.

With the help of post-harvest experts and in collaboration with GrainPro Inc., IRRI developed a special Super bag for small-scale rice farmers to protect the viability and quality of rice stored in the houses. The IRRI Super bag reduces post-harvest losses and can help preserve product freshness and quality. Super bag reduces the flow of both oxygen and water between the stored grain or seed and the outside atmosphere. When properly sealed, respiration of grain and insects inside the bag reduces oxygen levels from 21 percent to 5 percent. This reduces the amount of live insects to less than 1 insect/kg of grain without using insecticides, often within 10 days of sealing.

AIP-Rice carried out an experiment to evaluate hermetic bags along with jute and polypropylene (PP) bags in early 2015 at NARC Islamabad. Initially, the storage period was to be six months, but the experiment continued for one year to determine the effect of aging on rice seed and grain quality. After one year of paddy storage, differences in moisture level, physical grain quality, stored grain insect pests and germination were evaluated. The results (Figure 1) revealed that the moisture level drastically increased during storage in jute bags (by 25.3 percent) and PP bags (by 24.3 percent) and remained the same (at 13.6 percent) in hermetic bags even after one year of storage. Eventually, higher levels of moisture contents induced the incidence of stored grain pests. i.e., 150 insects/kg and 5 insects/kg in jute and hermetic bags, respectively. Hermetic storage also improved seed germination by 20-25 percent. The data on physical grain quality (Figure 2) revealed that head rice recovery was far lower in rice stored in jute and PP bags than in rice stored in hermetic bags, which was 58.9 percent and the recommended one less than 50 percent.

This means that Super bag reduced the flow of both oxygen and water between the stored grains and the outside atmosphere. The stability of controlled grain moisture inside the bag prevents wetting and drying of grain. This stability reduces the extent of grain cracking and so head rice recovery is higher upon milling.

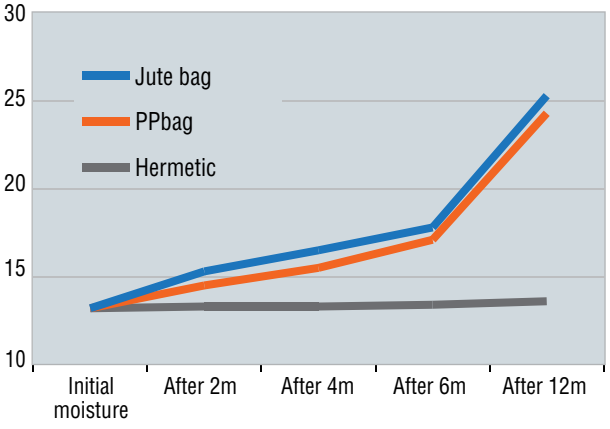


Figure 1. Moisture levels over time.

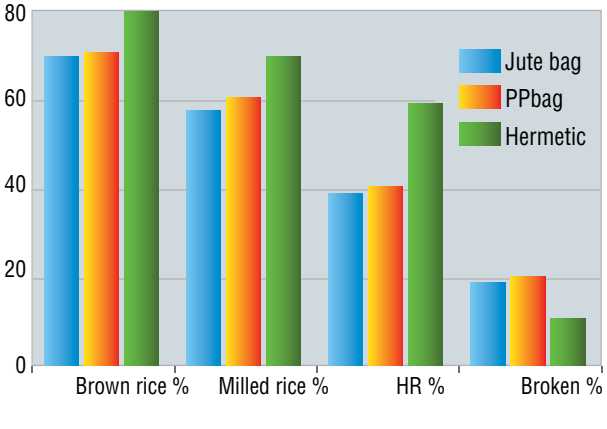


Figure 2. Physical grain quality under different storage systems.

Socioeconomics

AIP-Socioeconomic is led by the International Maize and Wheat Improvement Center (CIMMYT).

For feedback and queries, contact Akhter Ali (CIMMYT-Pakistan): a.akhter@cgiar.org.

AIP-Socioeconomics Organized a Meeting to Plan Follow-up Surveys

On March 9, 2016, a meeting was organized in Islamabad by the USAID-funded Agricultural Innovation Program (AIP) to plan follow-up surveys for evaluating project intervention impacts.

