

APPLES TO APPLES

A comparison of apple varieties for fresh eating and culinary uses



CAVILLE BLANC



LOU LEGO
ELDERBERRY POND FARM



Agenda:

About Elderberry Pond

Purpose of This Project

How the apples were evaluated

Evaluation Results

Early, Mid-Season, Late Apples

The Perfect Small Farm Apple Orchard

PRISTINE

Elderberry Pond Country Foods



Our Farm



100 Acres, 30 in fruits & Vegetables

Very Diversified Plantings

Certified Organic - Split Operation

Our Markets

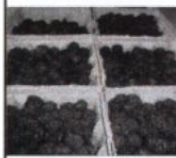


On-Farm Retail Store

Farmer's Markets

Fine Dining Restaurant

Our Market and Farm Practices require diversity



THE RESTAURANT AT ELDERBERRY POND



FROM FIELD TO TABLE



Purpose of the "Apple to Apple" Project

Help market customers and restaurant chefs with selection of apple varieties for various uses.

Help farms starting new orchards to select best varieties for season long sustainable production

Encourage new large commercial plantings of high quality disease resistant varieties through:

increasing market demand
making information of varieties available

Evaluation Methods

Selected 42 varieties ripening from 1 August to 10 November

Measured General Characteristics of each immediately after picking, and with some 6-8 weeks after picking.

Size, Brix, Firmness, Acidity

Also ranked General appearance & tree maintenance ease
Evaluated and ranked using seasonal tastings

Baked- Prepared Pies with 34 varieties compared qualities using tasting panel apples per pie, peeling ease, slice firmness, taste

Dried 37 - evaluated 37 varieties for color, texture and taste

Fresh Slice- evaluated 37 varieties for color and taste when held in air for up to 1 hour

Juiced- Made fresh juice from all varieties and evaluated quantity, color and taste

GENERAL CHARACTERISTICS OF APPLES SELECTED

DISEASE RESISTANT VARIETIES

	GENERAL CHARACTERISTICS							TREE NOTES
	DATE PICKED	SIZE DIA	COLOR	TEXTURE	FIRM	BRIX	ACIDITY PH	
LODI	4-Aug	3	YEL	SOFT	8.5	12.8	2.6	FAST GROWTH - MESSY SOMETIMES BIENNIAL
RED ASTRACHAN	6-Aug	2	RED	FIRM	9.5	15	2.7	FAST GROWTH NICE FORM
DUCHESS	3-Aug	2.5	RED	SOFT	8.5	11	2.9	RELIABLE BEARER- NICE FORM
PRISTINE	10-Aug	3	YEL-RED	CRISP	8	11	3.0	MODERATE GROWTH RELIABLE NICE TREE- DR
WILLIAM'S PRIDE	20-Aug	3.4	RED	FIRM	5	12.5	3.0	NICE TREE GROWTH - RELIABLE FRUITING- DR
AKANE	26-Aug	2.5	RED	FIRM	10	11	3.1	NICE TREE- RELIABLE
GINGER GOLD	26-Aug	3.4	GOLD	CRISP	9	13	3	NICE TREE - RELIABLE-OGAS SUSCEPTABLE
WOLF RIVER	26-Aug	4.2	RED	SOFT	9	8.5	2.9	DROOPY TREE- HARD TO MANAGE
SANSA	23-Aug	3.5	RED	CRISP	6.5	13.8	2.9	NICE STURDY TREE - EDC DR
RED FREE	26-Aug	2.8	RED	HARD	13	11	3.1	NICE TREE VERY RELIABLE DISEASE RESISTANT
EMPRESS	25-Aug	2.4	RED	SOFT	5	12.5	3.2	VERY SHORT PICKING TIME
SLAMMER TREAT	24-Aug	3.0	RED	FIRM	8	10.5	3.1	BEAUTIFUL TREE- RELIABLE- BUT HARD TO FIND
MACOUN	23-Sep	4	RED	FIRM	21	10.5	3	GOOD TREE AND RELIABLE FRUITING
GOLDEN SUPREME	25-Sep	4	GOLD	FIRM	21	13.7	2.7	GOOD TREE BUT INCONSISTENT FRUIT
GALA	25-Sep	3	RED	FIRM	24	13	3.1	VERY RELIABLE GREAT TREESUPREME DR
30 OZ PIPPIN	24-Sep	4.5	RD-ORN	FIRM	22	12.2	2.6	A BIT DROOPY- BUT RELIABLE FRUIT
PINK PEARL	25-Sep	4	YEL	FIRM	19	9.8	2.6	CRAZY TREE- BEAUTIFUL FRUIT- RED-FLUSH
HONEYCRISP	25-Sep	4.5	RD-ORN	CRISP				GOOD TREE- BUT DIFFICULT FRUITING
FOUND SWEET	26-Sep	5	GREEN	SOFT	15	11.8	4	GOOD TREE EASY TO MANAGE
LIBERTY	26-Sep	3	RED	CRISP	23	11.5	3	GOOD TREE RELIABLE BEARING DISEASE RESISTANT
FREEDOM	27-Sep	4	RED	FIRM	16	12.0	3.1	GOOD TREE RELIABLE BEARING- DISEASE RESISTANT

