

Illinois Crop Improvement Association, Inc.

Annual Report to the Membership

Fiscal Year 2015-2016



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ISO/IEC 17025:2005 Accredited Laboratories

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An Honest Assessment

Doug Miller
Chief Executive Officer

Illinois Crop Improvement has completed another successful year serving the seed, grain and greater agriculture industry. The association continues to provide confidence for a wide range of stakeholders. We diminish apprehension by applying standards and methods without bias and undue influence. Our “honest assessment of purity, composition, viability and vigor” comes from our third party role in the seed industry. Confidence, accuracy, reliability, turn-around time and web-results are all important features of our seed and grain testing services. But the value comes from providing all concerned with our “honest assessment” when and where it counts. Our quality, personal-service and turn-around times help our members and customers succeed in an ever changing seed industry.

This fiscal year was not without its challenges. The company budget was directly impacted by the continued decline in corn acres for field inspections. This reduction in corn acres also impacted our laboratory, winter farm and tagging income. Field inspection services for soybeans, however, were positive and outpaced last year’s income. Puerto Rico was also challenged with lower income numbers as trait introgression services were completed and sunflower growouts began to decline after two years of record increases. In turn, the financial report shows the company generated a significant loss from operations for the 2015-2016 fiscal year posting net negative numbers.

To keep up with our challenges, laboratory prices were increased late in the fiscal year. As part of the price increase announcement, the Identity Preserved Grain Lab and Greenhouse programs reminded customers to take care when comparing Illinois Crop’s prices to other laboratories or service providers. Some labs, especially other grain quality labs, charge additional grinding, processing and handling fees. Illinois Crop prices are complete and include all the necessary steps of the testing process, never deviating from the rules and testing the normal quantity of seeds. Prices at other seed labs are sometimes cheaper but more retests and less confidence are the flip side.

Illinois Crop understands that today's agriculture has a greater expectation regarding the performance of seed products and technology delivered through seed improvements. Because of this, we participate in a wide range of validations and proficiencies each year to make sure our quality management practices are a part of our day-to-day business activities. Illinois Crop Improvement handily maintained its ISO/IEC 17025:2005 accreditation and continues to operate under its National Seed Health System field inspection accreditation while Puerto Rico continues to operate under the Biotechnology Quality Management System (BQMS) standard. Illinois Crop offers a unique set of services, accredited to support an industry that requires good science and strong partners in the advancement of seed products and technology.

When I accepted this position in 2013 I wrote an article titled "A Clear Foundation". In that article I shared that an organization's foundation is not its competencies or its goals. The foundation of an organization is in its core values. These core values are the company's soul, guiding it in good times and bad. They are essential for everyday business and for the continuous journey towards excellence. A clear picture of core values gives an organization purpose, and prevents decisions based on immediate circumstances that conflict with its core values. The organization may experience change but its core values steer the company through all challenges.

First and foremost, Illinois Crop is an independent not-for-profit organization dedicated to improving agriculture. Our core values of quality and integrity will not tell us exactly what the organization will be doing next year or in ten years, and the organization may change in response to the needs of agriculture, but its foundation will never shift from those values. We are dedicated to these values as we serve as a third-party to everyone in agriculture and these values will help guide our leaders in decisions that will not limit the opportunities of the future.

It is the CEO's job to communicate the core values and empower employees to follow them. How we conduct ourselves and how we interface with the industry shall always show our commitment to quality and integrity. Through good times and bad I will continue to serve the organization, its membership and stakeholders by promulgating these core values.

Recognizing Leadership

Steve Beals, Registered Seed Technologist
Seed Lab Director

The IL Crop Seed Lab has grown in the number of samples and crop species tested over the past year. With anticipation that both sample volume and crop species will continue to grow throughout the next testing season, we have ensured that our lab has the equipment and supplies in place to handle these increases.

