



MICHIGAN
CROP IMPROVEMENT
ASSOCIATION™

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MCIA offers GMO testing with the Quick Scan II

TOM SILER

Pest management options are all the buzz today. One of the biggest selling points for a particular variety is the trait technology package it offers. Whether used to control insects or to be tolerant to a particular herbicide, trait technology is a critical choice farmers make. This important decision has season-long implications on pest management options. Over 90% of the corn and soybean acres grown in the U.S. in 2023 had some form of herbicide tolerance introduced by genetic engineering, and it does not appear to be slowing down anytime soon. The widespread use of these traits and the chemicals associated with them have resulted in multiple resistant pest populations (Figure 1). Almost all farmers have had firsthand experience with some sort of pest resistance and have had to adopt new practices to manage them. It is this reason that seed companies are investing heavily to develop new and improved trait technologies.

Just as the footprint of GMO crops is large here in the U.S., so is the risk of GMO contamination in non-GMO/food-grade/organic markets. One method to mitigate the amount of contamination in these markets is routine testing for GMOs at various points in the production chain. Traits



Figure 1. Population of potentially herbicide resistant pigweed

are designed to produce a specific protein that results in the desired expression and can be tested independently. For example, in soybean the Roundup Ready trait produces the CP4 EPSPS protein. If this protein alone is detected during testing, we are confident there is contamination in the sample and that it comes from a Roundup Ready crop. It is also functional to know the level of contamination present in a sample. Our lab has recently obtained a QuickScan II GMO testing system that gives us the ability to do such testing (Figure 2). To detect the presence of a GMO, we use a lateral flow strip “comb” which consists of multiple strips. Each strip contains different antibodies within them that are designed to bind to specific proteins. The comb is placed into a solution of ground sample material and water for five minutes. If a specific GMO protein is present in the solution, it will travel up the strip and bind to an antibody. This appears as a red line across the strip. A second control line will also appear above the test line to indicate

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The President's Post

BY CHRIS SCHMIDT, MCIA PRESIDENT



Another wheat seed season is in the rear-view mirror, and it certainly surpassed my initial expecta-

tions. Some of you may recall that it was HOT and DRY during grain fill back in June. In my mind, HOT & DRY translated to smaller than normal kernel size and I thought I was being super pro-active to order a set of smaller sift screens for my Clipper seed cleaner – only to find out that the wheat plant is more resilient to HOT & DRY weather than I gave it credit for. Ended up using the same sift screens I always do and put the new ones on the shelf as a reminder to trust Mother Nature (on occasion) to do the right thing.

Red wheat seed sales once again dominated the sales ledger, but I was somewhat surprised (in a good way) that white wheat sales improved over the previous year by 5%. This was despite the devastating low falling

number and sprout damage that white wheat growers experienced this past summer at harvest.

Every wheat seed season is inspired by the publication of the Michigan State University (MSU) wheat yield report. I'm always amazed by the influence of this report and by how much growers base their purchase decisions on it. It is sometimes, also, the kiss-of-death for a variety that was highly sought out the previous year, to quickly fall out of favor when it fails to deliver positive MSU yield results.

When you study the MSU wheat trial results you'll quickly notice that none of the top 5 commercially available red wheats, sorry, make that none of the top 10, came from the MSU wheat breeding program. The highest public performers for red wheat all became available to us seed growers from private breeding programs. MCIA has collaborated, researched, and written agreements with these private companies to secure seedstock in order to provide their germplasm to growers for the betterment of the Michigan wheat industry. In fact, the wheat lines MCIA has licensed from private breeders dominate the top 10 of the MSU wheat

yield report and no other seed company can match this accomplishment.

I don't mean for this to be a harsh criticism of the MSU wheat breeding program which I firmly believe is one of the finest land grant university breeding programs in the country. Rather, by identifying outstanding private lines that can be made available through the Michigan Crop Improvement channel to the Michigan wheat growers, we offer tremendous economic advantages to growers, maintaining the high value and positive perception of public varieties while keeping the door open for the next best red line to come out of MSU. Our association has a proven track record of successful multiplication, distribution, and delivery of seedstocks to provide the most benefit to the Michigan wheat farmer. So, when the next best red line, and hopefully the next best white line, is released by MSU, all of us seed growers should demand that it be made available to us, the true stalwarts of the Michigan wheat seed industry.