The meeting brought together development and agricultural professionals to discuss the progress of AIP and further plan the follow-up surveys including strategy, methodology, sampling techniques and data analysis. Representatives of USAID-Pakistan, CIMMYT and AIP's primary partners including the International Livestock Research Institute, the International Rice Research Institute, the World Vegetable Center and the University of California, Davis, attended the meeting.

"This is the right time to assess AIP's performance, and we need to focus on the demands of the farmers, their challenges and work out a way for them to improve their agricultural productivity," said Imtiaz Muhammad, CIMMYT country representative.

Nazim Ali, AIP activity manager, USAID Pakistan, explained to participants the importance of follow-up surveys for project evaluation and impact assessment. AIP primary partners shared lessons learned from baseline surveys and presented their work plan for follow-up surveys. Akhter Ali, CIMMYT agricultural economist, spoke about the methodology, sampling techniques, geographic spread and data analysis techniques used in follow-up surveys. He also shared the summary of baseline surveys.

After discussing and exchanging views on the AIP follow-up survey work plan, the participants reached consensus on the following points:

- Follow-up survey questionnaires must be aligned with the indicators that AIP is currently reporting to USAID;
- Follow-up survey questionnaires will be refined internally;Women enumerators should collect sex-disaggregated data sets;
- For all AIP interventions, samples need to be representative;
- The agreed time frame for completing the follow-up surveys is (tentatively) December.

AIP partners agreed on documenting the impact of all the interventions through follow-up surveys. These joint efforts will enable smallholder farmers to improve their agricultural productivity and livelihoods across different agro-ecological regions of Pakistan.

Photo: Amina Nasim Khan/ CIMMYT

Imtiaz Muhammad sharing his views on the importance of follow-up surveys for improving Pakistan's agricultural productivity.

Social Scientists from Punjab Trained on SPSS and STATA Software

CIMMYT, in partnership with Comsats Institute of Information Technology (CIIT) Lahore, organized a two-day training course on SPSS and STATA software in Lahore from January 25 to 26, 2016. More than 40 faculty members were trained to use SPSS and STATA software.

Agronomy

AIP-Agronomy is led by the International Maize and Wheat Improvement Center (CIMMYT).

For feedback and queries, contact Imtiaz Hussain (CIMMYT-Pakistan): i.hussain@cgiar.org.

AIP Promotes Zero-tillage Wheat Planting in Sindh and Balochistan Provinces

CIMMYT, in partnership with national partners – namely, the Agricultural Research Institute (ARI), Jaffarabad; the National Sugar and Tropical Horticulture Research Institute (NSTHRI), Thatta; and the Department of Agriculture Research Balochistan, promoted zero-till wheat planting after rice among farmers in Thatta, Shikarpur and Jacobabad Districts, Sindh Province, and Jaffarabad in Balochistan Province. Provision of zero-tillage drills and their use through service providers helped 130 farmers plant wheat in these districts.

Farmer field day at Jaffarabad, Balochistan province.

National partners disseminated zero-till wheat planting technology to 650 farmers in the rice-wheat areas of Sindh and Balochistan Provinces during six field days and held training sessions in Jafarabad, Shikarpur and Thatta Districts. In a field day held in Gandkaha and Jaffarabad Districts of Balochistan on February 26, Javaid Tareen, DG Agriculture Research, expressed his appreciation for the efforts of USAID, CIMMYT, PARC and Agriculture Research Balochistan aimed at improving farmers´ livelihoods in Balochistan Province. He said that the provincial government would also make an effort to upscale resource conservation technologies by providing ZT drills and laser land levelers in the province.

Zero till wheat planted in Thatta, Sindh province.

Farmers in the Rice-wheat Area of the Punjab are Happy with the Performance of the Zero-tillage Happy Seeder

CIMMYT, in partnership with its national partners Adaptive Research Punjab, Rice Research Institute–Kala Shah Kaku, Wheat Research Institute-Faisalabad and Engro Fertilizers, provided eight ZT Happy Seeders to farmers in the rice-wheat area of the Punjab. This helped 92 farmers in Gujranwala, Nankana Sahib, Faisalabad, Sialkot and Sheikhupura Districts to plant wheat on 650 acres under heavy combine-harvested rice residue.