GENERAL CHARACTERISTICS OF APPLES SELECTED (CON'T)

DISEASE RESISTANT VARIETIES

	GENERAL CHARACTERISTICS							TREE NOTES
	DATE PICKED	SIZE DIA	COLOR	TEXTURE	FIRM	BRIX	ACIDITY PH	
SMOKEHOUSE	1-Oct	3	RED	FIRM	21	14	3.1	DIFFICULT TO MANAGE - VERY DENSE GROWTH
MELROSE	2-Oct	4	RED	FIRM	19	11.3	3	EASY TO MANAGE- RELIABLE
FORTUNE	4-Oct	5	RED	FIRM	24	11.2	3	BRITTLE TREE AND LARGE FRUIT- SOME DR
JONAFREE		3	RED	FIRM	18	11	3	GREAT TREE- RELIABLE- DISEASE RESISTANT
EMPIRE	9-Oct	3	RED	FIRM	21	10.3	3	GREAT TREE- RELIABLE
NORTHERN SPY	9-Oct	5	RD-ORN	FIRM	25	14.9	2.7	GOOD TREE A BIT DROOPY- 6 YRS FOR FRUIT
CORTLAND	9-Oct	4.8	RD-ORN	FIRM	22	12	3.2	GOOD TREE- NO OVERBEAR
ESOPUS SPITZENBERG	9-Oct	4	RED	FIRM	22	12	2.8	GREAT TREE- A BIT RELIABLE
GOLDEN DELICIOUS	15-Oct	4.8	GOLD	FIRM	11	14	3.3	GOOD TREE - A BIT BRITTLE
MINTOSH	12-Oct	4	RED	FIRM	20	14	3.2	GOOD TREE- VERY DISEASE SUSCEPTABLE
CAVILLE BLANC	26-Oct	5	YEL-ORN	FIRM	14	13	2.8	OK TREE- A BIT SPORADIC AND SHALLOW ROOTS
GOLDRUSH	30-Oct	4	GOLD	HARD	23	11	2.8	GOOD TREE- NEEDS THINNING
STAMEN WINECAP	3-Nov	4	RED	FIRM	18	15	3.1	GOOD TREE RELIABLE FRUIT
ASHMEADS	3-Nov	3-4"	TAN-RED	HARD	21	16	2.7	GOOD TREE RELIABLE FRUIT- DISEASE RES
SUNCRISP	3-Nov	3"	YEL-RED	FIRM	15	11.5	3	A BIT BRITTLE- AND SOMETIMES BIENNIAL
ENTERPRISE	13-Nov	4-5"	RED	FIRM	18	12	3.2	BEAUTIFUL TREE VERY RELIABLE- BUG AND DISEASE RES
SMITSU (CRISP)	12-Nov	5"	GREEN	FIRM	10	12	3.9	GOOD TREE- SOMETIMES BIENNIAL
SEEK NO FURTHER	12-Nov	4"	TAN-RED	FIRM	11	13.5	3.1	GOOD TREE- SOME BUG AND DISEASE RESISTANCE
GRANNY SMITH	15-Nov	3-4"	GREEN	FIRM	13.5	11.5	2.8	GOOD TREE- BUT SOMETIMES BEARS TOO LATE
FLUJ	15-Nov	3-4"	RED	FIRM	15	12	3	RELIABLE- SCAR RES- BRITTLE AND NEEDS THINNING
CAMEO	15-Nov	3-4"	RD-ORN	FIRM	16	12	3	RELIABLE- GET ORIGINAL GREEN VERSION POOR DR
GOLDEN RUSSETT	15-Nov	3-3"	TAN-RED	HARD	13	15	3.2	GREAT TREE VERY RELIABLE- THINNEABLE

