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ASSOCIATION™

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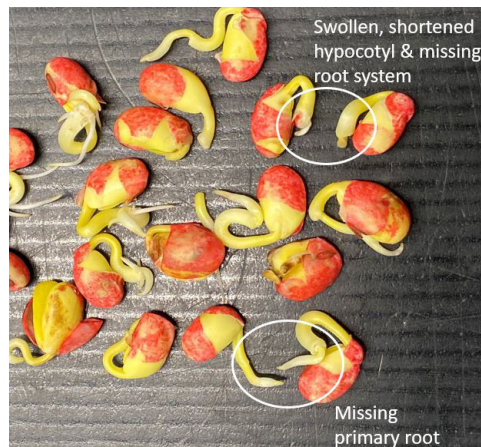
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Soybean Summary

JOYCE HIEBERT AND LAUREN MEZO

Testing for soybeans is winding down for the year as planting season starts. Our averages were a little low this year due to mechanical damage. The average warm germination for untreated soybeans was 93% and 90% for treated. Why the flip from the treated germinations being higher? It all boils down to handling. Mechanical breakage of seeds may occur during harvesting, threshing, loading, hauling, unloading, cleaning, and treating. The more seeds are handled, the more impact injury occurs. Structurally, the embryo is on the outer surface of the seed, thus making them



Detached cotyledon that has been healed. No to little hypocotyl growth. Insufficient root system



more susceptible to bruising and impact injury. The seed coat is designed to protect the embryo, but when moisture levels in the seed fluctuate at harvest time, the seed coat expands and contracts, causing the seed coat to weaken. This could result in damaged primary roots, hypocotyls, or epicotyls, and broken or detached cotyledons. Bruised areas will decay and result in a weakened plant.

You know your seed and practices best, so be aware of your treating/handling processes as it relates to moisture levels in your seed. If you are in doubt about the quality of your seed but are crunched for time, we can do an overnight TZ test which can be a good indicator of germination results.

Fun Fact

Morel Mushrooms can be found in every county in Michigan and according to the

State, more people go into the woods hunting for mushrooms in the month of May than go deer hunting in November!



The President's Post

BY CHRIS SCHMIDT, MCIA PRESIDENT



Something interesting has transpired down on the farm over the past year and I'm a little reluctant to tell you about

IT, but felt the story was worth sharing.

You see - I've been in the seed business 35 years this year, a relative newcomer compared to some of you. We're a 2 ½ man operation and time is always short, seemingly, regardless of the season. It's always been the challenge to get customers loaded up and out of here so I could get back to whatever it was I was so intent on doing. Gotta keep all the balls in the air and the wheels turning.

Beginning last fall I began taking an interest in the conversation that fellow growers wanted to share. I mean – really taking the time to listen. I slowed down a wee bit to actually hear the tales they felt worthy of sharing rather than making the conversation short and all about business. Not to say that I did a total 180, but it struck me this spring when one of my regulars, Art from Birch Run, came to pick up his seed oats. I took time to shut the fork truck off and listen to what Art had to say on that splendid spring sunny day. So back and forth we went telling stories about successes and failures, family, God, and farming. When we wrapped up half an hour later, Art said to me how nice it was to visit and looked forward to seeing me in the fall for his wheat seed. OK... Art's not a huge customer but while he has 10 years on

me, he's smart, insightful, full of wisdom and loyal as they come. What Art had to say was HUGELY (go Donald) important to him and it became HUGELY important to me to understand this man I've met 70 times over the past 35 years and really never got to understand. I was always too busy.

Bottom line –farmers are just people with the same wants and desires as any of us. Yes – we'll always have the next field to plant and next tote bag to fill but I truly believe Harry Chapin summed it up best in his hit song "Cats in the Cradle". Take a listen sometime and the message is clear.

Be safe out there this season and be kind to those you love.

A handwritten signature in black ink, appearing to read "Chris Schmidt". The signature is fluid and cursive.

Technology Challenges Tradition

CHRIS TIEDJE

Seed certification and quality assurance programs have largely been about the variety – varietal identity and varietal purity. Seed qualities such as germination, vigor, and other crops are important as well, but there is no other agency whose primary focus is the variety. But what is the definition of a variety? The Federal Seed Act defines a variety as: a subdivision of a kind which is characterized by growth, plant, fruit, seed, or other characters by which it can be differentiated from other sorts of the same kind. Examples would be Marquis wheat, Flat Dutch cabbage, Manchu soybeans, Oxheart carrot, and so forth. While names of these varieties may be unfamiliar, the concept is; a variety is expressed in terms of visual characters such as flower color, plant height, lodging resistance, disease resistance, or many others. Common

terms which might go along with this are "off-type" and "variant."

In today's world of weed and insect resistance, there is a new word – trait. There was a time when a variety was developed (e.g. Elgin) and a new improvement was made to the variety, a new name was given (e.g. Elgin 87). Registrations and variety protection were needed for each. In most cases, one came before the other and the old variety went to the wayside when the new one was available. In today's seed corn world, we are very familiar with one product (variety?) having multiple technologies (traits). The old definition of a trait, such as plant height or flower color, is not what we think of, but now, rather the insect or herbicide resistance. Is one right, wrong, or just different?

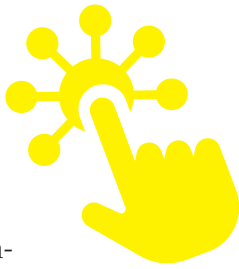
Maybe it is helpful to think of a variety analytically. A variety is determined by its genetic code. It is the "computer program" for all the visual characteristics, disease resistances, yield, and complex interactions which

make it a unique variety. But what if a new "line" is inserted into the program? The new line would program the plant to be resistant to a herbicide. That same exact line could even be added to other varieties or crops. A new term has emerged to help address some of these complexities – germplasm. Germplasm usually refers to the majority of the genetic code (variety) and trait refers to the insertion(s).