Farmers Basit, Rabnawaz, Rana Rafi and Chand Dahr are happy and they decided to use the ZTHS to plant wheat on their farms and advised their fellow farmers to use the innovative method, which is cost effective, as on average they were able to reduce cultivation costs up to Rs 5,000 per acre. Participating farmers also visited wheat plots planted with locally modified ZT Happy Seeders in Nankana Sahib Punjab. During a field day held at Mangu Taru, Nankana Sahib, Dr. Muhammad Imtiaz informed the farmers that AIP would be promoting the use of ZTHS by supporting local manufacture of the Happy Seeder by private factories in the project area. Punjab's extension department has recommended to the Punjab government to subsidize the out-scaling of the AIP-introduced ZTHS in the rice-wheat areas.

VEGETABLES

AIP-Vegetables is led by the World Vegetable Center (AVRDC).

For feedback and queries, contact Mansab Ali (AVRDC): mansab.ali@worldveg.org.

USAID-Pakistan Mission Director John Groarke Visited AIP's Protected Vegetable Facility at NARC, Islamabad

On February 17, 2016, USAID-Pakistan Mission Director John Groarke visited the tomato demo plots of USAID-funded AIP at the National Agriculture Research Center (NARC) Islamabad.

Three progressive vegetable farmers shared their experiences and thanked the American people for their support.

USAID-Pakistan Mission Director listens to farmers explain the process of managing the tomato crop with improved production practices provided by USAID-funded AIP.

AIP-AVRDC beneficiary Saqib Rafiq presents fresh vegetable produce from his farm to the USAID-Pakistan Mission Director.

Shuga Declared an Onion Seed Village

On February 25, 38 onion growers of Shuga village, Bunir District, KP Province attended a training session on onion seed crop management organized by AIP-Vegetables in partnership with Agriculture Research Institute (ARI)–North, Mingora-Swat, Khyber Paktunkhwa. The training was followed by a practical demonstration of how to maintain genetic purity of onion variety SWAT-1 by extensively rouging off-type plants and tackling diseased plants on time.

Happy farmers with AIP-Vegetables, CIMMYT and Agriculture Department officials.

The trainee farmers were thankful to USAID for its support through AIP and ARI, Mingora and for providing continuous support and guidance. They shared the problems they face regarding seed crop growth and management, insects and diseases, and marketing and threshing.

During the closing ceremony, CIMMYT Country Representative Muhammad Imtiaz officially declared Shuga an Onion Seed Village and ensured assistance from AIP to help farmers improve their production quality. He also announced the provision of onion seed thresher and small implements for the Shuga grower association under the AIP platform.

Onion seed crop management training and Shuga village is declared an Onion Seed Village.

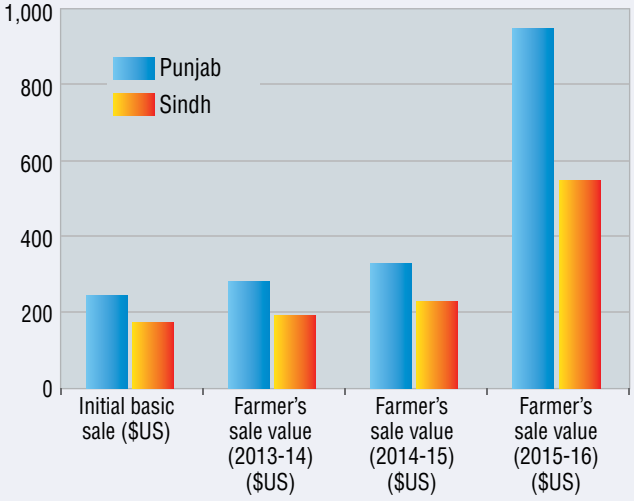
Economics of Vegetable Production

With the help of socioeconomists from AIP-Vegetables, the economics of vegetable production in the off-season, improved mungbean production and vegetable value chains were assessed at different locations of Pakistan.

