



## CEO Report

by Doug Miller, CEO • dmiller@ilcrop.com

### Challenge Accepted

Despite early challenges with excess precipitation, the Puerto Rico Winter Farm is in good shape as of this writing during the week of December 19th. Weed control was good and plant health was good, all other issues stemmed from too much rain. Most services and projects were planted later than usual this season and as a result will not hit typical travel targets for customers who read their own growouts and work their own nurseries. If your project has been delayed you should already be aware through our planting notification system and CPUs (Confidential Project Updates). Please plan your travel accordingly.

I am proud to say we are making our best efforts to provide you with the data and seed you need this season. No excuses on performance. The facts are that after a severe drought we are now in a cycle of ample

to excess moisture that has been timed to frustrate land preparation, planting and spraying. The next fact to consider is the season will be compressed. Pollinations, readings and harvest will occur in a relatively narrow window of time relative to previous years. What I saw at the farm the week before Christmas was the result of the hard work, perseverance and ingenuity of our staff, past and present. Drainage on the farm is the best it has ever been. Other farms on the island were unable to plant during the month of November.

As detailed in a previous issue of this newsletter, the farm has a new agronomist on staff and a new administrative assistant. They are welcome additions to the team and both raise the level of quality and capabilities of our operations. If you plan to visit the farm this year be sure to look at the improvements and quality of our work across a wide range of crops and project types.

When packing for your trip be sure to bring or buy bug repellent. Mosquitos in Puerto Rico carry both the Zika and lesser known Chikungunya viruses. Be especially careful from dusk to dawn and whenever you find yourself in a place where the breeze isn't blowing strong enough to keep the mosquitos off of you. For more information on the farm and how to visit please visit our Puerto Rico page under the Counter Season Services tab at www.ilcrop.com. To learn more about the Zika virus visit [www.cdc.gov/zika/index.html](http://www.cdc.gov/zika/index.html).



**Puerto Rico Team**  
 Back: Lizandro Perez & Emmanuel Lasalle  
 Front: Irma Alvarado, Francisco Perez & Jose Cabrera



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# Seed Laboratory News

by Steve Beals, Seed Lab Director • [sbeals@ilcrop.com](mailto:sbeals@ilcrop.com)

## Palmer Amaranth

There has been a lot of discussion lately about *Amaranthus palmerii* (Palmer amaranth) being found as an incidental in pollinator seed mixes and wildlife habitat seed mixes. Palmer amaranth is an invasive and harmful weed. Palmer amaranth and waterhemp have many populations that are resistant to herbicides and are difficult to control once established. Palmer amaranth is considered a noxious weed in Ohio and Minnesota. Palmer amaranth is showing up in CRP plantings this year in Minnesota, Iowa, Indiana, and Illinois. Unopened bags from the plantings were obtained and most of the seed labels on the seed stated 0% weed seed.

Seed purity exams for pollinator and wildlife mixes are only as good as the sample submitted for testing. It is imperative that a sample collected for seed testing is unbiased and drawn from several areas of the seed lot to make a composite sample that is a good representative of that seed lot. Seed Purity exams are conducted on what could be a very small portion of the seed lot in some cases. Once the sample is received into the lab, it is divided down (usually by means of a soil divider or a Gamet divider, depending on the components of the mix) to the desired sample size determined by using the AOSA Rules for Testing Seeds.

Palmer amaranth is difficult to distinguish from other species of *Amaranthus* (pigweed) and for this reason the Society of Commercial Seed Technologists (SCST) has released a memo regarding the issue.

Seed Analysts should take into consideration if possible, any information of where the seed was grown and any field information

that could be helpful to determine the species of the *Amaranthus* contaminant. If no information is provided, it is difficult to definitively determine if the seed is or is not



Photo of Palmer Amaranth Courtesy of The University of Illinois

Palmer amaranth. The SCST recommends that while conducting an All State Noxious Weed Exam or weed exams for Ohio and Minnesota, any *Amaranthus* species found in the purity sample be listed as *Amaranthus sp.* and classified as a noxious weed. The report of analysis should include a statement that says the *Amaranthus sp.* found in the sample cannot be determined and may be *Amaranthus palmerii*.