One such improvement included updating the Dickey-john GAC2100 moisture meter to the Dickey-john GAC2500-UGMA moisture analyzer on June 30, 2015. This new meter allows us to analyze more crops than the older unit and has data downloading options but it does require a larger test sample than the older unit.

Also, in late summer/early fall the electrical and water supply was upgraded in order to handle the industrial washer that had been purchased to clean our germination trays. We are now able to wash two carts of trays in a single wash. The water supply upgrade also helped the water pressure that was needed in the greenhouse for watering plants for testing.

In April of 2016, I traveled to Gastonia, NC where I completed and passed all of the Officially Recognized US Canadian Grader exams. However, we are still pending complete certification due to a decision on a quality system that is acceptable for the US/Canadian certification requirements.

We continue make a presence at meetings and conventions as time allows. Brittany Stoll and I attended the AOSA/SCST Annual Meeting and workshops in early June 2015 in Tampa, FL. I attended the AASCO Meeting in St. Louis, MO in July 2015. Doug Miller, Hannah Hudson and I attended and displayed at the ASTA CSS & Seed Expo in December 2015 in Chicago, IL. And lastly, Brittany and I attended and displayed at the ASTA Vegetable and Flower Seed Conference in Anaheim, CA in late January 2016.

In closing, I would like to recognize our IL Crop Seed Lab team. We have 2 Registered Seed Technologist, Steve Beals, Seed Lab

Director, 15 years of experience and Gary Cook, Chief Analyst who has 40 years of seed testing experience. We recently added Kelly Redmon as a full time staff member to our team in April 2016 after working part time for a combination of 7 years prior. We look forward to her continual growth and have aspirations of her becoming a Registered Seed Technologist in the near future. We have 5 additional full time seed lab employees. Brittany Stoll, Seed Analyst, has been with IL Crop since the summer of 2014. Brittany began as a field inspector and transitioned into the Seed Lab in the fall of 2014. She is planning on taking the RST exam in 2017. Jeff Morse, Seed Technician, started in the IPG Lab as temporary help for 1 year then moved into the Seed Lab for 2 years as part time help before becoming full time in August 2014. Susan Schmidt, Seed Analyst, started with IL Crop in the fall of 1997 and has 19 years seed testing experience. Mary Jo Redmon, Seed Analyst, has been with IL Crop a total of 22 years, 3 years in the IPG Lab and then the past 19 years in the Seed Lab. Our final Seed Lab full time employee is Mary Jo Edmison. She began working in February of 2007 and is responsible for entering sample data into our computer system and assisting in other seed lab duties. All of our analysts participate in a number of proficiencies, referees, seminars and webinars as well as in-house training exercises to help them become more efficient in the various seed tests we provide. Along with our part time employees that help with the everyday functions of the laboratory, we have the knowledge and experience to test a diversity of crops that allows the IL Crop Seed Lab to be recognized among one of the leading seed laboratories in the industry.

The goals that we have set in the Seed Lab include:

- Remain current on samples received for testing
- Provide customers with timely, accurate, repeatable results using AOSA Rules for Testing Seed
- Provide testing services at a reasonable fee
- Have multiple means for customer's to receive the Report of Analysis
- Continually look for opportunities to improve efficiency

Serving the Industry

Matt Raymond, Certified Genetic Technologist
Field Services Director

The Field Services department serves multiple aspects of the seed industry with the two main services being field inspections and trait testing. During the growing season, field inspections compose the majority of the workload. Traditional inspections provide an assessment of the purity of the field and is used to help determine the quality of the crop, while phytosanitary inspections are performed to check fields for diseases and are necessary for moving seed internationally. After harvest, the inspection season comes to an end and trait testing becomes the main focus in the lab and greenhouse. Trait testing covers a wide range of methods and is used to assess the purity of seed lots or GMO contamination levels in conventional grain.