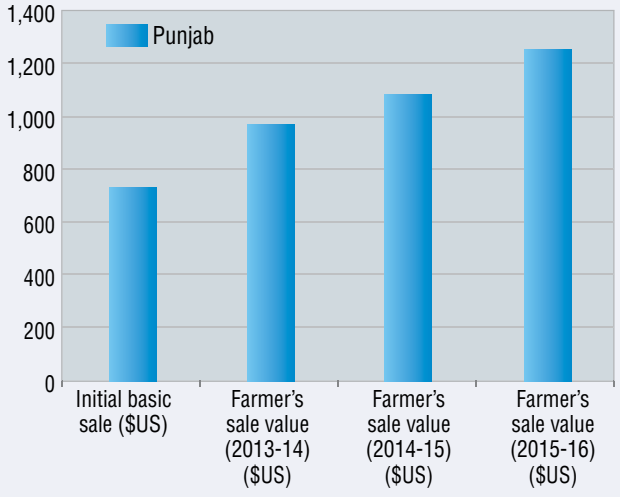
The average tomato production cost in Sindh and Punjab Provinces is US $2,148 and 4,763 per hectare, respectively. Farmers' average net profits from tomatoes in DK Nizamani, Thatta and Thoha Mehram Khan, Talagang have been calculated at nearly US $5,483 and 9,484 per hectare, respectively, for 2015-16. Yields of up to 1,258 kg per hectare, with a market price of US $1.3 per kg, have been recorded. Total net profit has been estimated at US $1,250 per hectare after deducting a production cost of US $411 per hectare.

Onion seed yield of up to 370 kg per hectare with a market price of US $25 per kg was recorded in Sindh Province obtaining a net profit of US $6,172 per hectare after deducting a production cost of US $2,897 per hectare. Similarly, the onion yield recorded Balochistan Province is up to 370 kg per hectare with market price of US $20 per kg for net profit of US $4,327 per hectare after deducting a production cost of US $2,928 per hectare.

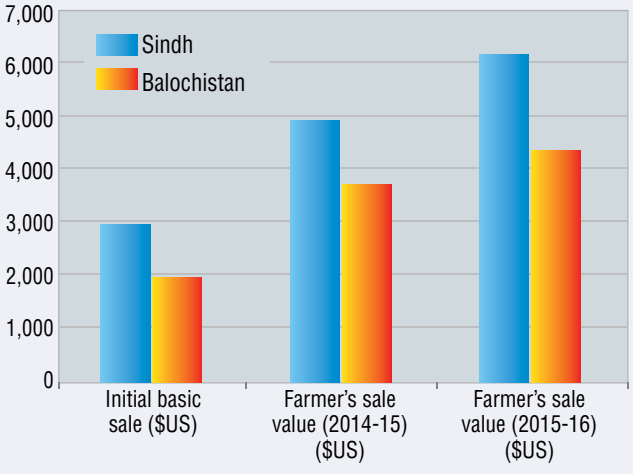
In comparison, the chili yield was 2,470 kg per hectare with a good price of US $1.7 per kg and a net profit of US $3,075 per hectare after deducting a production cost of US $1,162 per hectare.



Tomato production cost in Pothwar-Punjab Province.



Mungbean production portfolio in Pothwar-Punjab Province.



Costing portfolio of onion and chili in Sindh and Balochistan Provinces.

Perennial Horticulture

AIP-Perennial Horticulture is led by the University of California Davis (UC Davis).

For feedback and queries, contact Louise (UC Davis): lferguson@ucdavis.edu.

Kinnow Citrus Growers Trained in Good Agricultural Practices

Photo: UC Davis

Mr. Shakil teaching the pack-house labor about picking citrus from trees, during the February 06, 2016, training.

From January to March 2016, AIP-Perennial Horticulture carried out a range of activities on citrus value chain management focused on nursery growing, orchard management, post-harvest management and value addition. In partnership with the Citrus Research Institute Sargodha, a total of 1035 citrus growers including 97 women attended 25 trainings, field days and workshops organized in Sargodha and Toba Tek Singh Districts of the Punjab. As a result of these trainings, 104 citrus growers who manage 2,594 acres are now implementing good agricultural practices. The outcome of these activities, including their economic benefits, will be apparent in the next harvest.