There is work being conducted on DNA methods to identify Palmer amaranth, however it will take time. In the interim the only other method is to grow out the seed and identify the plant. This is being done on a small scale. The issue with this method is viability of the weed seed and the amount of time it takes for the seedling to develop key structures used in identification. The Illinois Crop Seed Lab will follow the recommendations from the SCST and will report any *Amaranthus* species found as a noxious weed in any All State Noxious Weed

Seed Exams and samples that are from Ohio or Minnesota. If you have any questions about Palmer amaranth, please let me know.

## Seed Quality Update

Corn germination results have been strong this testing season with an average of 95.6% across Illinois and corn cold test averages are slightly better than last year at 93.0% across all regions.

The average for soybean germinations for the 2016 crop testing season is 89.5% across all regions. This is 3% lower than the germinations seen last testing season. Phomopsis (pod and stem blight) has been the primary factor for the lower germinations this season.

The average disease thus far is 5.45% across all regions. The highest amount of Phomopsis is coming from the Eastern portion of the state with an average of 15.63%, followed by the Central region of the state with an average of 4.88%. The region of the state that has seen the least amount of infection is the Southwest region at 1.73%. Seed applied fungicides should improve the germination results in soybean lots that have a significant amount of Phomopsis infection. The Illinois Crop Seed Lab can hand treat a portion of the seed and test it to help determine if applying seed treatment is essential for the seed lot. Please let us know if we can help you with this testing.

The soybean cold test average is the same as last year at this time at 92.3%. A small quantity of soybean samples have been tested in sand this fall and the germination results are slightly higher than the standard warm germination. The average sand germ in the lab at this point is 93.5%. Note that the sand germination testing fee is higher than

*Article continued on page 7*



## Handbook of Seed Certification

The Illinois Crop Improvement Association Handbook of Seed Certification was updated in late 2016. The majority of the changes made were to remove seldom utilized items from the handbook to make it more streamlined and easier to navigate. A few minor revisions were also added based on a detailed review that discovered mostly typographical errors. With the removal of some items the handbook now covers only the primary seed crops that are certified in Illinois. However, other crops not listed in the handbook may still be certified and would be certified to the current version of the AOSCA Seed Certification Handbook standards.

With the revision of the Illinois Crop handbook completed, a new copy will be issued to all members that produce Certified Seed. The new revision of the handbook will be issued electronically. Members should be on the lookout during the next couple of months for download instructions that will be sent via email. For members that do not have access to email or download capabilities alternate distribution methods will be utilized.

## Preparing For The Field

It is that time of year again to start thinking about the upcoming growing season and planning for planting. For corn producers one critical aspect is the required isolation distances from contaminating pollen sources. This past season there was

several incidents where seed corn fields did not meet Certification isolation standards. Use the following requirements when planning for your seed corn fields for the upcoming planting season.

Foundation Class isolation is at least 660 feet from all other corn in all directions.

Certified Class Hybrid Corn starts with the same requirement of 660 feet from other corn, but the distance can be reduced with the addition of male parent border rows per the following chart.

Minimum distance from other corn (feet)	Minimum border rows for fields 20 acres or less	Minimum border rows for fields greater than 20 acres
660	0	0
570	4	2
490	6	2
410	8	4
330	10	6
270	12	8
210	14	10
150	16	12
90	18	14
0	24 <sup>1</sup>	16 <sup>2</sup>
<sup>1</sup> Minimum of 60 feet including border rows (24 rows x 30 inch row width = 60 feet)		
<sup>2</sup> Minimum of 40 feet including border rows (16 rows x 30 inch row width = 60 feet)		

## Seed Certification Workshops

For those customers that have not certified seed in a while, have had staffing changes, are new to seed certification or would just like a refresher on the certification process we offer complimentary training

sessions at the office. Training can go over the entire certification process or target specific areas of the system such as; submitting field applications, isolation requirements, seed eligibility, sample testing, bulk transfers, packaging winter grow outs, online results or any other aspect related to certification. If you are interested in scheduling a training session contact Hannah Hudson at [hhudson@ilcrop.com](mailto:hhudson@ilcrop.com) or (217) 359-4053.

