



# THE ORTET

Volume Eight

Midwest Apple Improvement Association

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## MAIA Staff

- Bill Dodd**  
President
- Chip Wigton**  
Senior Vice President
- Karen Burkhart**  
Senior Vice President, Atlantic Operations
- Hank Markgraf**  
Consultant
- Bill Pitts**  
Consultant

### Key to MAIA Releases

TRADEMARK NAME	CULTIVAR NAME	PARENTS/CROSS	PLANT PATENT #	HARVEST DATES
SWEET MAIA®	MAIA-SM	HONEYCRISP X WINECRISP	USPP 34,437	1 WK. BEFORE GALA
SUMMERSET®	MAIA12	HONEYCRISP X FUJI	USPP 29,213	WITH HONEYCRISP
ROSALEE®	MAIA11	HONEYCRISP X FUJI	USPP 29,146	2 WKS. AFTER GOLDEN DELICIOUS
SWEET ZINGER®	MAIA-Z	GOLDRUSH X SWEET 16	USPP 30,059	3 WKS. AFTER GOLDEN DELICIOUS
LUDACRISP®	MAIA-L	SWEET 16, OPEN POLLINATED	USPP 30,472	3-4 WKS. AFTER GOLDEN DELICIOUS
EVERCRISP®	MAIA1	HONEYCRISP X FUJI	USPP 24,579	4 WKS. AFTER GOLDEN DELICIOUS

## MAIA Board of Directors

- David Doud**  
Chairman of the Board
- Felix Cooper**  
Vice Chairman of the Board
- Allen Grobe**  
Secretary/Treasurer
- Tom DeMaree**  
Board Member
- Chris Eckert**  
Board Member
- David Hull**  
Board Member
- Andy Lynd**  
Board Member
- Dano Simmons**  
Board Member
- Jacob Wafler**  
Board Member

## A Message From The Chairman

I am proud to associate with the apple breeding program, which delivered on its goal of new, better apples for “the rest of us.” Thank you to our founders for not only identifying an issue (proprietary varieties not being available to the great majority of fruit growers) but going beyond and taking action to address the situation. Thank you to the approximately 50 growers, researchers, and enthusiasts who pledged their \$100/year to keep the effort alive in the early years despite the poor odds. Thank you to the volunteers who pollinated flowers, kept track of apples, extracted seeds, cared for seedlings, and evaluated fruit.

In our own direct market business, MAIA varieties have been the driver for enthusiastic customer engagement. Formerly, retail sales took a deep drop after Halloween, but not anymore. November and December sales are strong, with EverCrisp® and Ludacrisp® exciting customers and driving business.

“EverCrisp® (MAIA1 variety) is the single most important factor which allowed us to keep our market open year-round. It is a game changer. Customers return in January and February particularly to get EverCrisp®.”

*- Calvin Beasley, Danville, Indiana, as related at a summer horticultural meeting hosted by his operation.*

I related this story on the MAIA Facebook page earlier this season. I encourage all members with access to social media to join the page for questions, answers, and timely updates on MAIA varieties and business. <https://www.facebook.com/groups/MAIAMembersGroup>

Thank you to the 1000+ more recent members for taking a chance on these new varieties. Your support allows the breeding and evaluation process to continue. Exciting material is in the pipeline, and we are far from done.



**David Doud**  
MAIA Chairman of the Board  
Countyline Orchard, Wabash, IN



## From the President

# 2022 MAIA Update

Apple breeding activities continue at MAIA. Evaluations of new exciting material have expanded to include their interaction on different rootstocks. The goal is to provide MAIA members with as much information as possible when a new selection is released. Reality Research in Lyons, NY and Bill Pitts are leading the new variety efforts. Reality Research and MAIA will host a field day August 9, 2023, to tour the facilities and announce breeding program updates.