During the past crop year, Illinois Crop Improvement employed 41 inspectors to cover the more than 78,000 acres of seed fields in Illinois that needed inspection. Since Illinois is fortunate to have quality farmland throughout, seed field inspections were done through three quarters of the state and located in 76 of the 102 counties. The majority of these fields were corn and soybeans, but the Illinois seed production industry is diverse and includes some less thought of crops such as wheat, oats, triticale, sorghum, sunflower, sweetcorn, popcorn, switchgrass, and indiangrass.

IL Crop's authority for Certification comes from Illinois Seed Law. As a member of AOSCA, IL Crop must maintain and follow the minimum AOSCA Certification standards when conducting field inspections. In February, AOSCA sent an external auditor to conduct a routine check of IL Crop's seed certification procedures and records. The results of the audit were favorable and IL Crop passed.

In addition to the traditional field work, IL Crop (through AOSCA) also conducted approximately 55 Insect Resistance Management (IRM) assessments in Illinois for one of the major trait providers. The IRM project is conducted at the same time frame as field inspections, IRM assessments involve meeting with farmers to collect data on farm management practices of refuge acres for insect resistant corn. Data

is collected via laptop and submitted electronically online for review by the trait provider. This was the 10th year in a row that IL Crop has cooperated with AOSCA on the IRM project. Due to the longevity of the project, all of the IL Crop assessors were returning experienced staff that contributed to a successful IRM season. As integrated refuge products become more widely used across the industry, the need for IRM assessments has declined and will continue to do so.

Once the growing season wraps up then trait testing takes over as the main service offered. The greenhouse, which is predominately used for herbicide bioassay trait testing, was filled to capacity for a good portion of the testing season. As new traits are being developed and released IL Crop is actively working on developing new testing methods to meet these testing needs.

The Society of Commercial Seed Technologist (SCST) is a professional seed analyst organization that IL Crop is active in. I sit on the Registered Genetic Technologist (RGT) Board of Examiners (BOE) as an expert in herbicide bioassay. The RGT BOE approves candidates for application into the society, administers the genetic exams to become a SCST Genetic Technologist member, and manages the genetic proficiency testing required for maintaining active membership status. The most recent SCST Genetics Workshop was held at Iowa State University in Ames, Iowa during February 2016. On the day devoted to the Herbicide Bioassay method, I presented two topics and conducted two hands-on demonstrations including herbicide modes of action and how to become a SCST member.

Both Field Inspections and Trait Testing have Quality Management Systems (QMS) in place to ensure the production of high quality services and to identify process areas that can be improved. External audits completed during the year indicated that the requirements of the QMS were being met and internal audits were used to improve processes in several areas. We continue to participate in a robust proficiency program to monitor our quality levels, meet the requirements of trait providers, and fulfill our ISO 17025:2005 standards. Having a quality product is as important to IL Crop as it is to our customers and we look forward to working with our clients to help them meet their needs.

Accuracy and Stability

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

The Identity Preserved Grain Lab was busy handling regular customer samples throughout the year ranging from tofu to food grade corn samples. The IPG lab provided services for the US Grains Council's harvest quality project that is administered by Centrec Consulting as well as services for the USGC's corn export report and the Illinois Soybean Association's Quality Composition program that was also administered by Centrec Consulting.

A new Foss1241 NIR whole grain analyzer was purchased and placed into operation after the initial harvest rush. It's huge Infratec calibration database consists of over 50,000 cross checked samples collected from over 20 years of harvests. This gives a level of accuracy and stability that enables the Infratec to analyze even the most unusual samples. With this addition, IL Crop is now able to analyze barley, field peas, canola, triticale and all market classes of wheat in addition to its traditional offering of corn, soybean and selected classes of wheat. Foss is a leading provider of such instruments and has official approval for use in commerce in the US and around the world.

IL Crop continues to work with a wide range of crops and processes used to turn these crops into food, feed and biofuels. The lab also addresses safety concerns through its mycotoxin testing.