## Field Inspection Application Deadlines

With so much going on during spring planting, it can be a challenge to remember the due dates for field inspection applications. Below is a chart of Illinois Crop inspection application deadlines. I have one of these tacked up next to my computer from a previous newsletter for reference. The deadlines are also available at [ilcrop.com](http://ilcrop.com)

Crop/Inspection Type	Due By
Winter grains (Barley, Rye, Triticale, Wheat)	May 1
Spring grains (Barley, Oats, Rye)	June 1
Corn	June 1
Sorghum	June 1
Sunflower	June 1
Soybeans with blossom inspection (Foundation, Breeder & QA Parent)	July 1
Soybeans with herbicide tolerance inspection	June 15
Soybeans (Certified, Registered, QA, Commercial)	Aug 1
All other crops	May 1
Phytosanitary Only	At flowering



## The Big Picture is Built From Details

The Identity Preserved Grain Lab has completed another round of harvest samples for the US Grains Council's Harvest Quality Report managed by Centrec Consulting. As in previous years and as described in the 2016 report, available at grains.org, corn samples were received from local grain elevators by the IPG lab. The samples were dried, if needed, to prevent deterioration and 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) and 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 objective of the Council's Harvest 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 my-

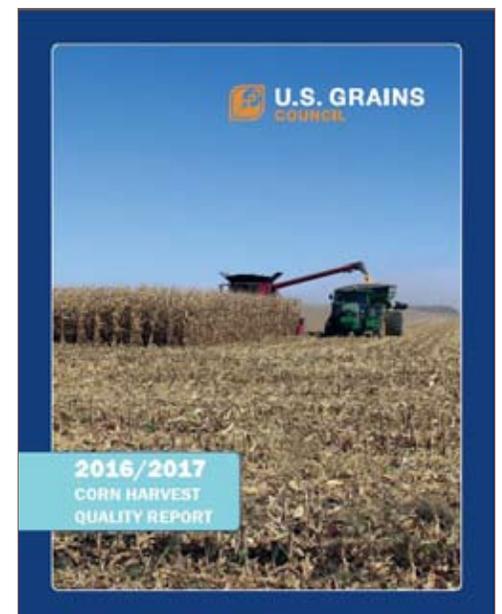


View of Stress Cracks Using Backlight

cotoxins 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 the underestimating or overestimating of the true mycotoxin concentration. Accurate mycotoxin results are imperative for end users. For the Harvest Report, the IPG Lab performed the mycotoxin testing using the FGIS protocol and approved test kits on samples received from elevators.

The factors that are measured and published in the council's harvest 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. If you would like to learn more about how the quality factors are assessed please visit the Grain Laboratory Page on our website, ilcrop.com, where you will find our "Corn Test Descriptions" file. It contains the testing methods, reporting procedures and the expected range of results for each test offered by the IPG lab. In addition to the tests described above, the file also provides details on our food grade corn bundles that provide information on a host of factors important to the various types of millers and processors. For any questions or more information contact Sandy Harrison, Lab Supervisor at sharrison@ilcrop.com.



<http://grains.org/media/7895>



## Farm Updates and Conditions

**W**e are in the middle of our main season here on the farm. Weather conditions are normal for this time of the year but for the months of October and November the island received record breaking amounts of rainfall. All plantings were delayed due to the excess rainfall and farm activities like land preparation, weed and pest control were negatively affected. The good news is, due to the heavy rainfall, 100% of the island is out of abnormally dry weather conditions.

