

# FOOD for Ottawa Region

Ken Taylor

April 6, 2013 in Ottawa, Ont.

We research many apples and select best to be propagated?



The winner "Pink Lady" is propagated for our Farm market !



# WORKSHOP FORMAT

## Saturday AM 9:30 – 12:30

- Farm food research is being neglected?
- Fruit growers are disappearing?
- Fruit propagators are extinct?
- **Who** propagates now – any you know?
- **What** propagation methods are best?
- **Where** do we need propagation - Ottawa?
- **When** should we – 12 months/year?
- **Why** propagate- save \$40,000,000,000?
- How to save “Heritage” fruit?
- How to Plant/Prune fruit trees?
- Propagating for money?
- **Questions at anytime**

## Afternoon 1:30 – 5:30

- Seeds connection to food?
- Why have farmers lost their seeds?
- Propagating food from seeds.
- Selecting for best seedling fruit trees
- Seedlings before grafting always
- Discuss and distribute grafting materials
- Taylor graft technique shown
- Do practice graft using Taylor propagation method
- Graft scion to rootstock to **create your own fruit tree!**
- Label & wrap “baby tree” to take home
- PLANT AUCTION – bid to win!

**Pay for trees/seeds purchased in auction by cash or cheque(Ken Taylor)**

# Is Ottawa growing healthy FOOD?

Today's three greatest human health risks are **FOOD** related: 1) Obesity (fatty *foods feel full*) 71% NFLD  
2) Diabetes ( cheap sugary *foods addictive* ) SOS  
3) Cancer (high pesticide residue *foods*) Dirty Doz

Greatest threat to health of planet is also **FOOD** (destructive production and long distance transport)

**FOOD** is the biggest \$\$\$ in Canada(\$200B+) and USA (\$600B+) Florida exports \$100B in fruit/veggies alone.  
California exports \$200B. Canada imports so much fruit/veggies (\$60B from California alone) that we now  
have largest *food trade* deficit ever recorded (export-import ) incredible \$40,000,000,00

## \*\*\*\*\* **WHY IMPORT?** \*\*\*\*\*

- No Ag land or water shortage? **Plenty of both in Canada!**
- Lack farmers? **Even “lazy farmers” can feed 37M people!**
- Chinese “slave farmers” feed 1.2B + 37M Canadians + ?B!!
- Farmers here grow **WRONG** food? **YES!** Less corn **YES!** Less soya **YES!** MORE GRAPES
- YES! More China PEARS YES! More pine NUTS YES! More GOJI

**Canadian farmers had better get off their collective “ lazy donkey”  
and start growing the healthy food Canadian consumers wants to eat!**

# Why Learn How to Propagate FOOD?

- Nurseries now propagate mainly ornamentals( 99.9% ) and neglect fruit trees resulting in huge surplus of “pretty” trees but scarcity of “food” trees!
- Public now wants tasty, nutrient dense fruit but these are not available in Canada!
- Farmers are making conversion to organic food crops but need better varieties!
- Gov/Univ fruit research(R&D) is almost non-existent in Canada now!
- Also Gov research is aimed at export commodity market, like corn, wheat, pork,etc
- New research/propagation is needed in order to supply huge import food demand for crops like grapes, pears, plums, etc
- Food trees mitigate climate change- animal food aggravates it- grow food on a tree not on a hoof!
- Learning to propagate your own fruit frees you from tasteless supermarket food and reconnects you to nature’s creative processes that feed us all.
- **We must learn to propagate varieties of food that are adapted to Local Organic Permaculture Holistic Biodynamic growing methods and re-establish Canada’s ability to feed itself**

# How to Propagate – it all starts with FRUIT!





# PROPAGATION METHODS

- Propagating a piece of tree branch.....**CUTTING**
- Propagating by joining scion to root...**GRAFTING**
- Propagating by joining bud to stem..**BUDDING**
- Propagating in science lab.....**TISSUE CULTURING**
- Propagating by bending branch to soil..**LAYERING**
- Propagating with a piece of root.....**ROOTING**
- Propagating with a leaf pad....all above **CLONING!**
- Propagating from seed in fruit....**SEEDLING..aft!**