Grape Growers, Public and Private Sector Representatives Trained on Improved Vineyard Management Technologies

AIP's commissioned research projects, in partnership with Pir Mehr Ali Shah University of Arid Agriculture Rawalpindi, are supporting the newly developing grape industry and carried out seven trainings in Islamabad during first quarter of 2016:

- Establishment of Demonstration Model of Vineyard Trellising System (25 participants)
- Winter Season Vineyard Management (18 participants)
- Water Conservation through Cover Crops in Vineyard Management (18 participants)
- Transfer of Viticulture (grapes study) Technology to the Growers of Baluchistan and Southern Punjab (35 participants)

As a result of these activities, four farmers managing 50.96 acres adopted improved technologies.

Photo courtesy of UC Davis

Pruning demonstration to growers during winter season vineyard management training on February 20, 2016 (AAUR Research Farm, Koont Farm Chakwal).

Evaluating Early Performance of New Mango Accessions in the Field

During March 2016, mango accession project researchers monitored 13 farmer sites in Multan and Vehari and evaluated the growth and adaptability of mango accessions previously distributed under AIP. All the accessions were performing well and had a survival rate of more than 60 percent. Growers were given on-site management training on these accessions. These efforts will eventually help to prolong the harvest season, expand the market window for the growers and offer a wider variety of mangos to consumers.

Photo courtesy of UC Davis

Mango accessions being evaluated at a farmer's property in Multan during the March, 2016, training.

Post-harvest Handling of Olives for Quality of Oil

The first Olive Oil Taste Panel was organized by UC Davis, AIP's primary partner, in collaboration with the Agriculture Research Institute, Peshawar, on March 22, 2016. The panel consisted of 30 members including 28 men and 2 women farmers, researchers and food scientists. The panel determined the best post-harvest practices for olives by evaluating olive oil quality. The oil extracted from semi-ripe olives transported in bags and stored for no more than 24 hours before oil extraction was ranked the best by the panel.

Photo courtesy of UC Davis

Olive oil taste panel organized at ARI Peshawar on March 22, 2016.

Harnessing the Potential of Marginal and Wastelands through Cultivation of Fresh Ber Fruits and Ber Value-added Products

In partnership with the University of Agriculture, Faisalabad, UC Davis organized a Farmers' Field Day at UAF's main campus on March 2, 2016. More than 800 ber plants of nine high yielding cultivars (namely, Anokee, Dilbahar, Dehli White, Karella, Bahawalpur Selection, Mehmood Wali, Imran 9, Gola and Seedless) were distributed to 126 farmers, students and representatives of the Government Research Institutes of Punjab, Sindh and Baluchistan Provinces. Ber trees can grow in marginal and wastelands where most cereal crops grow poorly. In addition, 2 trainings with 76 participants (including 15 men) were organized during March, 2016, to promote value-added uses of ber.

Photo courtesy of UC Davis

Louise Ferguson distributing high yielding ber plants to farmers during a farmers' field day at UAF on March 2, 2016.

Rehabilitation of an Old Pistachio Block at ARI Quetta, Balochistan Province

The Agriculture Research Institute Quetta and UC Davis are cooperating to rehabilitate the neglected pistachio orchard at the ARI Quetta Research Station. In addition to improving irrigation, pruning and fertilization, the trees were budded with two exotic varieties, Peters and Kerman, that were imported from California, USA, in March 2016. This block will be used to teach good agricultural practices to pistachio growers. The bud wood from these plants will be available for distribution to pistachio farmers in 2017.

Photo courtesy of UC Davis

First year harvest from a 40-year-old pistachio orchard after rehabilitation under AIP at ARI Quetta.

Inauguration of the Basic Post-harvest Lab at ATI Sakrand

The basic post-harvest lab established under AIP-Perennial Horticulture at Agriculture Training Institute, Sakrand, was inaugurated by Louise Ferguson on February 22, 2016. This lab will be used to perform post-harvest tests on guavas and mangoes.

Start of the First Post-harvest Management Course at ATI Sakrand

The first semester of a two-semester course on "Harvest and Post-harvest Management of Summer Fruits and Vegetables" started in February 2016 with 104 students (94 men and 10 women) enrolled in the third semester of their two-year Field Assistant diploma program.

Human Resource Development

AIP-HRD is led by the University of California Davis (UC Davis).