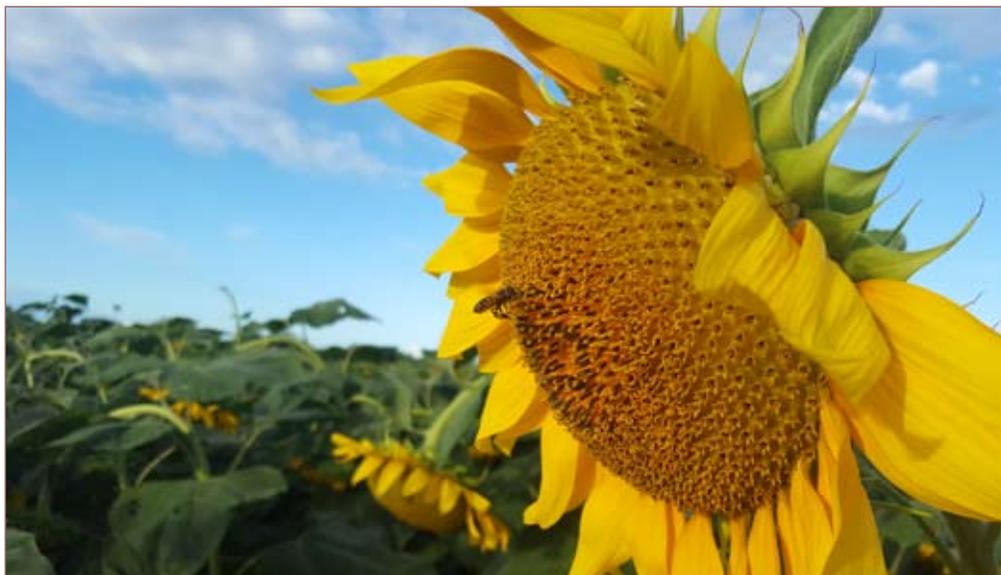
Most plantings were done between the end of November to the middle of December. Crops currently planted include corn growouts, corn nurseries, dry bean generation advances, dry bean increases, peanut generation advances, soybean generation advances, soybean crossing, sorghum nurseries, sunflower growouts, sunflower nurseries, barley generation advances and wheat generation advances. We are on schedule to plant additional corn nurseries, corn isolations, soybean generation advances and soybeans growouts. Insect and disease pressure is above average for this time of the year but crop plants look good to excellent. We have land available for your winter projects and look forward to the opportunity to work with you. For information about our services, please visit our web site [www.ilcrop.com](http://www.ilcrop.com) or call our Champaign, IL or Puerto Rico offices.

All farm equipment is operating properly and we will soon be adding a spray tank for broadcast spraying and

upgrading our cone planters. A GPS guidance system was installed on our herbicide spray equipment to improve efficiently on broadcast sprayings. A spray systems seminar was organized by Emmanuel Lasalle last October and was offered to representatives of the seed companies that are PRABIA (Puerto Rico Agricultural Biotechnology Industry Association) members. It was a great success! Detailed information was offered along with the different options that are available on the Island related to precision agriculture. Our goal is to have at least three seminars per year about topics related or beneficial to the seed industry.

Elections in Puerto Rico were held in November. A new governor was elected and with the changes we are going to have a new Secretary of Agriculture. Carlos Flores is the name of the new Secretary of Agriculture and the general opinion

from agricultural leaders about his mention is a good one and he knows the seed industry on the island well. About the impact of PROMESA for the Puerto Rico Seed Industry is not clear yet but the Fiscal Control Board should adopt an economic policy for the island aimed at developing its agricultural and biotech research sectors. By January 2017 we should have more information related to what PROMESA and the new governor are planning to deal with Puerto Rico's economy. Meanwhile Farm crew as always is highly motivated with the goal of having another successful winter season. If you decide to escape from the cold weather or have business to do in Puerto Rico you are welcome to visit our farm. Happy New Year!





