

# Illinois Crop Improvement Association, Inc.

Annual Report to the Membership

Fiscal Year 2016-2017



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ISO/IEC 17025:2005 Accredited Laboratories



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# Leadership

Doug Miller  
Chief Executive Officer

Every year has challenges and this year was no different. But without challenges there are rarely any rewards. I am extremely proud of the level of quality and service that our team delivers for the industry on a daily basis. Continual improvement, a basic tenet of modern quality management, relies on dedication, teamwork and a solid dose of individual leadership. Illinois Crop Improvement's team works together and fulfills leadership roles for the association and the industry as a whole.

2016-2017 presented us with an increase in acres inspected for Quality Assurance, Certification, phytosanitary and service work. The organization was successfully re-accredited under the National Seed Health System with an on-site audit. In addition to the NSHS audit, the certification handbook was updated and approved by the organization at the 2016 annual meeting. Updates were made after a full evaluation by the Association of Official Seed Certifying Agencies and included corrections to certain standards and the removal of crops no longer certified in Illinois.

The Puerto Rico farm was off to another good start for customers in the Northern Hemisphere until the rains flooded plots and brought planting to a standstill for the month of November. But despite the early challenges with excess precipitation the Puerto Rico Winter Farm performed admirably. Most services and projects were planted later than usual and as a result did not hit typical targets for some of our customers who read their own growouts and work their own nurseries. Our planting notification system and CPUs (Confidential Project Updates) kept everyone informed and assisted with travel plans during the 2016-2017 season. Both our Southern Hemisphere and Northern Hemisphere winter farm clients were provided with the data and seed they needed for the advancement of their programs. The financial condition of the farm was addressed this past year when it was decided to reduce the number of acres by 1/3. The 100 acres known as the Finca Potala

(Potala property) that can be seen from Highway 1 will transition to a local crop. With projects totaling approximately 150 acres per season, the continuing changes in the seed industry and the local economy, a reduction in size was in order. Illinois Crop utilizes long term leases and when the need arises will seek more land to meet the needs of its customers. The farm started over 30 years ago with a quarter of an acre and has been sized to hit the needs of the industry ever since.

Laboratories began to hit their peak testing times after the 2016 harvest as grains and seed crops from across the country were submitted for quality checks. The Identity Preserved Grain Lab was again a provider of testing services to Centrec Consulting for the US Grains Council's corn harvest quality report. This information along with a second report on exports is used to promote the quality of US corn in international markets. The Seed Laboratory continues to impress me with the number of customers and species it serves. As the lab continues to grow, investments in equipment are made and the possibilities of expansion are constantly under evaluation. The greenhouse program developed a new trait test this past year that will benefit our customers and the entire industry. Our investment in people, building capacity and expertise, is no minor matter for our organization. Recognitions continue to build including both the Registered Seed Technologist and Registered Genetic Technologist accreditations.

The support services of the tags and records department were also a big part of getting the work done by sending data, reports, tags, and certificates to our inspectors, customers and members. The department has a myriad of roles ranging from shipping seed to Puerto Rico to issuing OECD certificates. The department also supports the bookkeeping, insurance and various other financial and business obligations including this report. In closing, I feel that Illinois Crop continues to lead and has served the membership and the broader industry over the past year. I would like to thank each and every person who contributes to the high level of service provided by Illinois Crop Improvement.

## Dedication

Steve Beals, Registered Seed Technologist  
Seed Lab Director

After a long journey trying to attain an Approved Canadian Seed Grader Certification, I received word on January 27, 2017 that we were granted the Certification. Work began in April of 2016 at the Federal Seed Testing Lab in Gastonia, North Carolina where I tested in all of the categories that are available for Canadian accreditation. Illinois Crop is ISO 17025 but at the time I tested, ISO 17025 was not an approved Quality Management Program for the Approved US Canadian Grader. Later that year, the Canadian officials approved ISO 17025 as an equivalent program and we are now an Officially Recognized Seed Testing Laboratory for seed being sent into Canada.

