

MAIA NEWS

Summer Newsletter 2020



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MAIA-SM Observations from Test Orchards:

- Impressive flavor and texture compared to standard early-season apples
- Holds well in storage compared to standard early-season apples
- Non-dropping fruit with long harvest window
- Partial scab resistance from parent Honeycrisp
- Fruit size and skin color are similar to parent Winecrisp®, but MAIA-SM skin is typically brighter red with less prominent lenticels

Fruit Size:
Medium

Color:
Fully red

Flavor:
Fully sweet

Crispness:
Very crisp

Announcing a New Release! MAIA-SM

Patent applied for in 2020. Trademark pending.



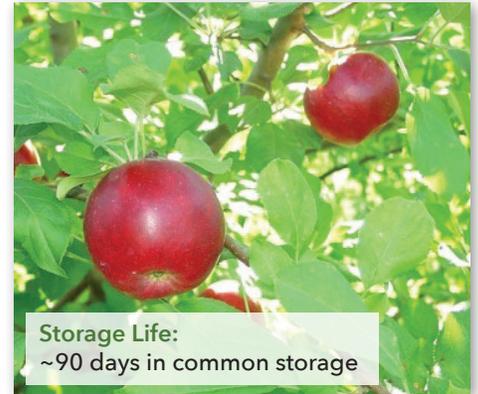
Harvest Date:
Early, 1-2 weeks before Gala



Origin:
Honeycrisp x Winecrisp®



Tree Vigor:
Moderate



Storage Life:
~90 days in common storage

Results from consumer taste test (155 participants):

This was a blind taste test. Customers were instructed to taste all selections and vote for their favorite. Taste test was conducted from 12:00 - 2:00 p.m. on 7 September, 2019 at Lynd Fruit Farm in Pataskala, Ohio.

Sampling Order	Variety/Selection	Number of Votes	Percentage
1	Gala (from grocery store) <i>Note: Most beautiful apple on the table, least votes</i>	20	13%
2	MAIA-SM (White House Fruit Farm, harvested 8/17/19) <i>Note: Lots of positive commentary on flavor</i>	56	36%
3	Gala (Lynd Fruit Farm, harvested 9/5/19) <i>Note: Many people torn between this and MAIA-SM, but most chose MAIA-SM</i>	34	22%
4	Honeycrisp (from grocery store) <i>Note: Lots of kids voted for this one, probably because of texture</i>	45	29%

Data Collection for Test Varieties



Another year, another chance to gather data on test varieties! How best to go about it? Let me share the methods I have been using, as they may be useful to you as well:

Start by finding the map you made when you planted the trees.....You DID make a map, didn't you? If you didn't, hopefully the permanent tags you put on the trees are still legible and in place.....You DID make tags, didn't you? If not, maybe the nursery tags are still legible.

Next, create a spreadsheet listing all the numbered varieties in your test block, listed in a convenient order for walking the rows. I use this to print out blank data sheets when I need to gather any kind of data.



Test apple (top) and test apple trees (bottom) color-coded by harvest time. Photo credit: Brad Phillips

You can also use Excel to make a simple map chart of the block instead of a paper one. I got geeky and color-coded the names according to ripening date. More on that below. Now, what kind of data can we be collecting? I have been determining relative bloom date compared to standard varieties. This can vary by year, and trees in their first fruiting year do not reflect actual timing, so several years may be needed to get good results. Any incidence of disease should be noted; some of our varieties have disease resistance, but we're not really sure how much.

Ripening dates are key data. This is also more reliable on older trees. It can vary considerably year to year, but the important facts are relative ripening with other varieties. Dates vary so much from place to place, i.e., central Michigan vs. southern Illinois, that calendar dates are only useful in local situations.

I found that bi-weekly sampling is helpful, especially in the early years when you don't know when test varieties are supposed to ripen! And then there is ripe enough for storage vs tree ripe for u-pick, so multiple samples can be useful. Many of our new varieties are ethylene insensitive and will store on the tree quite a while with little change in quality; others will hang but go off-flavor while looking great, so keep tasting! Notes on appearance are very useful, as many of these varieties vary in coloring greatly by region. Notes on texture and flavor are also valuable; this is what keeps the customer coming back!