For feedback and queries, contact Thomas L. Rost (UC Davis): tlrost@ucdavis.edu.

Graduate studies

In His Own Words: Learning to Sail in New Soil to Bring Back Knowledge

Ismail Khan, AIP MS scholar, Mississippi State University

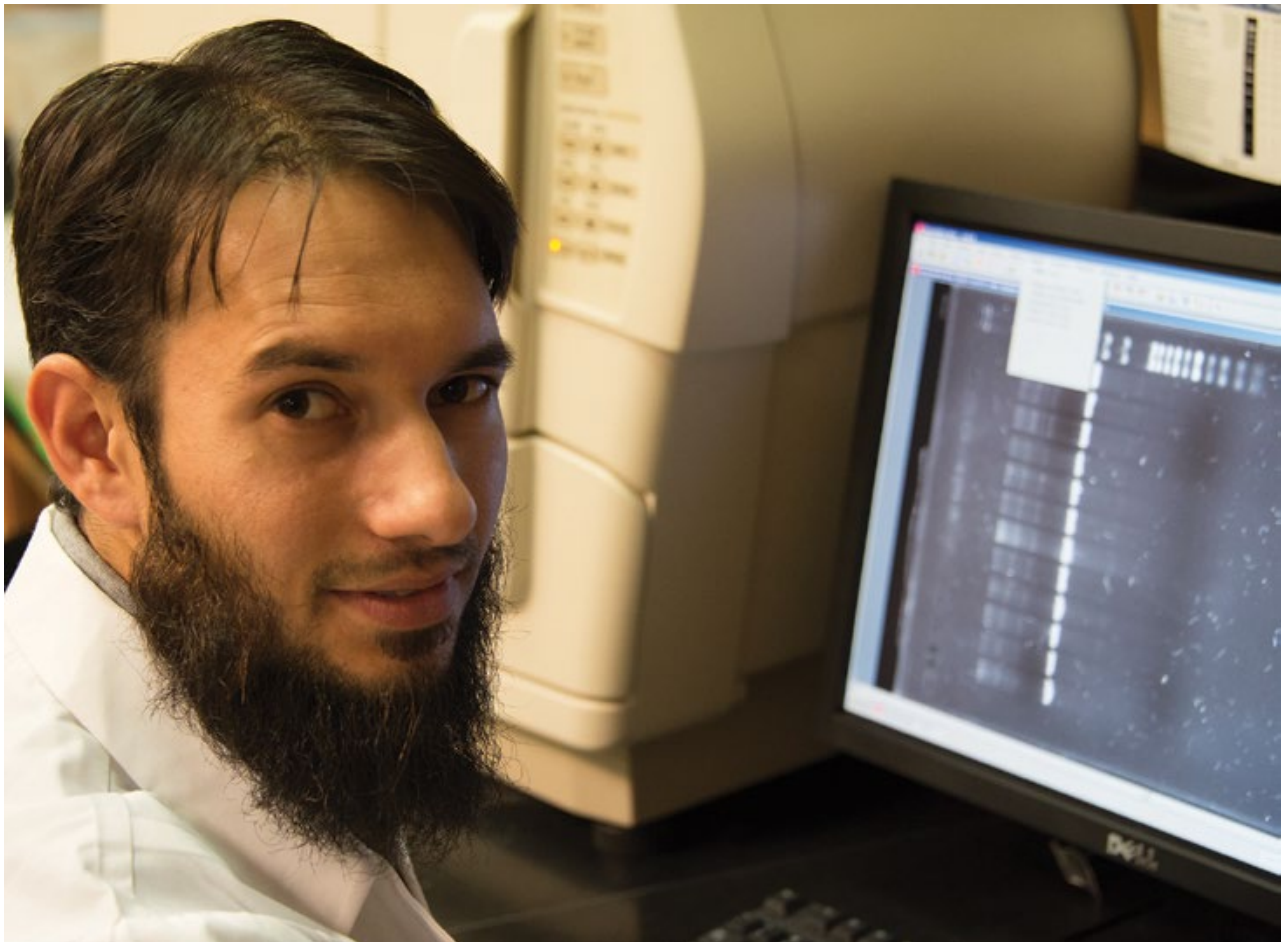
Studying in a university in the US is among the most desired dreams of Pakistani youth. To fulfill such a dream in a developing country is very challenging. My elementary and undergraduate education in Peshawar, city of Khyber Pakhtunkhwa province of Pakistan, was the fundamental step for achieving this milestone.