I am currently a member of the Illinois Seed Trade Liaison Committee which consists of six members. There are three individuals from company laboratories, one individual from an independent lab, one individual from the Illinois State Seed Laboratory, and I am the representative from Illinois Crop Improvement. The committee typically puts together a fall workshop for seed analysts around the area, but is available for anyone to attend. This year our committee chair, Angie Croft, hosted the workshop on August 18, 2016 at GROWMARK Inc. in Bloomington, Illinois. The agenda included a presentation on seed treatments and their affects, a “hands on” exercise for germination rounding, a short preview of new traits that are in the works from Monsanto, and presentations of the seed tests that are performed along with a brief description. There was also a presentation on soybean hilum colors and the different characteristics between the colors, followed by a hands on hilum color separation demonstration. The workshop concluded with evaluations of soybean and wheat germinations planted on rolled towel.

We congratulated Gary Cook for 40 years of dedicated service this year. Gary completed his education at Western Illinois

University, Macomb, Illinois and joined Illinois Crop Improvement on December 1, 1976. He has held several different positions in the Seed Laboratory over the last forty years and is currently our Chief Analyst. Gary has also helped with field inspection duties and seed sampling for more than 20 years earlier in his career. Thank you Gary for your continued service here at Illinois Crop.

Also in December, the Seed Laboratoy had 2 employees that attended a 2 day Illinois Pesticide training and testing session for General Standards and Seed Treatment Applicator. At this training, Jeff Morse and Dawn Gerling attained their Seed Treatment Applicator license. The Seed Laboratoy now has 4 employees that have their Seed Treatment Applicator License.

Brittany Stoll and I attended and exhibited at the ASTA Vegetable and Flower Seed Convention held in Orlando, Florida late January. We were able to gain several new customers from this conference and were also able to meet with current customers in attendance to make sure that we were providing good service and timely results. While at the Conference, Brittany and I attended the Home Garden Seed Association Annual Meeting and Reception to help make our presence more known in the Vegetable and Flower Seed Industry.

Between our busy testing schedule and conference attendance, I was fortunate to have the opportunity to make several customer visits throughout the year allowing me to see their facilities and get a better understanding of their operations. This understanding will help us provide better seed testing services to them and all our customers.

As a result of those visits, we purchased additional boxes for small seed germinations to make sure we were able to handle the increase in testing volume and also purchased a used Hoffman Manufacturing single station vacuum planter to help us be more efficient when planting germinations.

In closing, I would like to welcome Carma Deck as a full time Seed Lab employee. Carma had worked part time in the seed lab for the past 6½ years before being hired on full time in February. We look forward to expanding her knowledge into other functions of the lab.

## Service

Matt Raymond, Registered Genetic Technologist  
Field Services Director

The Field Services department provides two main services for the agricultural community; field inspections and trait testing. Field inspections are either an assessment to verify the purity of the seed field via phenotypical characteristics or a phytosanitary inspection confirming pathogens that are present in the field to meet international requirements. Trait testing is performed in the lab and greenhouse located at Illinois Crop's main location in Champaign. The testing covers a wide range of methods and is used to assess the purity of seed lots or GMO levels in conventional products.

In the 2016 growing season, Illinois Crop employed over 40 inspectors, to walk the more than 107,400 acres of seed fields in Illinois that required some type of inspection. Due to the productive soils and favorable environment, inspections cover the majority of Illinois. This year inspections were done in over 70 of the 102 counties ranging from McHenry County in the North, Pulaski County in the South, Adams County in the West and Vermillion County in the East.

In addition to traditional inspections, Illinois Crop also conducts Insect Resistance Management (IRM) Assessments through AOSCA. Approximately 58 IRM assessments were done in Illinois for a major corn trait provider in 2016. Field inspections and IRM assessments are both conducted during the same time of the crop growing season. IRM assessments involve setting up appointments and meeting with growers to record the grower's farm management practices of refuge acres involving insect resistant corn. The data is collected from the grower, recorded electronically, then submitted online for the trait provider to review. This was the 11th year in a row that Illinois Crop has cooperated with AOSCA on the IRM project. Due to the longevity of the project, all of Illinois Crop's assessors were returning veteran staff which contributed to finishing the assessments ahead of schedule. As integrated refuge products become the standard

industrywide, the need for IRM assessments will decline.