After I determine the rough ripening season I tie color-coded ribbons to the tree stakes. I based the code on the rainbow so I can remember the sequence. ROY G BIV is the acronym. Indigo and violet don't work because purple ribbon turns blue in the sun, so I used black for very late varieties. I used white for very early ones. Each color represents about a 10 day window or 1/3 of a month. These ribbons really help in the regular sampling/harvest.

Once you harvest, you need to figure out some way of keeping track of the apples in storage so you can sample them periodically. In truth, this is somewhat of a pain. I ended up stapling a labeled paper loop around the top crate slat and stacking all the test varieties together. Great until you want to sample the bottom crate! You can also use the spreadsheet for storage data, as in, how long do these varieties keep? Monthly taste-testing will track the useful storage life pretty well.

I have also attempted to characterize the tree form, vigor, precocity, biennial nature, any other horticultural characteristics. This can be an annual walk-through. Consider soil type variations as well.

Finally, sharing the data. As we are a co-op, we all benefit from sharing what we learn on our own farms with the rest of the members. Please send me any data you have collected or will collect to lsphillips50@frontier.com. Thanks!

Brad Phillips
MAIA Science Chair
AB Phillips & Sons

Report from Reality Research: MAIA-SM (New Release)

In 2019 Reality Research, LLC determined the optimum harvest and storage parameters for MAIA-SM and conducted storage trials for MAIA1 (EverCrisp®). Below are summaries of the trials and the most noteworthy results from Reality Researcher Brad Palmer:

Trial Purpose:

To find the best timing of harvest for MAIA-SM and learn what the harvest maturity standards are for Pressure and Brix. Also testing a single "Retain" application & harvest on 3 different timings and 2 different storage conditions.

Evaluations:

- 4-5 Replications per treatment.
- 3 Different pick dates with 7-day intervals.
- Harvest maturity measured at each harvest date.
- Fruit evaluated after storage for multiple possible defects.

Noteworthy Results:

1. MAIA-SM can be held much longer than 1 month in storage. We held them in common storage for 90 days & around 180 in CA storage.
2. Our first pick timing was probably our strongest fruit going through storage, harvested on August 30th.
3. Mature fruit without Retain or 1MCP had the best quality coming out of common storage.
4. The addition of Retain did help when fruit was placed into CA storage.

Experimental Design:

Four different harvest timings:



Four different growth regulation treatments:

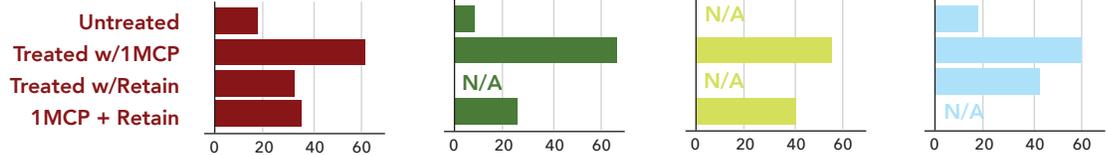


Two different storage conditions:

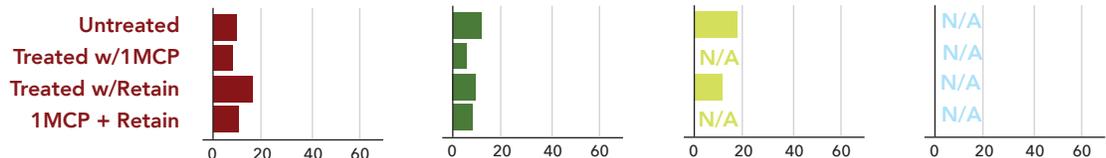


% Fruit Lost in Storage

Common Storage



Controlled Atmosphere Storage



Note: Some experimental combinations were not tested, indicated by "N/A".

MAIA-SM Fruit Quality (Common Storage)

Average values are shown

Brix



Pressure (lb.)



