



THE ORTET

Volume Five

Midwest Apple Improvement Association
Autumn 2019 Newsletter



In This Issue

- 3 A Message from the Chairman
- 4 President's Report
- 5 August 2019 Press Release
- 6 Seedlings from MAIA1
- 7 Ohio Cider: Year 3
- 9 Grafting Over to MAIA Varieties
- 9 MAIA1 International News
- 10 Coming Soon from MAIA
- 11 Niche Varieties and Their Value

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Key to MAIA Releases: Cultivar, Trademark, and Test Names

Trademark Name	Cultivar Name	Test Name	Parents/Cross	Patent Number
EverCrisp	MAIA1	MDD5-44	Honeycrisp x Fuji	PP24,579
Rosalee	MAIA11	MDD5-41	Honeycrisp x Fuji	PP29,146
Summerset	MAIA12	MDD3-75	Honeycrisp x Fuji	PP29,213
Ludacrisp	MAIA-L	Juicy Fruit	Honeycrisp, open pollinated	PP30472
Sweet Zinger	MAIA-Z	MJE 1238	Goldrush x Sweet 16	PP30059

A Message from the Chairman



David Doud

MAIA Chairman of the Board
Countyline Orchard, Wabash, IN
Photo credit: Ann Hunt

Jim Eckert is retiring from the MAIA board of directors. Jim has been a member since the beginning, served on the first board of directors, took his turn at president in the early 2000's, and re-upped when MAIA reorganized in 2010. Jim has taken and grown out more seedlings than any other member. Jim exemplifies the selflessness that has taken the organization to this point. We wish him well, his presence will be missed. When you see him at the meetings this winter thank him for his contributions to MAIA's (and your) success.

MAIA has now been a stand alone organization for one year. Our website has been renovated, communication with the organization streamlined, and work continues on the database which contains the 700+ members and the trees they possess. Thanks go out to Bill Dodd, assisted by Chip Wigton, as they keep a handle on our growing organization.

Twenty years ago, if anyone dreamed of a day when MAIA would be an international organization with a portfolio of varieties, they kept it to themselves. MAIA was formed with the idea it would attempt to develop apple varieties for the farm marketers who would be excluded from the clubs. We are doing that and against the odds we are having an impact worldwide. It is my hope that by providing superior eating experiences to the consumer we can increase apple consumption and push back against our competitors who are not our fellow growers, but rather the ubiquitous processed snack foods.

I wrap up this edition with an unsolicited response received from a fellow who happened to end up at a table positioned between myself and another table of our international partners this October. As we talked across him, he asked what it was all about. I handed him an EverCrisp™ apple. I returned home a few days later to find this response on social media: "David, thanks again for that delicious Evercrisp apple you handed me in Oberlin! It was my lunch on the flight home the next day--a treat almost beyond description, and better than anything I've ever brought home from our local store. I'll petition Whole Foods to go take a look! Hope the rest of your sales trip went well. Cheers, Allan"

Keep up the good work, everyone.

Membership Dues and Paperwork: Don't Fall Behind!

MAIA prides itself on being a grower friendly organization. There are no restrictions on becoming a member in the US and Canada. Tree purchases are open to anyone that is a member in good standing and has a signed trademark agreement on file. Unfortunately some members have not filed the proper paperwork or are in arrears on their membership dues or trademark fees. An MAIA do not sell list has been generated and forwarded to licensed MAIA nurseries. Please contact MAIA if you have concerns about being on this list.

MAIA President, Hillcrest Orchard, Amherst, OH

The Motley Fool financial services website has a team that seeks out companies that they label as rule breakers. These rule breaking companies are then recommended as investment opportunities. I enjoy reading about visionaries that create new industries, look at existing businesses and recreate them and companies that overwhelm their competition with an insurmountable network effect.

Let's break some rules ourselves and overwhelm the world with healthier, tastier apples.

