PICS Newsletter
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Purdue Improved Crop Storage

Insight into PICS during 2018

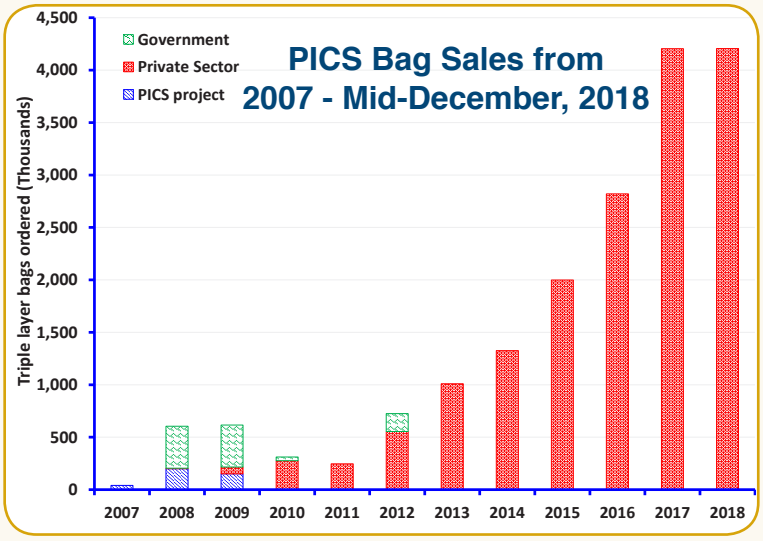
Dieudonné Baributsa; Purdue University, USA

As 2018 draws to a close, there are a lot of PICS-related achievements to celebrate. Demand for bags is increasing and sales continue to grow – PICS sales worldwide now total 18 million bags since 2007. Conservatively, that is enough capacity to store well over five million tons of grain if each bag was used three times. Our PICS program continues to expand into new countries in Africa, Asia and Latin America. More and more companies are being licensed to manufacture and distribute the PICS technology. Recognizing the business opportunity, the private sector is ramping up PICS commercialization to reach millions of additional farmers.

In 2018 thus far, over 4 million bags have been sold worldwide. We expect the numbers for this year to increase as we are still finishing the harvest season in several countries, including in Ethiopia, Nigeria, Ghana, and Burkina Faso. Sales continue to increase because the private sector is innovating to improve the availability of PICS bags among farmers. Novel approaches are being rolled out, for example, the youth retailer model. Young people are coached and trained on how to market PICS bags in villages and rural markets. This is proving to be effective in increasing sales of PICS bags in Ethiopia and may be useful elsewhere.

Countries around the world where PICS bags have been introduced.

To reach larger markets outside Africa and align the supply chain so that bags are accessible to many more farmers around the world, PICS Global LLC continues to license manufacturers and distributors in new and existing PICS countries. This year, licenses were given to six manufacturers and distributors in India, Ivory Coast, Guatemala, and Burkina Faso. PICS Global's first licensee in Latin America, Disagro Inc. - Guatemala, will manufacture and supply PICS bags to several countries in the region. We expect more licensees to come onboard in the near future as the demand for the bags grows.



Awareness of PICS bags continues to increase in new and existing PICS countries. Development and government agencies are promoting the PICS technology. In 2018, Purdue and partners secured more than $5 million to create awareness and improve availability of the PICS technology. This additional support included prizes received for scaling-up PICS, grants to promote PICS bags for seed storage, and funding to introduce the technology in Latin America. Truly, it has been thrilling to see PICS expanding from Africa to additional regions of the world.

Titus Ibui, Bell Industries, accepts the award for scaling up of PICS in Kenya.

PICS Helps Earthquake-Affected Households in Nepal

Gokul Paudel, CIMMYT - Nepal

On April 2015, a 7.8 magnitude earthquake struck the mid-hills of Nepal. This was followed by another quake equally as large on May 15, 2018. There was widespread damage to houses, businesses, and farms. Smallholder farmers in the mid-hills of Nepal lost stored grain, seed, standing crops, storage structures, tools, machinery, and livestock. The earthquakes affected a total of fourteen districts, taking the lives of over 9,000 people and leaving potentially millions of people in agricultural- dependent regions

PICS bags demo in Kavre before distributing to EQ affected communities.

without food, seed, and other sources of livelihood. In the aftermath of the earthquakes, recovery programs responded. The International Maize and Wheat Improvement Center (CIMMYT) in Nepal distributed 58,000 PICS hermetic storage bags to store seeds of maize, wheat, rice, and vegetables for the affected smallholder farmers. Traditional storage infrastructures farmers used to keep seeds and grains were destroyed by the earthquake. Used properly, PICS bags protect seeds and grains of cereals and vegetables from adverse weather and pests. Thanks to USAID and CIMMYT, PICS bags were made available to earthquake-afflicted smallholder farmers. Recipients of the PICS bags were shown how to properly store seeds in the bags. Government representatives from different districts and agriculture sub-centers participated in the PICS demonstration and distribution program.