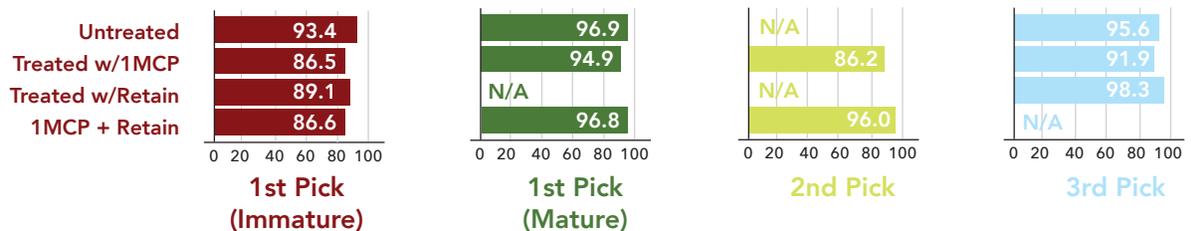
Starch 0-8



Fruit Size (inches)



Fruit Color (0-100%)



Report from Reality Research: MAIA1 (EverCrisp®)

Trial Purpose:

Evaluate the fruit quality between rootstocks & storage conditions.

Evaluations:

- 3 different storage conditions and 4 different rootstocks.
- 6 Replications per treatment.
- Fruit evaluated after storage for multiple possible defects including "Rots, Water Core, Internal Browning, CO2 Injury, Bitter Pit, Rots, Pressure & Brix, etc."

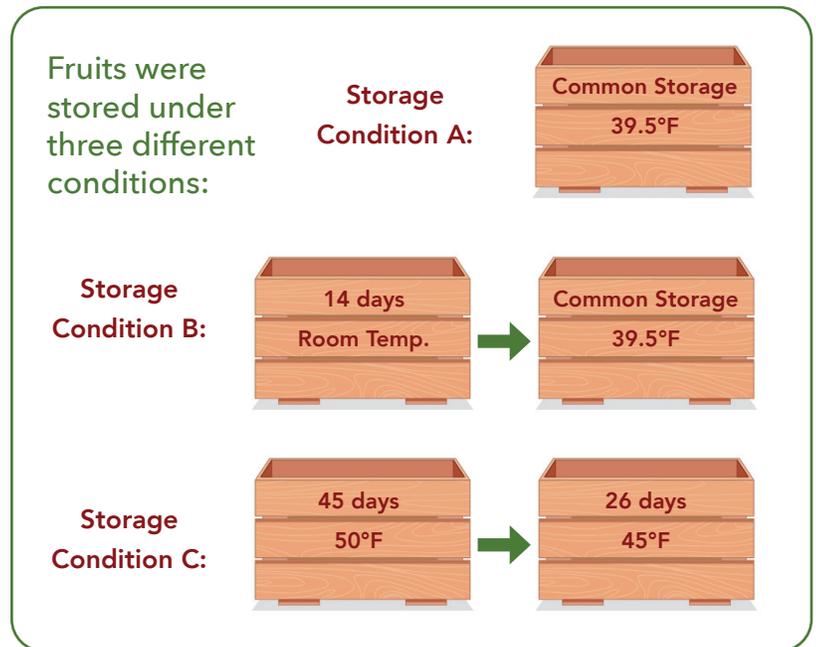
In each storage condition we placed from:

Wafler Farms site-1 / Bud 9 rootstock
Wafler Farms site-2 / Bud 9 rootstock
Cherry Lawn Farms / Bud 9 rootstock
Springbrook Orchards / Bud 9 rootstock
Springbrook Orchards / G 11 rootstock
Springbrook Orchards / G 41 rootstock
Springbrook Orchards / G935 rootstock

Noteworthy Results:

Rootstocks: The data shows that bud 9 & Geneva 935's were the most solid going through storage. G41 definitely brought on more bitter pit as well as G11.

Storage Conditions: The best fruit seemed to come from storage condition B, where we conditioned the fruit for 14 days & then placed the fruit into 39.5 degrees common storage.