MAIA Member Orchards

8
Canada

2
France

2
South Africa

1
New Zealand

State	Number of MAIA Member Orchards
Alaska	3
Arizona	1
California	9
Colorado	3
Connecticut	1
Delaware	1
District of Columbia	1
Florida	1
Georgia	1
Hawaii	23
Idaho	1
Illinois	30
Indiana	8
Iowa	10
Kansas	2
Kentucky	1
Louisiana	1
Maine	3
Maryland	1
Massachusetts	8
Michigan	24
Minnesota	8
Mississippi	1
Missouri	6
Montana	1
Nebraska	1
Nevada	1
New Hampshire	4
New Jersey	11
New Mexico	5
New York	137
North Carolina	14
North Dakota	1
Ohio	80
Oklahoma	1
Oregon	5
Pennsylvania	77
Rhode Island	2
South Carolina	1
South Dakota	3
Tennessee	1
Texas	1
Utah	1
Vermont	8
Virginia	16
Washington	40
West Virginia	2
Wisconsin	118
Wyoming	1

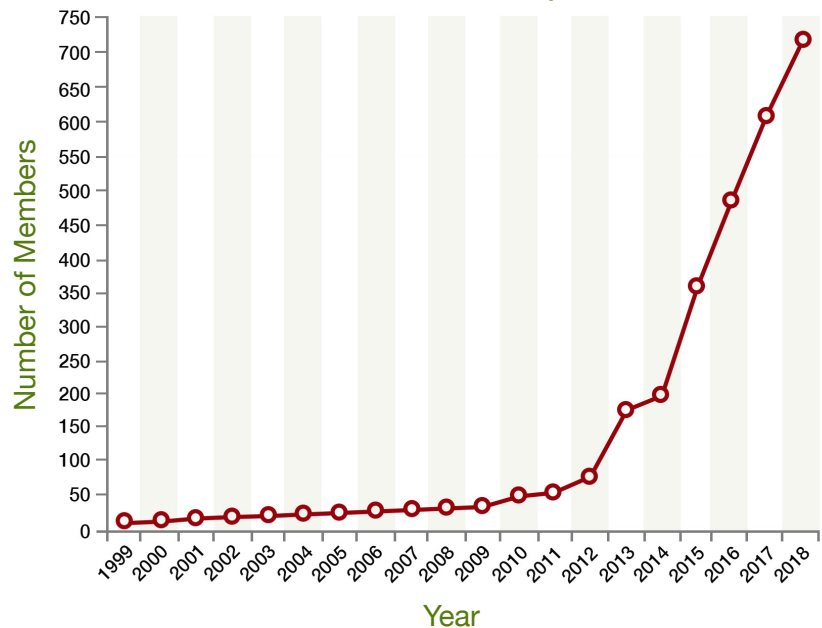
MAIA Annual Meeting

The MAIA Annual Meeting will be held in conjunction with the International Fruit Tree Association meeting February 10-13, 2020 at the Amway Grand Plaza in Grand Rapids, Michigan. Join us Monday, February 10 at the New Holland Knickerbocker Brew Pub starting at 7pm.

Did you know?

MAIA has a new, continuous license agreement for those who plant and grow our trees. No need to submit the agreement every year! Check out our website for details.

MAIA Membership Growth



August 2019 Press Release: MAIA Launches New Website

Website Reflects MAIA's Next Step in Evolution of Bringing Varieties to Market.

MAIA today launches a new website at MAIAApples.com, and just as he was preparing to flip the switch, MAIA President Bill Dodd paused and noted, "Wow, this is a really freaking amazing new site."

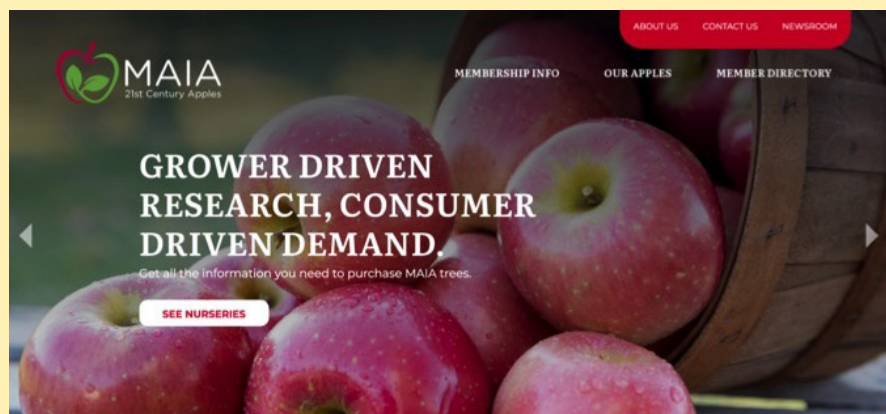
MAIA currently has more than 700 members through the Midwest and North America focused on developing and marketing apples for the modern consumer and modern grower.