After almost two years of distribution of PICS bags, a recent interaction with the recipient farmers indicate that PICS bags helped farmers reduce the pest damage. Ashok Khatri, a farmer from Kavre district said that "wheat seeds stored in PICS bags were not affected by the pests, while wheat grains stored in the traditional storage methods were affected by the pests".

PICS bags demo in Kavre before distributing to EQ affected communities.

Generally, farmers store seed for planting in the PICS bags while their bulk grain continues to be stored with traditional storage methods such as bins and jute bags, in which it is highly susceptible to stored product pests. While the broader impact of PICS bags in improving stored product pest damage loss in the earthquake affected districts of Nepal has not yet been assessed, discussions with several PICS bag recipients and earthquake victims indicate that PICS bags helped reduce the stored pest damage and maintain the quality seed of maize, wheat, rice, and vegetables in the mid-hills of Nepal.

PICS bags transport to Nuwakot district.

This PICS activity is as part of the Cereal Systems Initiatives for South Asia – Earthquake recovery support program which was funded by the United States Agency for International Development.

Scale Up Conference

Suzanne Neilson, Purdue University - USA

Purdue University hosted the Scale Up Conference (https://ag.purdue.edu/scaleup/Pages/default.aspx) in West Lafayette, IN, on Sept. 25-27, 2018. Over 200 persons from 20 countries, representing over 90 organizations, attended this conference focused on how to best scale agricultural technologies and innovations to impact millions in the developing world. This was the first multi-day conference on this topic, and included presentations, panel discussions, case studies, and breakout group discussions. The objectives of the conference were to enhance understanding of scale up technologies, establish a network among agricultural experts working in developing countries, and aid in development of technologies that will feed our growing global population. The event kicked off with a keynote address from Akinwumi Adesina, the 2017 World Food Prize laureate, President of the African Development Bank, and a Purdue alumnus. To set the stage for his talk, three short videos of successful scale up examples were shown, including PICS (https://www.youtube.com/watch?v=8n-wT50XPwnI&feature=youtu.be). The conference website (see link) has been updated to include the following: links for videos shown, video recordings of featured presentations and panel discussions, slides used in presentations, abstracts of posters, and photos from the Scale Up Conference. The website also includes information about a follow-up event, the "Scaling Up Impact in Agriculture", at the World Food Prize meetings in Oct. 2018.

The PICS exhibit showcases how hermetic technology works as well as where PICS is active throughout the world during the Scale Up Conference Poster Display.

Anastasia Njoroge, Purdue University, Mr. Akinwumi Adesina, president of African Development Bank and his wife at the Scale Up reception..

Dr. Dieudonné Baributsa participates in the panel discussion "Linking Planning with Scale in Mind to Scale Up Successes."

An arial view of the Scale Up Conference participants inside Loeb Theater at Purdue University.

PICS Bags for Green Coffee Storage

Adolph Kumburu; Café Business Consult Limited - Tanzania

I operate a coffee roasting plant in Songea in the Southern Highlands of Tanzania. My plant produces roasted coffee beans and ground coffee under the brand name "Magic Bean Coffee". Production capacity of the plant is 300 kgs per day or 7.5 tons per month, equivalent to 90 tons per year. The main raw material is Arabica coffee beans plus some Robusta for blending. My primary customers are high end supermarkets in the larger cities of Tanzania. Some is exported as well.

Green coffee beans stored in a PICS bag.

Adolph Kumburu in his small coffee plant in Songea, Tanzania.

To be competitive in the market, I need a continuing supply of raw (green) coffee so I can produce the best quality roasted products. However, coffee production season in Tanzania lasts only 5 months - from August through December. During this limited time window I must procure enough green coffee beans to last the whole year.

Unless they are kept in a controlled temperature warehouse, green coffee beans can be stored for only 3 months. Beans stored longer than this begin to lose quality. This storage quality loss has been a continuing challenge for small-scale coffee roasters like me who can't afford special warehousing storage.

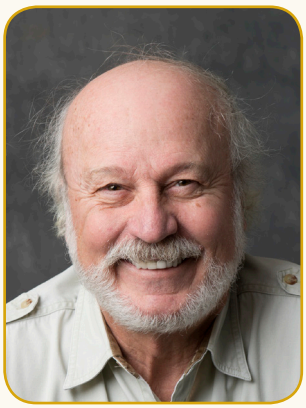
Varieties of coffee roasted from green coffee beans stored in PICS bags.