APPLES NOT EVALUATED

Some of our best apples did not bear fruit in 2007

Examples: York, Bramley's, Cox's Orange, Pricilla, Gravenstein Jonagold, Mother, Jeffries, Grimes Golden Rome Beauty, Braeburn, Criterion, Baldwin, Zestar

Some apples that did bear fruit were purposely omitted for quality reasons with the fruit or the trees

Examples: Burgundy, Red Delicious, Winter Banana, Fameuse

Some apples with good reputation we do not grow, and could not find:

Examples: Pink Lady, Reinette, King David

APPLES FOR EATING OUT OF HAND

Held 4 Tastings During The Season with about 10 apples of that season

Tasters were volunteer store customers or visitors for NOFA "Organic Abundance" Fund Raiser

Tasters filled out cards ranking the apples they tasted

Apples were sorted sweet and tart and cooking



Results of Apple Tastings

	AUGUST 25TH	SEPT 15TH	OCTOBER 15TH	NOV 3RD	NOV 15TH
1	PRISTINE	PRISTINE	GALA	GOLDEN DELICIOUS	HONEY CRISP
2	SANSA	SUMMER TREAT	PINK PEARL	SUNCRISP	ENTERPRISE
3	AKANE	GALA	LIBERTY	HONEYCRISP	CAMEO
4	GINGER GOLD	PINK PEARL	EMPIRE	LIBERTY	FUJI
5	WILLIAM'S PRIDE	RED FREE	JONAFREE	EMPIRE	GOLDRUSH
6	RED ASTRACHAN	MACOUN	FREEDOM	MCINTOSH	WINESAP
7	DUCHESS	EMPRESS	HONEYCRISP	MELROSE	LIBERTY
8	LODI	GINGER GOLD	MELROSE	WINTER BANANA	EMPIRE
9		AKANE	FREEDOM		
10		GOLDEN SUPREME	POUND SWEET		

SOME INTERESTING OBSERVATIONS

SWEETEST TASTING APPLES MAY HAVE LOW SOLUABLE SUGARS

Example:	Brix	ph	Taste
Pound Sweet	11.8	4	Very Sweet
Granny Smith	11.5	2.9	Tart

TASTE OF AN APPLE EATEN OUT OF HAND IS VERY DIFFERENT THAN TASTING ITS FRESHLY SQUEEZED JUICE, AND CIDER FROM THAT SAME APPLE IS A WHOLE NOTHER STORY!