Back to our question: What is a variety? Does a trait (herbicide resistance) differentiate one from another, or is a variety comprised of the germplasm with multiple traits? The answer to this question might depend on whether we think of what we can see or measure visually, or what is measurable genetically. This is a far-reaching question.

It is important that seed programs incorporate systems to measure each. These may occur in the field or lab. Germplasm or plant characters can be

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TOM SILER

MCIA is in the process of transitioning to a new field inspection reporting format. Most growers are familiar with the paper copies of inspection reports that have been utilized for many years. To complete these reports, inspectors would walk fields and record their findings on notecards, then transfer the information to the paper report once the inspection was complete. The grower, applicant, inspector, and MCIA office would each receive a carbon copy of the inspection report for their records.

Starting this season, MCIA will test using a phone app to collect inspection information. Field details and locations will be uploaded to the app once applications for field inspections are received. Inspectors can then use the app to get directions to the field, record their findings, and take any relevant notes about the field. Once the inspection is complete, a pdf report will be generated which can then be immediately sent to all involved parties via text or email, reducing the timeframe between inspection and reporting.

In addition to all the information that was on the paper reports (off-types, variants, isolation, weeds, diseases, etc.), the new reports can include pictures taken by inspectors and have points of concern in the field referenced by GPS coordinates. MCIA will work with a select group of producers this season and will plan to fully transition to the new program for the 2024 growing season. We hope this new inspection reporting process will improve communication and reporting for producers and increase efficiency for inspectors and office staff.

Manager's Minute

BY C. JAMES PALMER, MCIA MANAGER



Better than the Microwave?

In my opinion, the three biggest “game changing” developments of my lifetime have been the microwave oven, the mobile phone and the auto-steer capability on tractors. I would consider myself an “early adopter” of all three of these technologies. I quickly recognized the efficiencies and benefits of each and was simply astounded how much easier they made my life. All three of these now are just taken for granted and it seems almost impossible to think of life without them.

I can still remember in the early 1980's my grandmother proudly unveiled her new purchase, the microwave oven. Among other things, this technological beauty was able to cook popcorn, bake potatoes and melt butter in 75% less time than the conventional methods of cooking. This invention saved time, made cooking easier while using less energy than the normal oven. My grandfather always called the microwave the “rubberizer” which was in reference to leaving my grandmother's rolls in the microwave for too long of a time. Even though he was initially against it, he too came to realize its convenience. Today over 90% of American households use a microwave oven.

Another great convenience I enjoy is the mobile phone. I bought my first “bag phone” in 1990. This device was powered by the car's cigarette lighter port and allowed phone calls outside the home. This invention slowly eliminated the need for “pay phones” and as time went on the phones became smaller and more powerful. Initially, mobile phones were considered a luxury and much too expensive to use for anything other than an emergency. In fact, some of the first mobile phone plans could cost over one dollar per minute and did not include long distance or “roaming” charges. In 1995 less than 12% of the population had mobile phones, today over 92% of Americans have a mobile phone and less than 35% of American households have a landline. Today's mobile phone can easily fit in a pocket and is now more powerful than the original super computers.

While the microwave oven and the mobile phone were certainly revolutionary, I believe the GPS/auto steer capability on tractors is another innovation which has changed our lives for the better. I installed my first auto steer in 2010. This innovation has allowed for precision farming, reducing human error and fatigue, while increasing efficiency and productivity. This technology has become so transformative, like many others today, I will spend hours figuring out why my auto-steer doesn't work rather than manually operating the tractor with the steering wheel. In 2001 about 5% of farms used auto-steer technology while today it is estimated to be used on over 75% of the corn acres in the U.S.

As impressive as these technologies are, I believe there is another “game changer” in our midst and that is the technology of Artificial Intelligence (AI). Many may have heard of CHAT GPT an AI program which uses massive amounts of data to understand and generate human-like responses. The responses are often so intuitive many high school and college students use this program to help them with their homework and even write complicated term papers. Implementing these types of AI tools in agriculture will help farms optimize their yields, become even more efficient, be less wasteful and lead to a more resilient food system. As with the technologies mentioned above, at its onset, AI seems like a far-fetched idea, but I'm betting in twenty years it'll be better than the microwave oven. What do you think?



Michigan Crop Improvement Association
PO Box 21008
Lansing, MI 48909

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measured in the field while traits are more easily measured in the lab. MCIA is in the process of purchasing equipment to help quantify the presence of low levels of traited product in soybeans. This is useful for adventitious presence

in non-GMO products but not functional for trait purity. MCIA plans to have this test available soon, in time for Fall testing season. MCIA currently offers herbicide bio-assays for trait confirmation of Roundup and Enlist products.

Calendar of Events 2023

| | |
|--|--------------------------|
| May 29 Memorial Day | <i>Office Closed</i> |
| June 1 Small Grain Applications Due | <i>MCIA Office</i> |
| June 4-7 AOSCA Annual Meeting | <i>Minneapolis, MN</i> |
| June 10-15 AOSCA/SCST Annual Meeting | <i>Saskatoon, Canada</i> |
| July 4 Independence Day | <i>Office Closed</i> |
| August 15 Soybean and Dry Bean Applications Due Final Orders for Wheat Seed Stock Due | <i>MCIA Office</i> |