Lab Supervisor Sandy Harrison continues to maintain her designation as an AOCS Approved Chemist through proficiency testing and inter-laboratory comparison. As the industry once again trends towards the concept of paying farmers based on composition, the need for a valid reference lab to anchor the trade grows. Without this anchor in the market any composition based trade cannot be fair, equitable or sustainable for its participants or the regulators charged with its oversight.

Illinois Crop hosted Dr. Kent Rausch's grain storage class providing insight to University of Illinois students on specialty crops and the importance of reducing post-harvest losses and quality issues.

Eighteen Crops

Lizandro Perez
Puerto Rico Station Manager

Our year began with dry weather that caused the farm to be under a moderate drought but finished off with enough rainfall to put us back to normal weather conditions. Crops planted this year were corn, barley, drybeans, peanuts, sorghum, soybeans, sunflowers and wheat with the most recent planting being a sunflower project planted under light in an isolated block.

On most projects our results were good with only a few exceptions. First, some of our corn growout entries were affected by pre-emergence herbicide but the problem was identified and measures taken to avoid it on future plantings. Second, our initial sorghum block was heavily affected by sugar cane aphids but we learned how to control it, replanted, and results were good. We also had problems with the birds feeding from the heads of the sorghum so nets were ordered to protect the sorghum fields from seed set to physiological maturity. Continuing with pest problems this year, we were having more soybean looper's than previous years. They were under control but control of this type of looper is more complicated than control of the cabbage looper. Farm manager Emmanuel Lasalle found a fly in a sunflower field that layed eggs inside the loopers larva, our hope is that a biological control can be developed. The people who deal with biological control on the island are already working to determine if an alternative is available. We are also going to plant a research trial to evaluate the biological control options that are available in Puerto Rico. Some of these biological controls have been used at the farm. So, despite problems with insects and herbicides we did learn how to have better insect control and how to improve our herbicide applications.

On sunflower we learned new pollinating techniques and improved threshing methods for single heads, bulks and increases. About our plant nutrition program soil samples from all farm fields are going to be taken and sent to an agricultural lab. Based on laboratory results the plant nutrition program will be evaluated and changed if necessary.

All equipment is working properly on the farm. The new spray control system installed on our Miller Nitro is working well and next September a representative of the spray control system is going to visit the island to check and make sure we are getting all the advantages the system offers. We are still looking for a good used forklift. By July 2016 we should have another plot thresher. A 45 foot storage container should be delivering by late June. Repairs of the irrigation pump house and farm fence are on progress. Main building repairs will be done once the fence and pump house are finished. Farm roads and water ways are on schedule for maintenance.

The Puerto Rico Agricultural Biotechnology Industry Association known as PRABIA is taking an active role promoting the sector on the island. A public relations and communication firm was contracted and a Facebook page was launched. A PRABIA representative participated at the 2016 BIO International Convention and they sponsored an agricultural biotechnology summer camp for high school students. PRABIA task force is evaluating the results from control of corn earworm trials. They also organized a spraying seminar for employees of companies that are members of the association who are involved in pest control. Next September is PRABIA's biannual convention at San Juan, Puerto Rico.

Illinois Crop Improvement Association, Inc.

2015-2016 Board of Directors

President

John Hiser

Illinois Foundation Seeds, Inc.

Vice President

Ken Heinzmann

Gateway Seed Company, Inc.

Secretary

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Lewis Seed Farms, Inc.

Randy Wilken

MWS Seeds, LLC.

Dale Wehmeyer

Wehmeyer Seed Company

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.