## Looking At Our Past & Preparing For Our Future

As we reflect back on 2016, there were many successes for Illinois farmers and seed companies. Current statewide yield estimates project historic yields in corn and soybeans. Corn yield projections of 202 bushels per acre (bu/ac) are better than the previous record of 200 bu/ac set in 2014. The 2016 yield is 25 bu/ac above the trend yield of 177 bu/ac for Illinois. In soybeans, current estimates predict a 62 bu/ac yield, which is 10 bushels better than the 52 bu/ac trend yield for Illinois. These yields were the result of timely planting into favorable soil conditions, and crop development that proceeded with minimal stress in most areas. Additionally, innovation from seed companies and breeders has provided seed genetics that provide farmers greater opportunities to maximize yields.

ISTA also had a successful year working on issues that are important to Illinois Seed Companies. A couple of these issues included favorable legislation being passed on GMO labeling and needed changes to language of the Illinois Seed Law. Support or opposition to many other seed related laws and proposals were also presented throughout the year.

As we look ahead to 2017, we will begin the year with a change in the White House and all associated cabinet positions, including Secretary of Agriculture. While it is still largely unknown exactly what positions this administration will take on many agriculture related issues, many of their talking points

include support for farmers and seed companies on issues such as Waters of the US, regulations for food and agriculture, and the next Farm Bill. Changes in the elected officials at the state level will also affect votes on agriculture issues. ISTA will continue to monitor all issues at the state and federal level, and communicate and defend the positions of our constituents.

We are sure to face challenges that we may or may not see coming. We must be prepared to take those challenges head-on, and move swiftly and effectively to educate and inform those involved on the effect a change may have on our industry. Innovation and seed technology will continue to expand. We must strive to support that expansion, and continue to find ways to educate the general public on the importance and need for continued improvement. Technology advancements such as gene editing, and how it is defined by regulators and viewed by the public, are sure to be issues that are important to seed companies in the coming year. We have an opportunity to avoid some of the same mistakes that were made with introducing GMO crops to the public. To continue the success of our industry and your company, we must educate ourselves, our employees, and the general public on the science behind these technologies.

There are also many other education opportunities in the upcoming year to help improve your employees and your operation. One specific meeting coming up on February

7<sup>th</sup> is the IL-IN Seed Conditioning Workshop. This is an excellent meeting for production employees and managers to obtain current, practical operational information on seed cleaning, color sorting, treating and other seed related topics from a number of industry experts.

I want to thank you all for your continued support of ISTA, and wish you all a happy, healthy, and prosperous 2017!

### ISTA Memberhips Renewals

2017 Membership renewals should be arriving in the mail. Your continued support through membership allows us to be a voice in Springfield as well as help the seed industry through representation at ASTA, Farm Bureau Roundtable and the Ag Legislative Day to name a few. If you are not a renewing member and would like more information on joining, please contact Heather Stone at [hstone@ilcrop.com](mailto:hstone@ilcrop.com) or Richard Denhart at [rdenhart\\_ista@ilcrop.com](mailto:rdenhart_ista@ilcrop.com).

### Illinois-Indiana Seed Conditioning Workshop

The IL-IN Seed Conditioning Workshop is hosted by Illinois Crop Improvement and Indiana Crop Improvement on alternating years. This year's workshop, hosted by Indiana Crop Improvement, will take place at the Indianapolis Marriott North. For registration and agenda details, please visit [www.cbconference.org](http://www.cbconference.org)



## IL Crop News Continued...

### Seed Quality Update

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the standard germination fee and that dead and abnormal seedlings are not reported separately on the Report of Analysis, they are combined and reported together as dead seed.

Our final update is that soybean seed counts are showing a slight increase in the size of soybean seed size this year with an average of 2,706 seeds per pound.