Apple Innovations, Ltd (AI) is a company that resulted from a 2015 international joint venture agreement between MAIA and the International Pome Fruit Alliance (IPA). Members of IPA are Heartland (New Zealand), Montague Fresh (Australia), San Clemente (Chile), CMI Orchards (USA), Fruitways (South Africa), and VOG/VIP (Italy). The agreement granted IPA members an option to test MAIA1 (EverCrisp®) for 5 years and to exclusively manage MAIA1 (EverCrisp®) in their respective territories if the option was executed. The option period has been extended to August 1, 2025. In exchange for the option, IPA has funded applications for trademark and Plant Breeders Rights (PBR) protection for EverCrisp® and MAIA1



## Bill Dodd

### MAIA President

Hillcrest Orchard, Amherst, OH

on MAIA's behalf in many countries. AI will be charged with defending the trademark and PBR on the world stage.

The makeup of the AI board of directors is 3 members from IPA and 3 members from MAIA. AI will be managing all export licensing. The goal is to ensure an organized release of the brand EverCrisp® throughout the world. The export license for US exporters will include a 2% fee payable to Apple Innovations Ltd.

Chile and New Zealand have executed their option and will have EverCrisp® branded fruit to market in 2023.

A reporter asked me, "When are there too many apple varieties? Is MAIA part of the problem?" My answer: As an industry, we need to continually strive to improve. We are competing with other fruits in the produce aisle that are developing better products. Grapes, clementines, and many more are creating improved products. MAIA has set the bar incredibly high; above average is not good enough. I grow all the MAIA releases at my pick-your-own farm. They are all better eating experiences than Gala. Some have flaws that will probably keep them out of grocery stores, but flavor and texture are not the problems. MAIA will keep working toward the

perfect apple and let growers and the marketplace decide what happens with them.

The EverCrisp® customer base continues to grow. MAIA has helped many sales desks get started with new customers over the past several years with promotional materials and money. The good news is that most of the new accounts have returned to become steady, growing partners.

The Ludacrisp® PLU is 3537 and EverCrisp® is 3490. We have some rolls of stickers at the office if you need some.

If you would like to visit or have questions about anything MAIA, please contact me at 440.670.2883 or bdodd@maiaapples.com.



## Retiring Board Member David Hull

MAIA staff and Board members would like to thank David Hull of Whitehouse Fruit Farms in Canfield, OH, for his service to the Midwest Apple Improvement Association. David is a founding member, sitting on the Board since its inception and serving seven years as our first Chairman. He is also an active member of the MAIA Research Committee.

David has provided his time, effort, leadership, and land to the MAIA cause of better-quality apples. David has planted 2-4 trees on B9 rootstock of every 2nd generation test selection that MAIA has ever made. That is close to 1000 trees; those test trees, spaced widely to determine their tree form and traits, occupied a lot of space at his farm. Beyond his evaluation work, David allowed MAIA access anytime to evaluate his plantings. The consequence is that the very best MAIA selections at his place were regularly cut back to stubs for scion wood!

Fortunately, his family farm market has benefitted from David's awareness of the best of the MAIA apples, putting in early plantings of EverCrisp®, Rosalee®, and others. He also figured out what great cider could be made from the diverse mix of lesser MAIA test apples present on his farm.

A sincere thanks to David Hull for his service. David exemplifies the grass-roots grower involvement that has contributed to MAIA's success.



## MAIA Annual Meeting Reception

**Monday, February 13, 2023,**  
in conjunction with the IFTA meeting

**Archival Brewing**  
(6266 West River Dr. NE, Belmont, MI).

All members and IFTA attendees are invited!!  
Join us for refreshments and light snacks.

Continuous transportation will be provided from the Amway Grand Plaza Hotel (loading on Lyon Street entrance) to Archival Brewery. Small buses will depart at 5:30 pm, at 15- to 30-minute intervals, returning until 10 pm.

# Reality Research, LLC Variety Trials and New Crosses

Reality Research has been partnering with MAIA to evaluate new varieties for several years. Plantings from 2016, 2017, 2018, 2021 & 2022 include 3,500 second-generation MAIA trees representing 71 unique varieties.

In the spring of 2022, over 1,000 seedlings from 3 different managed crosses were bench grafted onto Bud 9 rootstock and planted in a test plot on a trellis system.