The selection process of USAID-funded Agricultural Innovation Program (AIP) scholarship though was very tedious but with the support from CIMMYT and University of California, Davis made it smooth.

In the US, the cultural difference became apparent from day one. Adapting to new environment, culture, southern accent marked my first semester. From the very beginning I was encouraged thus motivating me to grow personally and professionally. Equally helpful were friends from across the globe that afforded me a delightful learning experience.

The difference in education standards was indeed an arduous task to overcome in a limited time period. The consecutive assignments, quizzes, presentations and exams required serious time management skills. Submitting online assignments, take home exams, weekly reports and meetings were the new technical aspects of academics that I came to interact with for the first time. Next, working under major and co-major professors has been very encouraging and promoting. The hard-work of my professors has improved my academic, scientific, writing and analytical skills. I learned to work in different labs. My ongoing project involves two different departments, Biological sciences and sustainable bio products, which is currently in the initial stage of plant genetic transformation. I am looking forward to the chemical analysis to be done on the plant sugars.

Studying at Mississippi State University has enhanced my learning capabilities, education, knowledge and social activities. Poster presentation at the Graduate Student Research Symposium (GSRS) was my first exposure to a large scholarly audience. My interpersonal and



presentation skills have been enhanced and I have gained confidence in interacting with professors and judges. Having active roles within student organizations, Pakistan Student Association and Forest Products Society Student Chapter (FPS-SC) allowed me to work with students from all over the world.

This scholarship program will help me contribute in the development of agriculture and biotechnology science, but also transfer that knowledge to Pakistani universities.

I am very grateful to USAID, CIMMYT, UC Davis and all those who contributed to this program, for this opportunity for making me a thorough professional.

Vocational Training

During this quarter, four workshops and a symposium were organized with a total of 210 participants including 162 men and 48 women.

Title of Event	Men	Women
One-day "Scientific Writing Workshop" at AAUR	18	16
One-day symposium on "Rural Advisory Services in Pakistan in the Scenario of Information Communication Technologies (ICTs)" at the University of Sargodha	76	12
One-day training on "Holding Effective Seminars, Engaging the Audience" at UAF	43	7
Two-day training on "Running Effective Workshops" at Islamabad	16	9
One-day training on "Proposal Writing" at NARC, Islamabad	9	4

All the trainings received high scores during post training evaluation.

Photo courtesy of UC Davis

Participants in the Scientific Writing Workshop held by Mark Bell in Islamabad in January, 2016.

E-PakAG

AIP-E-PakAG is led by the University of California Davis (UC Davis).

For feedback and queries, contact Mark Bell (UC Davis): mark.andrew.bell@gmail.com.

Educating Women on Safety Procedures during Pesticide Use

Photo courtesy of UC Davis

School girls from Joiya Okara village being trained on precautionary measures to be taken while using pesticides, February 23, 2016.

After a needs assessment survey, AIP's E-PakAG, in partnership with AAUR and private pesticide company Monsanto, organized a training on February 23, 2016, at the government girls school in Joiya village, Okara, Punjab Province. The objective was to educate young girls on the hazards of pesticide use and relevant safety practices. During the training, interactive videos were used to teach girls methods of avoiding pesticide damage.

This newsletter is made possible by the support of the American people through the United States Agency for International Development. The contents are the sole responsibility of the International Maize and Wheat Improvement Center and its partners, and do not necessarily reflect the views of USAID or the United States Government.

Executive Editor: Genevieve Renard

Edited by: Amina Nasim Khan

Reviewed by: Dr. Md. Imtiaz

Layout/Design: Eliot Sánchez Pineda

Contact Us:

CIMMYT - Pakistan Office

CSI Building, NARC, Park Road Islamabad, Pakistan

Phone: +92 51 925 55 22-24

Fax: +92 51 925 54 34

Website: www.cimmyt.org

For AIP newsletter: Shamim Akhtar

(s.akhtar@cgiar.org)