"I know we're based in the Midwest and are supposed to be modest, but – wow – we're really proud of the new site," Dodd said. As he scrolled through the pages, he noted the site reflects MAIA's latest evolution in growing membership and bringing new varieties to market.

"In the past two years, we have hit a major milestone with the successful roll-out of MAIA-1 (EverCrisp®) at grocers nationwide," Dodd added. "Our new website puts us in the right place online in terms of helping growers, distributors and retailers understand who we are, what we're offering and where we're heading."

Among the highlights:

- Extensive profiles of MAIA's top varieties, including MAIA-1 (EverCrisp®), as well as varieties entering the market in the near future, including: MAIA-L (Ludacrisp®), MAIA12 (Summerset®), MAIA11 (Rosalee®) and MAIA-Z (Sweet Zinger®).
- An extensive directory of all MAIA members, including growers and nurseries.
- Membership information, including simple forms for joining the growing MAIA family of orchards.
- Lots of pictures and stories about MAIA apples.



The Next Generation:

Seedlings from MAIA1

Seedlings from seven crosses were planted in Illinois (near St. Louis) at Eckert Orchards in 2015. The majority of these trees fruited this year. Weekly evaluations began August 18 and continued throughout October 14. David Doud, Bill Dodd and Chip Wigton were on site in early September. I covered the other collection dates.

Three of the crosses - MAIA1 x Pixie Crunch, MAIA1 x DF24-121, and Goldrush x MAIA1- can be characterized as “best by best” with these known parents. Two other crosses include Ralls Janet and Edward 7th as parents, as we look for late blooming material.

David Doud gave this report of their visit in early September: “We evaluated MAIA1 x Pixie Crunch. Eckert’s finished harvest of Honeycrisp the week before, and we were looking at varieties that ripen shortly after Honeycrisp. There were a handful of seedlings that were overripe, and possibly a quarter/third of the trees which



An offspring from MAIA1, chosen for its delightful flavor and texture.



MAIA seedlings started in plug trays before transplanting to the field.

were not fruiting and several that were not ripe yet. Of the seedlings with ripe fruit, nine were identified and marked as having texture, flavor, and appearance that interest MAIA. The overall favorite has an appearance that resembles Honeycrisp. This tree had a nice crop, no fruit on the ground, no bitter pit evident, no cracking observed. It has tender crisp flesh reminiscent of Honeycrisp. There were other selections that more resembled MAIA1, with harder flesh. Others were more reminiscent of Pixie Crunch. Interestingly, most of the seedlings had a calyx that closely resembled Pixie Crunch.”

On September 5, budwood from five MAIA1 x Pixie Crunch seedlings was sent for propagation into test trees. This cross has given a lot of “pretty good” apples ripening through the season. But the bar is now much higher, so the challenge is to find something great.

In 2018, leaves and fruit from 30 trees from the Goldrush x MAIA1 cross were sent to Ohio State for genomic study.

A 2019 seedling block was also established with scab resistant Swiss material as a common parent. This was my first experience with seedlings grown in plug trays. There was great uniformity and vigor – thanks to Greg Miller!

Eckert’s is now on our fifth block of seedlings. The first three had the luxury of cornbelt isolation. There were no deer issues, and a pass was given on most diseases. The 2015 and 2019 blocks are adjacent to commercial apples and timber so deer vigilance and a spray program (bitter rot anyone?) are necessary. Over the years, seedling blocks have included a number of “leaners.” Deeper planting seems to reduce this problem. Evaluation of seedlings is an ongoing adventure!