When I was first introduced to the PICS bags, I knew I had found a solution to my time-sensitive storage dilemma. PICS bags do a wonderful job in preserving the quality of my green coffee beans. I can now buy raw coffee at the beginning of the season in August and maintain the same quality for my roasting in June/July of the following year. This is a major success for my business as it allows me to be market competitive year round.

View the PICS video that was highlighted at the Scale Up Conference

From all of us at PICS -

The PICS Family Wishes Dr. Murdock a Very Happy Retirement!



"In his long career at Purdue University, Dr. Larry Murdock pushed back the boundaries of science while working on problems that made a difference for some of the most vulnerable people in the world, and did this with a generation of scientists he trained and mentored. Teaching is what brought him to the university, and as an educator committed to addressing real world problems, he integrated his passion for educating students with his desire to pursue consequential research. His research focused on physiological and biochemical systems in insects vulnerable to plant defense proteins. Many of these efforts were an important prelude to what drove the rest of his career - applied research on cowpea production and storage intended to help millions of resource-poor farmers in Africa. A serendipitous observation from his research to manage cowpea weevil pests identified hermetic storage as a potential treatment option. This gave birth to the Purdue Improved Crop Storage (PICS) technology that changed the way cereal and pulse grains are being stored in Africa. Larry set a high mark for all of us. It has been my honor to be his colleague."

Steve Yaninek

"I tip my hat and honor the Chevalier, the Distinguished Professor and First Statesman of Cowpeas - Larry Murdock."

TJ Higgins

Larry and TJ Higgins.

"The Kirkhouse Trust often sees PICS bags in use on visits to its breeding projects. They are clearly much appreciated as a cost effective, safe and simple way to prevent losses of precious seed. So many thanks to you and your colleagues for bringing us this technology. And, please, don't let retirement be the end of your creative life!"

Ed Southern

"I have known Larry for the last 9 years but it seems like we knew each for decades. Larry is a selfless man who has been a blessing to many BUT particularly to me. His loves for Africa and his drive to help the least among us led to the development of the PICS technology that is empowering and changing lives in and beyond Africa. Africa counts him as one of his sons! We wish him an enjoyable retirement."

Dieudonné Baributsa

At his retirement reception, Larry was presented with this mounted hand-made African scarf to honor his dedication and generousity. Pictured: Kabita Kharel, Holly Fletcher-Timmons, Dieudonné Baributsa, Carole Braund and Susie Murdock.

"Ayant échos du grand succès de la technologie PICS au Burkina Faso, Larry Murdock n'a pas hésité à conduire, malgré la menace sécuritaire ambiante, l'équipe internationale complète de PICS à travers le pays, jusqu'à la foire du niébé organisée par l'association YIYÉ à Lankoué en mai 2015, dans la région de la Boucle du Mouhoun. En effet, la large adoption de la technologie PICS a fait le bonheur de milliers et des milliers de femmes et d'hommes car réduisant l'insécurité alimentaire. Très heureuses, les autorités du Burkina Faso ont exprimé leur reconnaissance à travers la haute distinction de "Chevalier de l'ordre national burkinabè."

Clementine Dabire

INERA research station at Farako-Ba: Infestation of cowpea bt events.

"Larry [is] the most committed person I've known to the betterment of humanity through science, seeking practical science-based solutions to hunger and poverty. [He] developed, along with others [who he] inspired, innovations like the biomonitor, a device to help develop cowpeas that would resist devastating weevils, Bt-cowpea, to reduce losses from a devastating caterpillar, and PICS hermetic storage bags now in wide use around Africa for safe-storage of grains. [He] did not have to do any of this. [he] could have stayed within the academic realm doing interesting things, which [he] did and had great talent for, but [he] chose to look outwards for ways to really create and then scale solutions with positive impacts on the poorest of the poor. I imagine [he was] driven by an inner voice to do what is right and good. This inspires others to 'do good' and selfless things, and why [he has] been such an amazing mentor and powerful force in the lives of those [he has] touched at Purdue and around the world. I certainly feel this way in my own life and career having known and worked with [him] for quite a while now. In this era of greed and narcissism, dissing of science and logic the world seems short of characters like [Larry]. As [he] goes into retirement I can only hope [he] will keep using that drive that inspires, that intelligence that innovates so well, and that credibility and voice [he has] earned from years of living it, to keep us all on-track to be the best we can be for others, especially those less fortunate than ourselves, while still finding time for [himself] and his wife, Susie of course!
I salute you and your years of service!!!"

Jeff Ehlers

Larry and Susie Murdock in Burkina Faso, 2015.

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Holly Fletcher-Timmons

If you have a PICS story to share,
please contact us at
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