# CUTTINGS

- This is vegetative asexual propagation of plants in which a piece of the source plant (Mother tree) containing 2 or more stem cells is placed in a suitable porous medium.... Pro-Mix, Perlite.
- These cuttings should then produce roots and grow an exact copy of the Mother plant.
- Two times of year when cuttings work best:
- **1) Spring Hardwood Cuttings**
  - uses dormant plant material ( done in winter hibernation). Hardwood cuttings are done with bottom heat( 25 C) in cold chamber environment( 5 C)
- **2) Summer Softwood Cuttings**
  - uses actively growing plant material (taken during summer growth) and are immediately placed in misting chamber with high humidity(90%) and high temps( 25 C)
  - softwood cuttings are not stable so must be used quickly after cutting
  - medium for rooting cuttings must be very porous to prevent disease (rot)

## **Trees from Cuttings**

- identical to parent tree and fruit is almost the same
- requires vigorous “mother” tree to get proper cuttings
- these self-rooted trees have no “graft union weaknesses” to worry about

# VARIETIES USED FOR CUTTINGS

**Polar Green Seedless Grapes**



**Cascade Seaberries**





# **GRAFTING or TREE SURGERY**

- ***Grafting is most common method used to reproduce fruit trees at the present time.***
- Two surgical techniques used:
  - 1) **Grafting** - mother scion “pencil” joined to rootstock stem
  - 2) **Budding** – insert mother bud into root stem cambium
- Grafted and Budded trees are identical to mother tree
- Fruit quality is “almost” identical to mother fruit
- Choosing proper scions and rootstocks is critical.
- Timing of surgery is utmost importance
- Budding or grafting has many variations in method/timing

# BENCH GRAFTING DETAILS

## Bench Grafting (best in SPRING) :

- process of surgically combining a branch (scion) from a superior mother tree unto a surrogate tree (rootstock) resulting in a new tree that is nearly identical to the mother tree (asexual reproduction process). SPRING
- Joins cambium of dormant tree (rootstock of 1/4" - 3/8" calibre) with cambium of dormant scion (15 cm size and approx calibre of root stem)
- Taylor graft is simplification of "whip and tongue" type bench graft...no tongue!
- Cleft graft is another type of bench graft but more difficult to do.
- Proper cuts are crucial and will be demonstrated in afternoon session
- Stabilizing the "cambium joint" or graft is done with rubber or tape
- Dehydration of graft is prevented with grafting wax or Parafilm
- Callusing of cambiums requires heat ... Could use black tree wound paste
- Successful grafts should shoot scion buds in 2-3 weeks once planted out in SPRING
- Prune to and keep most vigorous scion bud and **trim off all** rootstock stem buds below graft
- Most vigorous scion bud left should produce 4-5 ft of new growth by fall – a new TREE!
- New fruit tree can be dug when leaves drop in FALL

# **BUD GRAFTING DETAILS**

## **Bud Grafting (best in SUMMER):**

- Uses actively growing tree (rootstock) of 3/8" calibre or more
- Uses fresh new bud from mother tree
- Inserts cambium of bud into cambium of rootstock tree
- "T – bud" is most common method of joining the two cambiums
- Chip buds used if rootstock is not actively growing
- Proper bud cuts will be demonstrated in afternoon session
- Stabilizing the "bud insert" is done with budding rubber elastic
- Bud dehydration is prevented by tightly wrapping budding rubber
- Callusing of cambiums of bud and rootstock occurs quickly in summer
- Successful bud grafts should be well callused within 2 weeks
- Force bud "growth spurt" following SPRING with "proper cut"
- Should have 5-6ft tree by FALL. Dig when dormant for transplanting.