Notes from the lab

JOYCE HIEBERT

We've mostly wrapped up the wheat testing in the lab, and it was a very good year! Germination rates ran consistently around 97% viability. We had almost zero scab present on the seed, but we saw the weed pressure go up in the purity analyses because of the mild winter.

We are in full swing with seed corn testing and preparing for soybeans and dry beans. It's never too late to have your grains tested though, we'll be con-

tinuing that throughout the winter.

We have some new tests we're offering, including cold saturation and fast green, both of which are vigor tests for corn.

The Great Purge is continuing in the lab area as we rearrange our workflow areas, get rid of obsolete materials, and make room for new equipment. With new staff in the last few years have come fresh new ideas. We look forward to serving your crop testing needs this winter!

Fun Fact

In 2021 Michigan was the 4th largest producer of pumpkins in the U.S. growing just over 100 million pounds. That's a lot of pumpkin seeds!





Harvesting life lessons from underneath the walnut trees

About the first of October, the three large black walnut trees which reside in my side yard begin to shed their walnuts all over my lawn and driveway. Occasionally these massive trees drop their nuts on one of my family's vehicles or even on the head of an unsuspecting person below their canopy. I have often considered cutting these vintage trees down as they cause a constant mess from the time their leaves

start to fall in August until the final nuts have fallen in November. The problem is they are the only shade trees I have, and I just can't bear to cut them down, so I am forced to deal with the seemingly endless amounts of walnuts that fall from their branches each year. The process of removing these nuts for me, is a Sunday task, which consists of raking them into piles and then scooping them into the back of the JD Gator for disposal in the woods. This process goes on for about four weeks and lends me plenty of time to think. So, as I was scooping up the final pile last Sunday, I decided I would write my newsletter article illustrating three lessons I learned from raking walnuts and how they can relate to things that could help make a business successful.

Lesson 1. Patience and Persistence: No matter how clean I have the yard and driveway on Sunday, by Monday morning there are always more walnuts on the ground. Almost as if I hadn't done anything. This mirrors life in many ways. Tasks that seem never ending will eventually end and small consistent actions will usually yield significant results over time.

Lesson 2: The Power of Teamwork: When available, I solicit my two teenage boys to assist me in the removal of the walnuts. Having two extra sets of hands makes the process go more quickly and usually much more enjoyably. Just as in life or business, where effective leadership promotes the concept of teamwork, leveraging the strengths of different individuals to complete tasks is usually much more efficient and effective.

Lesson 3. Letting go: After weeks of cleaning up after these trees, I am often frustrated with the amount of time I have dedicated



to the project. It is these times when I most seriously consider taking the trees down. After a few weeks I have mostly forgotten about the hassle I endured and enjoy the trees for the rest of the year for their shade and beauty. This is no different than holding onto the past or letting things weigh us down. Move forward and focus on the positives of a situation not the negatives.

In the end, these walnut trees have not only dropped walnuts but also wisdom. These trees remind us of the importance of patience, persistence and letting go, in both our daily lives and business endeavors. So, as you go about your tasks and challenges, remember the lessons of the walnut trees and the valuable insights they offer.

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a successful test. After five minutes, the comb is inserted into the Quicksan II machine which uses image processing to quantify the amount of each GMO protein in the sample. This system gives us the ability to test for contamination of non-GMO crops from GMO corn (insect and herbicide traits) and GMO soybean (herbicide traits) as well as screening samples for mycotoxins. Testing parameters can be tailored to customers' specific needs. More information can be obtained by calling us at 517-332-3546



Figure 2. Quicksan II GMO Testing Setup.



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Michigan Crop Improvement Association

SAVE THE DATE

**FEBRUARY 27
2024**

**2023-2024
MCIA Annual Meeting**

Eagle Eye Banquet Center
Bath, MI

Calendar of Events 2023 - 2024

November 15 Seed Distribution Reports Due	<i>MCIA Office</i>
November 23-24 Thanksgiving Break	<i>Office Closed</i>
December 5-8 ASTA Seed Conference	<i>Orlando, FL</i>
December 24 - January 2 Holiday Break	<i>Office Closed</i>
February 15 Order Changes for Spring Foundation Seed Due	<i>MCIA Office</i>
February 27 MCIA Annual Membership Meeting	<i>Eagle Eye Banquet Center, Bath</i>