ISO/IEC 17025:2005 Accreditation



PERRY JOHNSON LABORATORY
ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Illinois Crop Improvement Association, Inc.
3105 Research Road, Champaign, IL 61822

*(Hereinafter called the Organization) and hereby declares that Organization is accredited
in accordance with the recognized International Standard:*

ISO/IEC 17025:2005

This accreditation demonstrates technical competence for a defined scope and the
operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated January 2009):

Biological, Chemical and Mechanical Testing
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szeszen
President/Operations Manager

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:
January 25, 2008

Issue Date:
May 1, 2015

Expiration Date:
June 30, 2017

Revision Date:
March 15, 2016

Accreditation No.:
59416

Certificate No.:
L15-128-R1

*The validity of this certificate is maintained through ongoing assessments based on a
continuous accreditation cycle. The validity of this certificate should be
confirmed through the PJLA website: www.pjilabs.com*

ISO/IEC 17025:2005

Accreditation Continued



Certificate of Accreditation: Supplement

Illinois Crop Improvement Association, Inc.

3105 Research Road, Champaign, IL 61822

Contact Name: Hannah Hudson Phone: 217-359-4053

Accreditation is granted to the facility to perform the following testing:

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED
Biological ¹	Corn, Soybeans, Wheat, Sunflowers, Small Seed (including vegetable, flower, grasses, weed and other crop seeds)	Warm germination	AOSA Rules for Testing Seeds (AOSA) Canadian Methods and Procedures for Testing Seeds (Canadian M & P)
		Cold Test	AOSA Vigor Testing Handbook (AOSA)
		Saturated Cold Test	AOSA Vigor Testing Handbook (AOSA)
		Purity	AOSA Rules for Testing Seeds (AOSA) Canadian Methods and Procedures for Testing Seeds (Canadian M & P)
	Corn	Trait Confirmation (testing of individual seeds) by ELISA	Relevant Kit Manufacturer Protocols
	Soybean	Trait Presence (testing of bulk sample) by ELISA	Relevant Kit Manufacturer Protocols
	Processed Soybean Products	Trait Presence (testing of bulk sample) by ELISA	Relevant Kit Manufacturer Protocols
	Corn, Soybeans, Similar Crops	Trait Confirmation (testing of individual seeds) by Visual Analysis of Susceptibility to Herbicide Imbibition	IL Crop Work Instructions
		Trait Confirmation (testing of individual seeds) by Visual Analysis of Susceptibility to Foliar Application of Herbicide	IL Crop Work Instructions Trait Developer Protocol
	Corn	Waxy Purity	CRA A-28

ISO/IEC 17025:2005

Accreditation Continued



Certificate of Accreditation: Supplement

Illinois Crop Improvement Association, Inc.

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Contact: Hannah Hudson Phone: 217-359-4053

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FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED
Chemical ^F	Crop Seeds and Grains	Electronic Moisture Balance	AOSA Rules for Testing Seeds (AOSA)
		Moisture by Air Oven	ASAE S352.2; AOSA Rules for Testing Seeds (AOSA)
	Seeds, Grains and Related Processed Goods (Ground)	Moisture (loss by drying) by Air Oven	AOCS Ba 2a-38 AACC 44-15A
	Corn and Other Starchy Substrates	Ethanol Fermentation Yield Measurement	IPG 045
	Corn, Soybeans, Wheat (unground seeds)	Proximate Analysis by NIR Spectroscopy (moisture, oil, protein, starch, fiber)	IPG 015
	Seeds, Grains and Related Processed Goods	Crude Fiber	AOCS Ba 6a-05
		Ash	AOCS Ba 5a-49
Oil / Crude Fat		AOCS Ba 3-38 AACC 30-25 AOCS Ac 3-44 AOCS Am 5-04	
	Crude Protein / Nitrogen	AOCS Ba 4e-93	
Mechanical ^F	Soybeans, Wheat, Corn, Field Beans	Seed Count	AOSA Rules for Testing Seeds (AOSA)
	Corn and Other Materials	Density as calculated from Mass and Sample Displacement (As measured by gas pycnometry)	IPG 009
	Corn	Stress Cracks	GIPSA FGIS Grain Inspection Handbook, Book II, Ch 4; IPG 006

- The presence of a superscript F means that the laboratory performs testing of the indicated parameter at its fixed location. Example: Outside Micrometer^F would mean that the laboratory performs this testing at its fixed location.