Additionally, over 1500 seeds were collected in the fall of 2021. These consisted mostly of unmanaged crosses paired with 3 patented MAIA varieties. The seeds were started in the greenhouse this spring, and a selection of them was then budded onto Bud 9 rootstock this fall. The rest are in cold storage & will be bench grafted on Bud 9 rootstock this coming spring. More seeds are also being prepared for the spring of 2023.

## Field study to evaluate Evercrisp® fruit quality as affected by rootstock, summer pruning timings, and Mylar® reflective film application timings on MAIA1 trees.

### Evaluations:

- MAIA1, 8- to 10-year-old trees
- 3 Rootstocks including Geneva 11, Geneva 41, and Bud 9.
- 2 pruning timings - August and October (pruning techniques from Bill Pitts)
- 2 Mylar® application timings -August (13 weeks prior to harvest) and October (2 weeks prior to harvest) Four (4) feet wide strips of Mylar® were placed underneath both sides of the tree rows involved in the study.
- Harvesting multiple trees at harvest in each different scenario. Fruit evaluated at a commercial packing house with an electronic eye sorter, evaluating for fruit color, size, and surface defects.





**Save The Date**  
2023 MAIA Field Day  
at Reality Research Farms | Lyons, NY

**Wednesday, August 9, 2023**  
(times and details to follow)

### Noteworthy Results:

**Rootstocks:** Data shows that Bud 9 out yields and brings great return on investment over both Geneva 11 and Geneva 41.

**Summer pruning:** Data shows that summer pruning provided the greatest impact on fruit coloring. This season, there was little difference whether pruned in August or October. Potentially, in a season with conditions not as favorable for fruit coloring, we would see greater benefit from an early season pruning.

**Mylar® reflective film:** Data shows that this was effective in improving fruit color. The August application showed greater defects regarding sunburn in the lower portion of the tree.

**Seasonal Note:** This season we experienced great coloring weather leading up to harvest. We saw some of the best-colored EverCrisp® that we have ever seen. During these conditions, we generally see more changes in converting fancy grade fruit (60-80%) into extra fancy fruit (>80%).

**Evercrisp® Fruit Coloring Trial** REALITY RESEARCH LLC | LYONS, NY | 8-10 YEAR-OLD MAIA1 TREES

TREATMENTS	# OF FRUIT PER TREE	<40% FRUIT COLOR	40%-60% FRUIT COLOR	% FANCY 60%-80% FRUIT COLOR	% EXTRA FANCY >80% FRUIT COLOR
G41	45	0	0	16	84
G41 AUG-PRUNED	50	0	1	5	94
G41 AUG-PRUNED & AUG-MYLAR®	68	0	2	7	91
B9	61	1	8	15	76
B9 OCT-PRUNED	82	0	9	7	85
B9 OCT-PRUNED & OCT-MYLAR®	72	0	1	10	90
B9 AUG-PRUNED & OCT-MYLAR®	72	1	0	5	94
G11	48	4	3	29	64
G11 OCT-PRUNED	42	2	1	18	79
G11 OCT-MYLAR®	41	1	1	16	81
G11 OCT-PRUNED & OCT-MYLAR®	44	0	0	8	92

**Evercrisp® Harvest Returns** 2022 GROWING SEASON | REALITY RESEARCH LLC | APPLE VARIETY: MAIA1 | 1117 TREES PER ACRE | \$12.5/BU 163-100 COUNTS | \$22.5 PER?BU >88 COUNTS