Jim Eckert

MAIA board member, Eckert Orchards



The aftermath of a cider tasting event.

Year 3:

Ohio Cider: Blending Tradition and Discovery for the Modern Market

Quick overview:

Apples associated with the MAIA breeding program may be valuable in both fresh market and in craft hard cider production, whether through sales to regional hard cider producers or in-house processing. We are evaluating a wide range of apple germplasm associated with the MAIA breeding program for its value in hard cider. The longer-term intent is to facilitate development of a quality 'hard cider type' associated with Midwest apples/orchards.

Procedure:

Bushel quantities of fruit are harvested and pressed, and juice analyzed for pH, brix, titratable acidity (% and g/L) and phenolic compounds. In 2018, samples were also sent to OSU flavor scientists in Columbus for additional testing for positive cider attributes. Taste testing of the fermented product is organized annually through the MAIA involving MAIA enthusiasts and affiliated hard cider/wine industry members. The chemical data from the fresh juice, coupled with the taste tests of single varietal ciders, allows us to identify the apple selections with the greatest cider potential.



Cider evaluation at Quarry Hill Winery.

Results:

From 2016-2018 sampling, the starting pool of 201 apple varieties was narrowed down to 30 promising selections for hard cider production. Some of these have value in both fresh market and hard cider, and some are exclusively hard cider apples that add body and character beyond what regular "snack apples" can offer.

Apples have been categorized according to the English cider designations of Sharp, Sweet, Bittersharp, and Bittersweet based on acid/phenolic ratios. We have identified numerous Bittersharp apples that could be useful to cidermakers as a source of acidity and phenolics. Several of these Bittersharp apples also have red flesh, allowing for an attractive rosé or blush cider in

line with recent market trends. Many of our selections fall in the Sharp category, as is common for snack apples. Within this group, several varieties, including MAIA1 and MAIA-L, have promise for both the hard cider and fresh consumption markets. In these instances, potential for cider stems from high levels of both acidity and sugar, which are necessary components of quality hard cider blends.

None of the 201 varieties sampled could be classified as a true bittersweet apple, based on classification thresholds accepted in the UK. However, we have identified several promising selections with high total phenolics relative to levels of acidity. In approximation of a true bittersweet apple, these selections may allow a cidemaker to impart

bitterness to a blend without increasing acidity. We will continue to analyze these and other selections under different fermentation conditions to compare the juice chemistry and flavors to that of commercially available hard cider varieties.

Funding source: Ohio Department of Agriculture Specialty Crops Block Grant (2016-2018 and 2018-2020)

Acknowledgements: Special thanks to Bent Ladder Cider and Wine (Doylestown, OH), Quarry Hill Winery (Berlin Heights, OH), and Mad Moon Craft Cidery (Columbus, OH), Sage's Apples (Chardon, OH), White House Fruit Farm (Canfield, OH), and Doud Orchards (Denver, IN) for their assistance with this project.

Andy Kirk

Ashtabula Agricultural Research Station,
The Ohio State University

Diane Miller

Department of Horticulture and Cop Science,
The Ohio State University



Left and below: Cider selections vary in color and clarity.

Bottom Left: Researcher Diane Miller contemplates cider color.



Grafting Over to MAIA Varieties

Are you having trouble getting MAIA nursery stock? Do you have well-established trees and don't want to set yourself back by ripping out and putting in a whole new planting? Consider grafting over to MAIA varieties! Top worked trees are treated like newly planted nursery trees. MAIA membership is required, the trademark contract needs to be signed, and a \$1.00 per tree royalty is due the year

that top working takes place. MAIA can help you find bud wood.

An insert entitled "Request to MAIA to Graft or Top-work Trees" is included with the mailing of this newsletter. If you would like to graft existing blocks over to MAIA patented varieties, please submit the information to Bill Dodd, either by mail or email, at the addresses listed on the form.