BEST EXANPLE: GALA



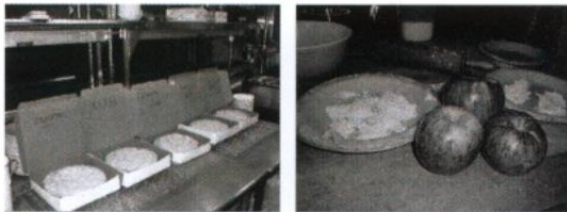
APPLES FOR BAKING

Our Restaurant Pastry Chef Baked 34 Pies 3- 5 at a time throughout the season

Our Restaurant Chefs, Staff and Owners were the judging panel

Same recipe and baking procedures for all pies

Criteria were Slice Firmness, overall fill consistency, taste



APPLE PIE RATINGS



RATINGS	Early Season August- Mid Sept	Mid Season Mid Sept to Early Oct.	Late Season Mid Oct. to Late Nov
APPLES RECEIVING "BEST IN GROUP" RATING	DUCHESS	SMOKEHOUSE PINK PEARL 20 Oz PIPPIN WOLF RIVER	NORTHERN SPY GOLDEN DELICIOUS MUTSU (CRISPIN) GRANNY SMITH SPITZENBERG
APPLES RECEIVING "GOOD TO VERY GOOD" RATING	RED ASTRACHAN	GINGER GOLD PRISTINE AKANE LIBERTY	CORTLAND CAVILLE BLANC ENTERPRISE SEEK NO FURTHER MCINTOSH GOLDRUSH
APPLES RECEIVING "LEAST GOOD" RATING	LODI	WILLIAMS PRIDE POUND SWEET	ASHMEAD'S KERNEL

SOME INTERESTING OBSERVATIONS

Driest apples seemed to make the best pies

Apples with the best baked flavor tended to be the most acidic

Most serious pie bakers mixed the apple varieties which makes sense)

Late Season Apples make the best pies

APPLES FOR JUICE

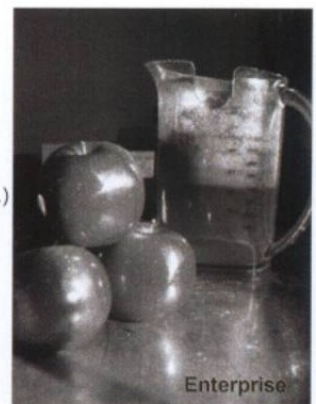
Used Breville 800 Juicer

Juiced 3# of each Apple

Measured juice quantity (oz.)
Brix and acidity (pH)

Tasted Immediately and
three days later.

Noted Color



JUICE APPLE RANKINGS

	APPLE VARIETY	YIELD oz. / 3#	TASTE	COLOR	BRIX	pH
1	SPITZENBERG	21	BEST	BRILLIANT RED	12	2.8
2	NORTHERN SPY	18	EXC	YELLOW/GREEN	14.9	2.7
3	ENTERPRISE	30	EXC	BRIGHT RED	12	3.2
4	GOLDEN RUSSET	17	EXC	GREEN	15	3.2
5	TWENTY OUNCE	20	EXC	TAN	12.2	2.8
6	WINESAP	23	EXC	RED	15	3.1
7	PINK PEARL	21	EXC	PINK/TAN	9.8	2.6
7B	GOLDRUSH	27	EXC	GREEN	11	2.9

SOME INTERESTING OBSERVATIONS:

● THE TASTE OF AN APPLE IS NO INDICATOR OF THE TASTE OF ITS JUICE

Ex. GALA, GOLDEN DELICIOUS

● FROM THE SAME APPLE - CIDER AND JUICE TASTE COMPLETELY DIFFERENT BUT:

GOOD JUICE APPLES SEEM TO BE GOOD CIDER APPLES

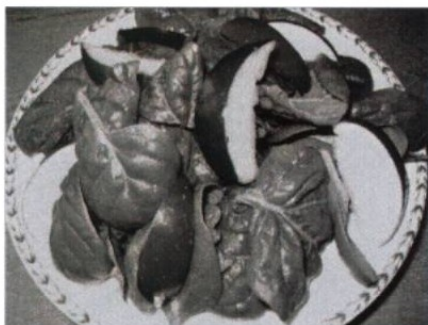
SPITZENBERG, GOLDEN RUSSET, WINESAP ETC

● AGAIN NO CORRELATION BETWEEN SWEETNESS AND BRIX



FRESH SLICE APPLES

Taste, skin color, flesh color stability and texture are important qualities



ENTERPRISE APPLES WITH SPINACH

BEST APPLES FOR FRESH SLICE

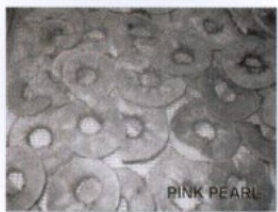
FRESH SLICE APPLE RANKINGS

RANK	APPLE	SKIN COLOR	FLESH COLOR			CRISPNESS	NOTES
			INITIAL	20 MIN	1 HR		
1	ENTERPRISE	DK RED	WHITE	WHITE	LT TAN	EXC	GREAT SWEET-TART
2	PINK PEARL	YELLOW-BLUSH	PINK	PINK	PINK	EXC	BEAUTIFUL
3	NORTHERN SPY	RED/GREEN	WHITE	WHITE	TAN	EXC	GREAT TASTE
4	CAMEO	RED/GREEN	WHITE	WHITE	TAN	EXC	AMAZING TART FLAVOR
4	SMOKEHOUSE	RED/GREEN	WHITE	WHITE	WHITE	GOOD	GREAT FLESH COLOR
5	SPITZENBERG	RED	CREAM	CREAM	TAN	GOOD	GREAT FLAVOR
6	WINESAP	DK RED	CREAM	CREAM	CREAM	GOOD	BEAUTIFUL
7	GOLDRUSH	GOLD	WHITE	WHITE	TAN	EXC	TART AND CRISP
8	FORTUNE	RED	WHITE	WHITE	TAN	GOOD	GREAT SKIN COLOR
10	SUMMER TREAT	DK RED	WHITE	WHITE	TAN	EXC	BEST EARLY APPLE

APPLES FOR DRYING

Apples were cored and sliced and dried in Excalibur "Parallel X" Dryer

Color, Texture and Taste were compared.



RANKING OF APPLES FOR DRYING

RANK	APPLE VARIETY	DRYING QUALITIES			NOTES	
		SKIN	FLESH	TASTE		
1	SPITZENBERG	DK RED	TAN	EXCELLENT	RICH	BEAUTIFUL COLOR AND TASTE
2	ENTERPRISE	DK RED	TAN	EXCELLENT	EXCELLENT	ALMOST AS GOOD AS SPITZENBERG
3	SUMMER TREAT	RED	RED/TAN	GOOD	SWEET	BEST OF EARLY APPLES
4	NORTHERN SPY	DK GREEN	TAN	CRUNCHY	TART	GREAT APPLE FLAVOR
5	PINK PEARL	YELLOW	PINK	GOOD	TART	KIDS LOVE COLOR AND TASTE
6	RED FREE	DK RED	TAN	GREAT	BALANCED	GREAT FOR AN EARLY APPLE
7	CAMEO	DK RED	TAN	CRUNCHY	BALANCED	VERY GOOD
8	GRANNY SMITH	DK GREEN	LT TAN	CHEWY	TART	VERY GOOD
9	CAVILLE BLANC	TAN	GREEN	GOOD	TART	GREAT FLAVOR, BUT NO COLOR
10	GOLDEN RUSSET	TAN	TAN	GOOD	TART	GREAT FLAVOR, BUT NO COLOR

SOME INTERESTING OBSERVATIONS

Not much correlation between eating and drying quality

Pristine, Ginger Gold,
Sansa, Gala, Fuji, Suncrisp etc.

When they are bad they are really bad
McIntosh, Macon, Cortland,
Golden Delicious
Red Delicious, Fuji

Some people prefer chewy, some crunchy
and some varieties work better one way
than the other

Color is important for marketing



A WORD ABOUT STORAGE QUALITIES:

Early Varieties don't store very well, Pristine is an exception.