# GRAFTED and BUDDED FRUIT

**XMAS – budded rootstock pear**



**SEURI - bench grafted pear**



# OTHER PROPAGATION METHODS

ROOT SUCKERS

Banana



LAYERING

Cherry Olive





# Propagating Seedling Trees

## *What do seedlings offer that grafts do not ?*

- **R&D** – trees propagated from seed can vary greatly in winter hardiness, fruit quality, disease resistance, drought tolerance, soil preference, etc. Plant out 1000 seedlings and start selecting for desired characteristics. Large fruit, red flesh, whatever?
- **EASY** – to propagate trees from seed is easier than grafting. Stratify seed Nov outdoors or Jan indoors in flats( for 90 days)
- **COST** - seedling trees from seed are cheaper to propagate than grafts. but fruit may be much inferior to fruit seed parent
- **NEW FRUIT** – trees grown from fruit seeds can express new fruit types(chums, pluots, apriums, apricots, shipova). These open pollinated crosses( done by plant breeders or naturally by bees ) will give us Canada's exciting new fruit future!
- **NO CALLOUS** - no graft union to worry about. Callous tissue is weakest point in grafted tree

# SEEDLING TREES start with FRUIT

RIPE PERSIMMON FRUIT



PERSIMMON SEED extracted



# FRUIT SEEDS TO CHOOSE?

## *What seedling fruit trees should be grown?*

- **VIABLE SEEDS** – Must choose fruit seeds that have been open pollinated and grown to maturity to get viable seeds that will germinate and grow.
- **TRUE TO SEED** - Any fruit with narrow genetic diversity will come truer to seed (peaches, cherries) than those with broad genetic background (pears, apples).
- **NO GMO** – do not choose GMO seeds for reproduction.
- **Hybrid** industry seeds – get inferior offspring as superior parent genetics not expressed

# SEEDLING versus GRAFTED TREE

## ***SEEDLING Tree***

- longer to wait for fruiting to start. From 5 to 20 years depending on species
- seedlings grow more vigorously so tree becomes much larger . Seedling walnut tree can grow to 100ft
- seedlings are usually tougher than grafted trees
- can use seedling trees for grafting upon, ie, they become rootstocks
- seedlings make great wildlife food but fruit quality is unpredictable
- Seedlings good for windbreaks

## ***GRAFTED Tree***

- grafted trees are very precocious. Usually start producing fruit 2-3 years after grafting.
- quicker fruiting causes tree growth to slow down resulting in smaller tree
- grafted trees can be kept even smaller with dwarfing rootstocks or dwarfing interstem grafts
- only grafted trees suggested for commercial orchards because fruit quality and production are predictable
- best bet to renew lost fruit quickly

**STOP TALKING**

*Lunch time*



# Are Ottawa Farmers Growing Healthy Local FOOD?

- Over 95% of the food I grow is annual veggies or grains?.....YES or NO
- Over 75% of the food I sell is milk related?.....YES or NO
- Over 50% of farm revenues are meat sales?.....YES or NO
- Over 25% of the food I eat is grown on farm trees?.....YES or NO
- GE seeds(GMO) research should be stopped ?.....YES or NO
- I understand food growing principles of permaculture?.....YES or NO
- I grow my food without NPK fertilizers?.....YES or NO
- I grow my food without chemical inputs?.....YES or NO
- I plan to change **what** food I grow this year?.....YES or NO
- I grow healthy food and share/sell to others?.....YES or NO
- **My name :** \_\_\_\_\_ **Contact info:** \_\_\_\_\_

Rate yourself( scale of 1-10) on whether you are growing healthy local food \_\_\_\_\_

# How to GROW FOOD in extreme climates?

Transforming our food growing perspective!

- **Conventional** – many repetitive/expensive inputs. Also dangerous to our health?
- **Organic** – we were “certified organic” but now “**local organic**” is more important to our food consumer. We still grow organic
- **Permaculture** – we like the philosophical **concepts** but had to change the **contents** to handle our climatic extremes.
- **Holistic** – “natural” inputs must be very precise to be effective – we “holistic” a little!
- **Biodynamic** – complicated concepts. Formulations very complex. Think we use?