This last year saw the retirement of Ron Crosby at the end of the 2016 field season. Ron was one of Illinois Crop's more experienced inspectors starting in 1985 and continuing for 31 years straight. He was our sunflower inspector and also did corn and soybeans. Ron will be greatly missed and we wish him well during his retirement.

Once the growing season ends, trait testing becomes the predominate service offered. Illinois Crop is fortunate to have a greenhouse to utilize for our trait testing program. This enables us to offer multiple types of trait tests and the flexibility to conduct specialized testing that we otherwise could not perform. The dominate test conducted in the greenhouse is trait confirmation tests for herbicide tolerance. As new traits are being released Illinois Crop works on developing new testing methods to meet future testing requirements. Dicamba tolerant trait testing was added to our services offered in 2016 with the introduction of Dicamba tolerant soybeans into the commercial market. Our trait testing approvals are current and as new opportunities arise from trait providers we seek to add more services. One of our specialized tests is a grow-out for the identification of the weed Palmer Amaranth. Identifying Palmer Amaranth from other Amaranthus species by seed characteristics is extremely difficult and unreliable. In the greenhouse we can grow out unknown amaranth seeds to produce a plant tissue sample for DNA testing to confirm if it is Palmer or not.

I have been a Certified Genetic Technologist since 2009, but underwent the process to move to the higher Registered Genetic Technologist (RGT) membership status in late 2016. In order to become a RGT I had to pass a written exam and a hands-on exam in electrophoresis seed purity testing. The AgReliant Genetics QA Lab was kind enough to assist me with the completion of the hands on portion of the exam. I successfully passed all exams and became a RGT member in SCST in early 2017. I also serve on the Board of Examiners (BOE) as a technical expert in herbicide bioassay. I review candidates for application into the society, administer the herbicide bioassay tests, and assist in grading exams.

## Unique

Doug Miller, CEO with  
Sandy Harrison, Identity Preserved Grain Lab Supervisor

The Identity Preserved Grain Lab had another busy year working with merchandisers, breeders and industry stakeholders assessing the composition and processing characteristics of a wide range of oilseeds and grains. The lab is unique among seed certification agencies and carries the concept of identity and quality from seed through the farm to the end user. The big picture, ranging from grain sales to national quality reports, relies on the details generated by the Identity Preserved Grain Lab. As you may expect the work in the lab is seasonal and as such a second pycnometer, used to measure density, was purchased to help alleviate a bottleneck that can occur in the battery of tests performed for the corn quality projects. A new oven was also purchased for the lab updating an older model that could not be repaired due to lack of parts for the controller. The oven is primarily used for moisture tests where samples are weighed before and after moisture has been removed by applying heat.

As in previous years the Identity Preserved Grain Lab provided testing services for the US Grains Council's Harvest Quality Report managed by Centrec Consulting. The corn samples were received from the grain elevators across the corn belt. The samples were dried, if needed, to prevent deterioration. The samples were then split using a Boerner divider. The subsamples were analyzed in our grain lab for chemical and physical attributes and at the Champaign-Danville Grain Inspection (CDGI) for grade factors. CDGI is the official grain inspection service provider for east-central Illinois as designated by USDA's Federal Grain Inspection Service (FGIS). Corn Grading Factors at CDGI included Test Weight, Broken Corn and Foreign Material (BCFM), Total Damage/Heat Damage.