### IL Seed Trade Liaison Referee Program

Illinois Crop is in charge of the Illinois Seed Trade Referee program for the 2016/2017 testing season. This year we are testing corn, soybeans, sweet corn and alfalfa seed. Tests being performed

are standard germination, cold test, and accelerated aging on the 3 larger crops and just standard germination for the alfalfa. Tests will be conducted each month, November through February, and Illinois Crop will collect the data. Doug Miller, Illinois Crop CEO, has set up the analysis and Heather Stone, Admin Assistant, will run the analysis on the data and distribute it out to the participants. The referee was set up and designed to be a self-help tool for analysts to compare how they are doing compared to other analysts.

### ASTA Vegetable and Flower Seed Conference

Brittany Stoll and I will be attending the 2017 Vegetable and Flower Seed conference that will

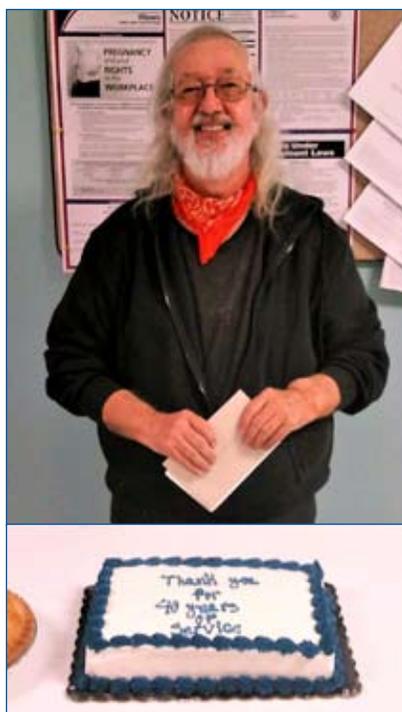
be held January 28th through January 31st at the Disney's Yacht and Beach Club Resort in Florida. Illinois Crop will have a display booth at table 23 and meeting table 114 located in the trading room. If you are planning on attending the Vegetable and Flower Seed Conference, please stop by and say hello and talk to us about any seed testing needs. We will also be available for meetings if you would like to sit down and discuss testing options. To prearrange a meeting, please call 217-359-4053 or email me at [sbeals@ilcrop.com](mailto:sbeals@ilcrop.com) to set up an appointment. Otherwise, just stop by the booth and we can make arrangements then.



## Congratulations to Gary Cook - 40yrs of Dedicated Service

Gary joined Illinois Crop Improvement on December 1, 1976. Prior to joining us, he completed his education at Western Illinois University in Macomb, IL and held a position at Mountjoy Hybrid Seed Company as a Field Technician. Since becoming a part of our team, Gary has held several different positions in the Seed Laboratory over the last forty years. Those positions included Lab Technician, Senior Lab Technician, Germination Supervisor, Lab Supervisor, Lab Director, and his current title as Chief Analyst. Gary also helped with field inspections and seed sampling for more than 20 years earlier in his career. He continues to perform testing in our seed laboratory while specializing in purity analysis on a wide variety of seeds.

Some of Gary's interests include invasive species in the plant kingdom, cover crop



research and testing, and native species seed establishment. Soybean visual varietal purity is also a special interest, as well as the experimental development of new crop kinds for grain, oil and conservation purposes.

Gary resides on a 40 acre homestead in Dewitt county Illinois. The acreage is used for wildlife conservation, fruit and vegetable production and native plant establishment. Invasive species control in native woodlots experiments are conducted on a regular basis. The most common invasive species are Bush Honeysuckle, Garlic Mustard, and Honey Locust. Gary plans to semi-retire within the next year but plans to maintain contact with friends and acquaintances within the seed industry that he has developed over the past 40 years. *Thank you Gary!!*



**Illinois Crop Improvement Association, Inc.**

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Champaign, IL 61822

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**Illinois Crop Improvement Association, Inc.**  
Shipping: 3105 Research Road, Champaign, Illinois 61822  
Tel 217.359.4053 Fax 217.359.4075 Toll Free 888.455.3105  
E-mail: [ilcrop@ilcrop.com](mailto:ilcrop@ilcrop.com) • Web: [www.ilcrop.com](http://www.ilcrop.com)