MAIA1 International News

There are MAIA1 test plantings in several locations throughout the world. Plant Breeders Rights and trademarks have been obtained to protect MAIA's Intellectual Property. The International Pome Fruit Association (IPA) has partnered with MAIA to manage the MAIA1 international plantings and the export licenses and branding and marketing of EverCrisp®. The first significant international MAIA1 commercial planting of approximately 40 acres will be planted in Chile in 2020. IPA members from Italy, New Zealand, Australia and South Africa continue to evaluate test trees in their respective countries. Representatives from IPA member countries have also visited commercial plantings in OH, NY and MI over the past 5 years to aid in their evaluations. US growers have shared experiences, both positive and challenging with IPA members. New commercial plantings are expected in other IPA countries as soon as 2021.



All photos: Partners from the International Pome Fruit Association (IPA) visit MAIA1 plantings in the United States.

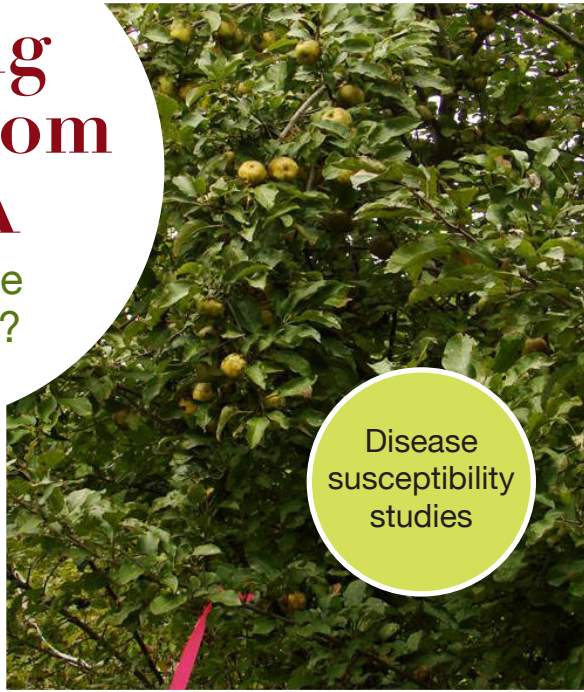


Creation
of new
seedlings



Data for
New Variety
Releases

**Coming
Soon From
MAIA**
What are we
working on?



Disease
susceptibility
studies



Consumer
evaluations
of new test
selections

Niche Varieties and Their Value

What do farm market apple customers really want? Do they want familiar flavors and textures, or are they seeking out novel taste experiences? The answer is yes, and yes, depending on the customer. Entertainment is a big part of the shopping experience for many people, and new varieties can satisfy that need. Other folks prefer to stick with what they know and may need to be encouraged to try a new variety.

MAIA varieties can offer novelty and exciting new flavors which are not found in the grocery aisle. They can also allow your farm market to showcase signature varieties not found at other farm markets. We can call these 'niche varieties', as they will be a smaller slice of your sales.

I regularly offer test varieties at my farmers market stand, using the test number for labeling, and cutting and sampling to promote them. Several numbers are generating considerable repeat business. A few folks even try to remember the number from last years market, with mixed success! Many ask for a number from previous weeks. In other words, the new has become familiar.

Another grower tells me they have put out a bin of mixed test apples, sort of a grab-bag bin, for customers to fill their bag. This is akin to Forrest Gump's box of chocolates in that they don't know what their next apple will taste like. Very high in novelty and entertainment, but difficult to gain familiarity.

Now about those numbers. As I stated in a prior article, they are confusing to remember for us growers, let alone

customers. I know some markets have given these test varieties local names, but caution is needed to avoid a multitude of names for the same cultivar!

Your science/research committee has been busily taste testing many numbers with consumers over the past few years, and we are finding several outstanding cultivars from our test blocks. To protect patentability, I am not giving specific numbers here, but will gladly respond to emails to lsphillips50@frontier.com.

On a different note, many of our members have planted test trees on their own farms. Hopefully, you have been able to fruit these trees and evaluate them in some manner. If you have, I would like to hear your opinions on how they have grown for you and which ones you really like, or dislike! Send any comments to same email address.



Brad Phillips

Chairman of the MAIA Science Committee



Photos: Niche varieties can add novelty to your market.