Our lab handled the chemical composition and other physical factors. The chemical composition (protein, oil and starch

concentration) was measured using Near-infrared transmission spectroscopy (NIRT). Results were reported on a dry basis percentage (percent of non-water material). Physical Factors included the 100-Kernel Weight, Kernel Volume and Kernel True Density. Stress cracks were also evaluated by using a backlit viewing board to accentuate the cracks. Corn kernels were rated for horneous endosperm. Soft endosperm is opaque and will block light, while horneous endosperm is translucent. The rating is made from standard guidelines based on the degree to which the soft endosperm at the crown of the kernel extends down toward the germ.

The factors that are measured and published in the US Grains Council's Harvest Quality Report naturally vary with the environment and genetics of corn at the hybrid to species level. It is important to keep in mind the classic Genotype X Environment interactions that corn breeders focus on to improve corn as a species while at the same time trying to understand how to analyze the quality of US corn production as a whole. We must strive to meet and exceed the expectations of our customers here and around the world by understanding the crop at all levels.

The objective of the US Grains Council's Harvest Quality Report assessment of mycotoxins is only to report the frequency of occurrences of the mycotoxin in the current crop at harvest. The fungi producing the mycotoxins do not grow uniformly in a field or across a geographic area and can be impacted by storage conditions. As a result, the detection of any mycotoxin in corn, if present, is highly dependent upon the concentration and distribution of the mycotoxin among kernels in a lot of corn, whether a truck load, a storage bin or a rail car. The FGIS sampling process used by the industry for export shipments is designed to minimize underestimating or overestimating the true mycotoxin concentration, since accurate results are imperative for end users. For the report, the Identity Preserved Grain Lab performed the mycotoxin testing using FGIS protocol and approved test kits on samples received from elevators.

# Improvements

Lizandro Perez  
Puerto Rico Station Manager

This year, the Illinois Crop Improvement winter farm planted corn, dry beans, peanuts, sorghum, soybeans, sunflowers, popcorn, peanuts, wheat and barley. A small oat trial was also planted but it only produced a few seeds and the client decided not to harvest it.

We received good feedback from our customers this year. Our returning cutomers were pleased with their nurseries and two new clients working with corn and sorghum will be back with bigger nurseries next year. One negative feedback that I received was from our international customers stating that seed shipments were taking too long to process. We have since taken measures to improve our part of the shipping process.

Nets that were purchased last summer to protect sorghum increase fields from bird feeding did a fantastic job. This summer we will be using the nets again and using them on soybean plantings at the germination stage to avoid damage on cotyledons due to dove feeding. Another type of net was ordered this summer to be used as a screen house for sunflowers. The goal is be able to perform sunflower increases without using distance isolation for hybrid sunflower seed using honey bees as pollinators. This net can also be used on sorghum fields and soybean fields to protect fields from birds.

Last April we bought a used ear corn sheller that was in good condition. We were able to use it on one of our corn nurseries to shell ears in bulk. With this purchase, we are now able to offer our customer more corn shelling options like single ear, bulk row and increase plots. We received a request to thresh a sorguhn nursery by single head and we were able to do that by using our

belt threshers. Our client was very pleased with the amount of seed and cleanliness of the samples. Other crops that we can now offer different threshing options on are dry beans, soybeans and sunflowers.

The replacement of granular insecticide applicators with new units resulted in better placement of the product and a reduction in the loss of product. We are still looking for a forklift and have a rotary tiller on our wish list. With the weather challenges (drought or rainy periods) over the last few years, conditions for land preparation have not been ideal. A rotary tiller would help to get a good seed bed when weather conditions are not ideal.

Currently the entire island is under normal weather conditions with predictions for the upcoming hurricane season, beginning June 1st, to be a bit more active compared to the 2016 season.

PRABIA (Puerto Rico Agricultural Biotechnology Industry Association) and IRAC-US (Insecticide Resistance Action Committee) are working on a proposal for the development and implementation of an area wide insect resistance management strategy for fall armyworm and soybean looper in Puerto Rico. The main objective is to preserve efficacy of available Fall armyworm and soybean looper insecticides. It should be ready for implementation by summer of 2018.