TREATMENTS	# OF FRUIT PER TREE	FRUIT WEIGHT (G)	% UNDER SIZE	% DEFECTS	%FRUIT <60% COLOR	%FRUIT 60%-80% COLOR	EXTRA %FRUIT >80% COLOR	% SELLABLE 163-100 COUNT	% SELLABLE 88-48 COUNT	% PACK OUT	# OF 20 BU BINS PER ACRE	PRICE PER 20 BU BIN	TOTAL DOLLARS PER ACRE
G41	45	277	0	17	0	13	70	18	65	83	30	\$423	\$12,740
G41 AUG-PRUNED	50	278	0	15	1	5	79	12	72	84	36	\$428	\$15,585
G41 AUG-PRUNED & AUG-MYLAR®	68	263	0	23	0	4	73	23	55	77	40	\$411	\$16,253
B9	61	285	0	13	7	11	68	5	75	80	45	\$408	\$18,018
B9 OCT-PRUNED	82	258	2	15	4	7	74	14	67	80	52	\$414	\$21,671
B9 OCT-PRUNED & OCT-MYLAR®	72	259	0	9	1	10	81	15	76	90	50	\$425	\$21,197
B9 AUG-PRUNED & OCT-MYLAR®	72	267	0	12	1	5	81	14	72	86	52	\$424	\$21,953
G11	48	283	0	21	0	25	55	6	73	79	33	\$440	\$14,365
G11 OCT-PRUNED	42	291	0	5	3	17	75	15	77	92	38	\$424	\$16,152
G11 OCT-MYLAR®	41	291	1	12	3	14	71	9	76	85	31	\$427	\$13,259
G11 OCT-PRUNED & OCT-MYLAR®	44	288	0	10	0	8	82	16	73	90	34	\$428	\$14,459

## GOODFRUIT GROWER

# Apple Coloring Improves On Further Reflection

Fabric improves apple coloring, grower profits in Cornell trial.

OCTOBER 2020 ISSUE

MATT MILKOVICH, TJ MULLINAX // OCTOBER 13, 2020  
RE-PRINTED WITH PERMISSION

The use of reflective fabric is long overdue in the Northeast, according to researchers with Cornell Cooperative Extension. They discovered the benefits almost by accident, in a study of hail netting's impact on fruit maturity and color.

"We've just begun to use fabric because we started testing nets," said Mario Miranda Sazo, an extension specialist with Cornell University's Lake Ontario Fruit Program. "We should have been testing fabrics by themselves years before. They improve color significantly and make a huge difference in the amount of money growers can make."

Reflective groundcover, which includes fabric products, improves red coloring by reflecting sunlight onto apples hanging from trees. The practice is more common in the Pacific Northwest and New Zealand, but growers in New York state are starting to adopt it.

Growers often use leaf pruning and plant growth regulators to color their fruit, but both methods consume money and time. Use of fabric will get you more color and a greater amount of fruit for the first and possibly second pick, especially with high-value cultivars, Miranda Sazo said.

The Lake Ontario Fruit Program conducted field trials of reflective fabric at two farms in Wayne County, New York, in 2018. Miranda Sazo studied its effects on Minneiska at Cherry Lawn Farms, while program leader Craig Kahlke and business management specialist Mark Wiltberger studied the fabric's effects on Fuji and Honeycrisp at Donald DeMarree Fruit Farm. Both trials used white



Tom and Alison DeMarree host an Extenday fabric demonstration in a Honeycrisp block at their farm in Wayne County, New York, in 2018. Cornell University's Lake Ontario Fruit Program conducted a field trial of reflective fabric at the DeMarree farm that year. The trial determined that fabric can improve red coloring in apples, thereby improving growers' bottom lines.

Photo credit: Courtesy Mario Miranda Sazo/Cornell University

reflective fabric from Extenday. Another company, Proline Products in New Zealand, offers a similar product, but the Cornell team studied Extenday because that's what the growers were already using. White film and metallic film (Mylar) are other groundcover options. But Mylar, while it can color apples, has its limitations. It can be used only for a year, wind can tear it apart, and it kills the grass underneath it, Kahlke said.

The reflective fabric trials actually started as a study of hail netting. (See related story: Net works for New York Growers.) The researchers added reflective fabrics to the study because of concerns that the hail netting might have negative effects on fruit coloring. The extension team almost immediately saw the benefits of reflective fabric, but the pros and cons of hail netting require more study, Miranda Sazo said.

When Wiltberger compiled the results of the 2018 trials, he found that about 95 percent of the apples colored by reflective fabric were classified as Extra Fancy grade (the most profitable grade), compared to between 49 percent and 74 percent of the naturally colored apples.