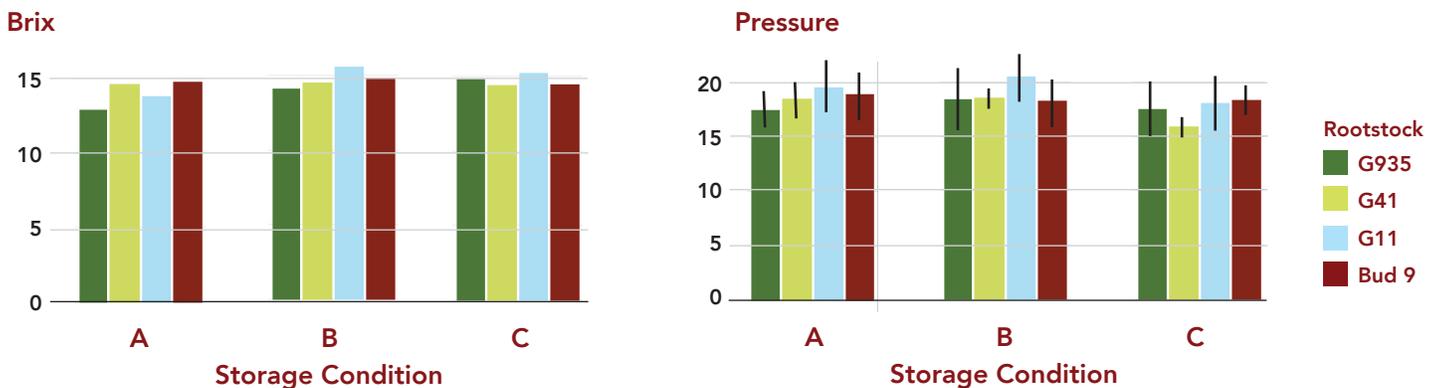
Observed Defects: % of apples affected

	Storage Condition		
	A	B	C
Bitter Pit	9%	4%	7%
Lenticel Breakdown	2%	1%	0.5%
Soft Scald	0.2%	0.2%	1%
Moldy Core	3%	2%	1%

Note: <1% of apples had other defects (rot, water core, or internal browning).

The influence of rootstock and storage condition on fruit quality:

Black lines on the Pressure bars show the "standard error" (a measure of the confidence of the data).



MAIA1 and EverCrisp® Apples: The Good and The Challenges

MAIA1 is a regular consistent bearer. The fruit is well received by consumers. The storability and counter life is second to none.

The challenges: two main ones, season and appearance.

MAIA1 is a late season apple. The 2019 season was cold the last two weeks in October and a freeze in early November meant maturity, particularly of the 'second pick' came up against a hard stop. The second pick generally didn't mature.

The marketplace has several new apples, most of which are very attractive. EverCrisp® apples can be acceptably attractive and need to have best management practices to achieve their potential.

What practices can the grower adopt to maximize the potential of variety? The attached picture speaks a thousand words. Tip bearing and limber limbs will result in layers of apples, the outside of which are marginally colored and the underneath which has no chance of meeting standard (60% color). Shorten limbs to stiffen and don't allow this situation to occur. In 2019 it was commonly observed that the top half of tall spindle plantings had good color and mature fruit while the bottom half struggled.



MAIA1 tested on various rootstocks.

Reflective fabric was used to good effect where pruning allowed the apples in the lower half of the tree good light exposure.

Crop load management is key to maturity, color, and quality. Lighter crop loads will color and mature while heavily loaded trees will struggle. There are more questions than answers when it comes to thinning. The current recommendation is no chemical thinning, using pruning and hand thinning to tune the crop.

Genetic work is being carried out in 2020 to answer questions about compatible pollinizers.

Wafler Nursery reports budding MAIA1 on B9, G41, and a few on G11, with "quite a few" propagated on G935 for "more push" because of poorer ground and the variety being a relatively weak grower. Bill Pitts is concerned about the more vigorous stocks creating the 'drooping branch' condition shown in the picture.

MAIA1 as a variety is not particularly difficult to grow but it does have some specific demands/conditions that must be met to achieve its outstanding potential.

David Doud

MAIA Chairman of the Board
Countyline Orchard



MAIA1 with drooping limbs and shaded fruit. Photo credit, Marcus Bradwater.

Marketing the 2019 EverCrisp® Crop

In late July and early August there was information available that Honeycrisp pricing was going to begin much lower than past years. Honeycrisp harvest and shipping began and prices were indeed much lower. What does this have to do with EverCrisp®? For years Honeycrisp has been at the top of the market. Growers, buyers and consumers all expect to pay or receive more money for Honeycrisp. The EverCrisp® Marketing group agreed that target prices for EverCrisp® needed to be lower for 2019. All agreed that getting out at retail at \$1.99 per pound was the goal. That translates to the upper 30's or low 40's. It did not seem realistic to be pricing a relatively unknown apple at or above Honeycrisp.