Apples we tested got sweeter in storage.

Best storage apples of those tested were from best to worst:

- Cameo
- Goldrush
- Keepsake
- Enterprise
- Fuji
- Northern Spy
- Spitzenberg
- Ashmead's Kernel
- Pristine



TREE FORM AND PRUNING EASE



PRISTINE



PINK PEARL

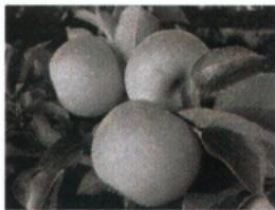
MY NEXT APPLE ORCHARD WILL HAVE:

Varieties selected having bests in each quality category, i.e. eating out of hand, baking, juicing, fresh slice and drying and storage

and where possible:

- trees with good disease resistance
- trees with good form and are easy to prune
- trees that do not over produce or become biannual
- trees that are taller than deer (no dwarf root stocks)

AND THESE WILL BE MY FIRST 12 TREES TO PLANT



PRISTINE

First Good Early Apple
Firm, sweet and tart
Reliable
Beautiful Tree
Scab Immune



GALA

Zillions of Sports
Firm, Juicy and Beautiful
Gala Supreme seems scab resistant



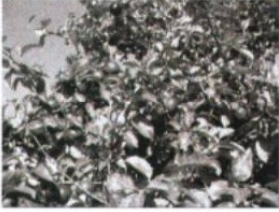
SUMMER TREAT

First Good Red (Mid August)
Spectacular Tree
Fairly Good Fresh Slice



HONEYCRISP

Taste test winner
Prolific but we don't thin
A bit unstable – off years
Big following



LIBERTY & JONAFREE

Good DR subs for empire and Jonathan
Do well in taste tests
Good Bakers



PINK PEARL

Beautiful & Delicious – Bright
Ranks high in most uses
Terrible tree to manage, but worth it



ENTERPRISE

One of the best Disease Resistant
Spectacular Color and Skin
Tough skin is delicious and pest resistant
Amazing Dried, Juiced and kept in storage



GOLDRUSH

Delicious Tart Flavor
Improves in Storage through Winter
Disease Resistant
Over produces without thinning
Crazy growth, but all worth it!



CAMEO

Beautiful and Delicious
Best Keeper we grow
Great Slicer, Dryer
Nice tree reliable bearer



GOLDEN RUSSET

A must for cider
Good Pie Apple
Fairly Disease and Pest resistant
Beautiful specimen tree



CAVILLE BLANC

Best baked apple ever
Great Pie apple
Dries pretty well



NOTHERN SPY

Amazing Pie Apple
Easy Tree- Bears evenly and regularly
Big following – good seller



ESOPUS SPITZENBERG

Overall - **Best Apple we Grow**
Great Flavor, but not very crisp
Amazing Juice
Great Cider
Best Drying
Best in Group Pie Apple
Beautiful Tree- reliable even bearer



SUMMARY

THERE ARE GREAT DIFFERENCES IN APPLE VARIETIES
THERE IS NO REAL "ALL PURPOSE" VARIETY

JUST AS WITH VEGETABLES, ANIMALS, AND ALL OUR FOOD,
MOST BREEDING HAS BEEN FOR PRODUCTION AND APPEARANCE
RATHER THAN TASTE

A MIXTURE OF HEIRLOOM, DISEASE RESISTANT AND NEW
VARIETIES ARE BEST IN A NEWLY ESTABLISHED ORCHARD

ORGANIC OR SUSTAINABLE ORCHARD MANAGEMENT GOES WAY
BEYOND SPRAYING WITH "SAFE" SUBSTANCES

THANKS TO THE SARE FARMER GRANT PROGRAM FOR FUNDING OUR EFFORTS
AND MANY OTHER EFFORTS SUPPORTING SUSTAINABLE FARMING