Assuming an initial investment of \$2,000, the study estimated Extenday's annual costs (including labor) at \$508 per acre over the lifetime of the fabric, which is seven years. But even a 5 percent

increase in Extra Fancy grade apples can increase revenue by \$500 per acre, nearly making up the annual cost. And, depending on the block, increases ranged from 10 percent to 40 percent at the two farms, Wiltberger said.

## Trial Details

Most growers place strips of reflective fabric between rows. In the 2018 trial, Miranda Sazo decided to also cut strips in half and lay each half in the herbicide strips on each side of the row. He wanted to find out if he could use less material more strategically.

In 2018, a poor fruit-coloring season in the Lake Ontario fruit region, only reflective fabric placed between rows showed better results than the control trees. In 2019, however, which had almost ideal weather conditions for fruit coloring, results from both the between-row and in-row methods improved coloring. This showed that fabrics can boost red color even under New York's most ideal natural coloring conditions, Miranda Sazo said.

Donald DeMarree Fruit Farm bought enough Extenday to cover 5 acres in 2018 and to cover an additional 20 acres in 2019. They move the fabric around at least three times per harvest season, which effectively covered more than 75 acres in 2019. The fabric has definitely improved their fruit color, said Alison DeMarree, who owns the farm with her husband, Tom.

The DeMarrees decided to try reflective fabric on their farm after seeing how well it worked during an International Fruit Tree Association tour of New Zealand in 2018.

"We figured if it works in New Zealand, it should work here, where we have less sunlight," she said. That first year, they noticed improved color all season — on varieties picked in late August to varieties picked in early November. The difference was "pretty dramatic," DeMarree said, and the apples were noticeably redder, despite 2018 being a poor coloring year.

The Cornell team couldn't get funding for a 2019 trial at the DeMarree farm, so the DeMarrees conducted their own on-farm trial that year.

"Everyone knew we were using reflective fabric, because our fruit was so much redder," DeMarree



Alison DeMarree talks about her experience using Extenday during the Lake Ontario Fruit Program summer tour in July 2019. It definitely improves color, but moving it from block to block adds to her labor costs, she said.

Photo credit: TJ Mullinax/Good Fruit Grower

said. "It made a huge difference in bicolor varieties, especially late in the season when our day lengths start getting pretty short."

She said the packers they deal with are now asking other growers to use reflective fabrics.

The DeMarrees lay the fabric between rows two or three weeks before a variety is ready to be harvested, then a couple of days before that harvest they move it to the next variety. There's a cost to all that moving, however. The fabric has to be unfastened and rolled up, moved, then rolled out and fastened in another row. All that work requires extra labor.

"We had to bring more people in," she said. "We haven't calculated the cost, but our labor bill is definitely up."

They also built a barn to store the fabric over winter — an additional cost to consider for Eastern growers.

"In New Zealand, they leave it out at the end of the orchard, but if we did that it would be full of mice chewing holes in it," she said.

Growers have to be well organized to deploy reflective fabric the same way from year to year, with a special crew of workers who know how to move the fabric multiple times per season, Miranda Sazo said.

# MAIA Is Here To Meet Your Marketing Needs

## Direct Marketing

MAIA has promotional materials available for farm markets. We welcome you to utilize the banners, variety cards, row signs and hand-out cards to support your direct sales!



## Wholesale Marketing

For your convenience and point-of-sale success, we have commercial packing and print marketing assets available, including all sizes of bags, boxes and graphics.

We have updated our informational brochure for Nurseries which highlights MAIA-patented varieties. Request your bulk order today!



## PLU Stickers

PLU Stickers are available for several of the MAIA varieties, including Evercrisp® and Ludacrisp®. These can be used for wholesale packing and distribution or if you prefer to use PLUs in your own market.



We are happy to help with all these direct marketing and wholesale promotional items and can ship them to your business.

For all your questions and marketing needs, please email [Evercrisp@mekanic.com](mailto:Evercrisp@mekanic.com)

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