Many marketers wait to begin EverCrisp® sales until after the first of the year. Most are harvested in very late October or early November which is not a good time to be trying to get retail space. Most retailers are scaling back apple displays and getting ready for Thanksgiving.

MAIA works with marketers to help with setting ads, POP materials and store sampling. MAIA had pledged \$50,000

to help promote EverCrisp® and several large retailers scheduled promotions for the middle of March using fruit from NY, MI and PA. Unfortunately, we all know what's next...

COVID-19 lockdowns began in mid-March and consumer spending habits changed drastically (hoarding). Retailers could not do in store demos and concentrated on supplying their highest volume produce items. Apple sales in bags went crazy. ALL new or managed varieties suffered as retailers concentrated on the standard varieties. This decision was based in some degree on logistics. Keeping store shelves stocked with basics (and toilet paper) was the priority.

There has been some success moving EverCrisp® to accounts that used them in past years, but new accounts are still difficult to come by.

MAIA is excited to help market and support this tremendous apple. Our enthusiasm and excitement to assist our 876 members in the future is unwavering.



Bill Dodd
MAIA President
Hillcrest Orchards

Left: EverCrisp® apples for sale at White House Fruit Farm.



A "Scary" Fall Promotion for EverCrisp®

MAIA is preparing an on-farm fall promotion for EverCrisp® growers that's so good it's "scary."

This October, as EverCrisp® reaches peak harvest at member orchards nationwide, and as families get excited for the Halloween season, MAIA members will be invited to take part in the "EverCrisp®: So Crunchy It's Scary" promotion at their farm stands and U-picks.

In the weeks leading up to EverCrisp® season, MAIA will ship to its members a promotion kit featuring signs, handouts, digital files and other supporting materials to promote their EverCrisp® apples through October.

The core of the kit will be a variety of signs and tools for each participating farm to conduct a special "EverCrisp®: So Crunchy It's Scary" photo contest.

Farm visitors will be encouraged to snap a photo biting into a free EverCrisp®, pretending to be shocked and frightened by the loud crunch. Those who share on Instagram with the hashtag #EverCrispHalloween enter for a chance to win a variety of cash and other prizes from MAIA on behalf of EverCrisp® and member farms. The kit will also include additional materials for farms to promote EverCrisp® -- including a "Loudest EverCrisp® Crunch" contest. The kits will include additional signs promoting EverCrisp®'s unique "sweetness," "juiciness" and "deliciousness," as well as a special website link for members to access with downloadable materials that will include:

- Additional design files members can edit and print on their own
- Template press release they can send to local media
- Graphics they can edit and post on their social media pages

With the pandemic shuttering state fairs, sports venues, concerts and other gatherings this fall, we expect orchards nationwide to be bustling with safe, socially-distanced activities. This campaign spotlighting EverCrisp®'s unique qualities - including its loud crunch, sweet taste and extreme juiciness is sure to create buzz on the farms and in social media.

Members who would like to participate in this fall promotion should email Eric Davis at eric@flmharvest.com to sign up for materials. The deadline to register is August 21.

MAIA New Website

MAIA's new website is up and available! Find it at:

www.maiaapples.com

Forms like the "grafting and top working request" can be printed and either snail mailed or emailed to the MAIA office.

Reminder: Grafting royalties of \$1.00 per tree are due August 1 for all 2020 top working to MAIA varieties.

There will be more information delivered to you about MAIA varieties in the near future. Several research projects are underway to help understand the best root stocks, storage protocols, pruning and other details to help MAIA members succeed. A new member management software package has been purchased and installed.

Most MAIA information will be arriving via email.

Please make sure you have an email address on file with us and that all of your information is correct and up to date including orchard name, contact person, email address, farm billing address and phone number. Please email updates to Chip Wigton (wlwiv@oberlin.net) or snail mail to MAIA (PO Box 88, Oberlin, OH 44074). You can mail the detachable form enclosed in this newsletter with your updated information.

Eric Davis
MAIA Member
FLM Harvest

What do I do with my Apple Seeds?