The financial condition of the farm was addressed this past year when it was decided to reduce the number of acres by 1/3. The 100 acres known as the Finca Potala (Potala property) that can be seen from Highway 1 will transition to a local crop. With projects totaling approximately 150 acres per season and the continuing changes in the seed industry, and the local economy, a reduction in size was in order. Illinois Crop utilizes long term leases and when the need arises will seek more land to meet the needs of its customers. The farm started over 30 years ago with a quarter of an acre and has been sized to meet the needs of the industry ever since.

# Anniversary of the Seed Conditioning Workshop

Doug Miller  
Chief Executive Officer

The Illinois-Indiana Seed Conditioning Workshop marked its 30th year this past March. The first workshop in 1987 was called the Midwest Seed Workshop and was sponsored by the Illinois, Indiana and Kentucky Crop Improvement Associations. The fourth annual Midwest Seed Workshop logo included the state of Missouri. For the 16th annual workshop the name was changed to the Illinois-Indiana Seed Conditioning Workshop and has remained so named ever since. While I have no direct evidence I believe I am safe in saying that Richard Denhart, Alan Galbreth and Larry Nees have been on the planning committee from the start. Many of you would also recognize names from the planning committee like Richard Arnett, Larry Svajgr, Dennis Thompson, Kenny Perry, Dennis TeKrony, Tony Martin and Marvin Rode.

In looking at the past workshops there are plenty of names that have come and gone providing valuable guidance and work that made the event a sustainable success. I was amazed at the number of first time attendees at this past year's workshop. A show of hands revealed well over half of the audience as first time attendees. At the end of the workshop I reminded the attendees that this workshop is not a "once and done" type of event. There is always something new to learn. The industry changes and keeping up with those changes is the difference between a job in the seed industry and a long term career.

The seed conditioning workshop has had and will continue to have a successful long term career. Things come and things go. The people who plan and put the plan into action make sure of that. We appreciate the attendees for making time to attend the

workshop. So as we close the books on the 30th Annual Illinois-Indiana Seed Conditioning Workshop lets keep in mind why we do what we do. The following are some excerpts from a book chapter I recently wrote for another organization.

Seed is a living organism. It is subject to damage, disease, impurities, misidentification and other deficiencies. Seed is not manufactured in the same sense as nuts, bolts, bearings or other hardware. As a living organism, variation and change over time is inherent. From how it is grown to how it is handled seed is life in storage and must be treated as such. Seed of poor quality, unsuitable for planting, can impact the success of a single farmer or an entire society.

Seed quality is so important that a highly technical and dedicated industry has evolved to produce it. Growing, harvesting, cleaning, conditioning, and finishing high quality seed has transitioned from art to science. But at the end of this complex process the seed needs to grow. Seed that can grow is the most efficient way to establish a crop, store genetics and maintain future planting stock. Seeds, and the plants they produce, are our primary source of foods, fibers, fuels and construction materials. Seeds and plants are important sources of medicines, lubricants, plastics and other everyday products. Seeds also maintain our environment; from residential lawns and parks to natural areas of woody and herbaceous plants. The world depends on an economical and sustainable supply of quality seed.

## Illinois Crop Quality Policy

The Illinois Crop Improvement Association, Inc.  
is dedicated to providing superior  
laboratory testing service to customers by:

- ❖ implementing good professional practices,
- ❖ requiring that all laboratory personnel familiarize themselves with the quality documentation and implement the policies and procedure in their work, and
- ❖ continually improving our quality system.



Illinois Crop Improvement Association, Inc.

# Puerto Rico Winter Farm

## Quality Policy

The Illinois Crop Improvement Association, Inc.  
in Juana Diaz, Puerto Rico is committed to:

- ❖ adhering to the requirements of the BQMS  
(Biotechnology Quality Management System)  
standard
  
- ❖ maintaining a high-level of quality and strong  
customer service within an environment that  
has safety as a first priority, is focused on the  
customers, and fosters continual improvement



Illinois Crop Improvement Association, Inc.

# Illinois Crop Improvement Association, Inc.

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