Handling Seeds from Controlled Crosses

The MAIA apple breeding program is based on making controlled crosses between cultivars of interest, growing apple seedlings, and selecting the best material for commercial release or for the next generation of crosses. Our Science Committee discusses crosses of interest, and growers and researchers collect pollen and hand-pollinate mother trees in the spring. If you are interested in making controlled crosses, please contact Science Chair, Brad Phillips, for information on how to be involved in the process. (Email: lsphillips50@frontier.com)

Once you've made the crosses, then what? We at Empire Chestnut Company (ECC) have been starting apple seedlings for the MAIA, alongside our chestnut nursery business, since the first controlled crosses were made in 1999. There are a lot of ways to collect and store apple seed, but here are our recommendations:

When do I harvest seed apples?

Harvest seed apples at their peak, but if you miss the window for commercial fruit sales/storage, don't worry! Apples can be picked a week early to several weeks late and still contain viable seeds.

Do I store the fruit or remove seeds from the fruit immediately?

Removing seeds from the fruit can be a tedious and time-consuming task. If you can get fruit to us at ECC by January after harvest, we'll take care of it. If you need to ship the seeds, or if you simply don't want seed apples taking up storage space, remove and store the seeds as soon as possible after harvest, following these guidelines:

- Slice the apple around the "equator," being careful not to cut into the core and cut open the seeds. Twist the apple apart and either dump seeds out or pick them out with a dull knife or nut pick.
- Once you have removed all the seeds from the apples, gently wash/scrub the seeds to remove any residual fruit tissue. Optional: Soak the seeds in a very weak (5%) bleach solution to help remove stubborn fruit tissue and to eliminate potential pathogens from the seed coats.
- Dry the seeds: Lay the seeds out in a single layer on a paper towel or thin cloth towel in a dry area such as a countertop. Let them dry overnight, but not longer than 24 hours.
- Once the seeds are dry, place them in a well-labeled bag in a refrigerator until you are able to ship them. A plastic sandwich bag is the ideal stor-



Apple seeds sprouting after being stored in a damp cloth. Ship seeds before this happens!
Photo credit: Amy Miller

age container IF you poke a few pinholes. Seeds need air and should not be stored in fully sealed containers. (NOTE: Seeds are sensitive to freezing. Keep in fridge but not in freezer.)

When do I ship the seeds?

Send all seed to ECC before February after harvest. We plant seeds and start them in greenhouses in February or March. The MAIA winter meetings can be good hand-off points for apple seeds.

Amy & Greg Miller
Empire Chestnut Company

Key to MAIA Releases

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	Sweet 16, open pollinated	PP30472
Sweet Zinger®	MAIA-Z	MJE 1238	Goldrush x Sweet 16	PP30059
Trademark Pending	MAIA-SM	MDD 7-50	Honeycrisp x Winecrisp	Patent Pending

Order EverCrisp® Signs and T-shirts!

MAIA members are entitled to 5 free EverCrisp® signs and 1 free EverCrisp® t-shirt during this special promotion. Please complete this form before **August 21, 2020**.

Member Information

Check this box if there are new changes to your company name or contact information

Name: _____ Company: _____

Your new MAIA membership number (as shown on your mailing label): _____

Phone: _____ Email: _____

Full mailing address*: _____

*note that we cannot ship merchandise to PO boxes

EverCrisp® signs (7" wide x 10" tall)



EverCrisp® T-shirts (children's and adult sizes)



T-shirt size	Qty
Children's XS	
Children's SM	
Children's M	
Children's LG	
Children's XL	
Adult SM	
Adult M	
Adult LG	
Adult XL	
Adult 2XL	
Adult 3XL	
Total Qty	

If payment is not required, this form can be returned by email to Chip Wigton (wlwiv@oberlin.net).

You may also mail this order form and payment to:
Midwest Apple Improvement Association
P.O. Box 88, Oberlin, OH 44074

Make checks payable to:
Midwest Apple Improvement Association

Product	Unit Price	Qty	Total
Free signs	\$0.00	5	\$ 0.00
Additional signs	\$5.00		\$
Free t-shirt	\$0.00	1	\$ 0.00
Additional t-shirts	\$12.00		\$
Total Due			\$