\*\*\*\*\* **OUR NEW MODEL** \*\*\*\*\*

- **Freedom Farming** – or “zero interference” focuses on reducing all inputs and restricting farm labour to “**plant and pick**”.
- Plant once and pick annually is ultimate goal of our growing model
- Might call it “Permaculture Agroforestry” ?

**PAWPAWS below – maybe carefree forever?**



# Our Research aims were to adapt the Food to our growing conditions and Zero interference!

## We accomplish this is as follows:

- **Select** and **breed** our **own varieties**
- **Custom design** food trees to handle chaotic climatic and our conditions - “**taylor-made**” trees!
- **Switch** weaker genetics (apples) to more resistant genetics (apple-pears)
- Open field cropping changed to “**guild**” cropping. **Food guilds** capture sun energy better and symbiosis between plants increases food quality/quantity.
- Changed focus from higher yields/acre to **higher profit/acre**
- **Adapt climate to genetics** where possible. (eg. mitigate “wind chill” on peach blossoms with windbreak)

## How to change genetics from BANANA to PAWPAW



# How to breed a locally adapted Northern Banana or Pawpaw ?



# Our Criteria for Breeding & Selecting Genetics for Sustainable Healthy Food Supply

## Criteria we aim for in new food model :

- **Superior taste** as first criteria rather than cosmetic factors such as colour, size, shape, etc
- **Higher nutrient density** - from carbs, protein, minerals, vitamins, anti-oxidants, etc ( measure ORAC, Brix)
- **Regional adaption** to chaotic climate change - extremes in cold, heat, drought, rain, UV, etc
- Select for adaptability to **organic agriculture** (less chemical use, etc),
- Select for **disease resistance** vs fireblight/scab/blackknot
- Select for food with better **storage capability** as opposed to better shipability
- Select plants with root systems that better
  - 1) assimilate soil nutrients.
  - 2) fix Nitrogen in soil
  - 3) survive drought
  - 4) resist strong winds
  - 5) handle poor soil conditions
- Uncontrolled, open-pollinated breeding used to maximize genetic diversity for future food stability programs

Over the past 50 yrs most Gov/University breeding programs have focused only on industrial farming [crop yields](#).....and not on researching foods better adapted to climate extremes!





# Our Breeding of new food crops starts with planting Seeds and selecting Seedlings



- Find **superior** adapted “mother” papaw tree then save seed from its mature “fruit”
- Cold stratify seed(90 d) without drying, then germinate with heat in deep soil in shade
- Line out seedlings in research field trial area and start selection process(progeny row)
- Rogue out inferior seedlings(mass selection)
- Graft superior seedlings to convert juvenile wood to fruiting(accelerates evaluation)
- Try back-crosses(selfing) for exposing recessive genes and traits you don’t want
- Let natural selection take place without input interference of pesticides, fungicides,NPK,
- Once a seedling has been selected as fulfilling criteria aimed for... we can then play with rootstocks, interstems and other “growing” influences to see how the superior traits hold up.
- Final test is to plant in other local “fields”

# OUR RESEARCH TEAM



# Grampa let's go on Reseach Tour!

My "organoleptic" taste testers!





# Farm Visual Overview

**Zero interference**



**Our farm market**



It gets frosty cold (-40C)





# From Pretty Flowers comes Delicious Fruit











Poirés  
\$4.95

Fruits & Légumes  
\$1.00

# Our best Seedless Table Grape Selections



- **Somerset, Earliblue, Magenta, Redliance, Polar Green, etc( we have 50 table grape varieties under trial)**
- Year round imports supply 100% of **\$400M/yr** Canadians spend on table grapes + \$600,000,000 on raisins
- Canadian farm vineyards produce wine grapes but no eating grapes
- Grape import prices are expensive at \$4/lb – as there is no “slave-labour” Chinese production.
- Easy to grow only if you select right genetics
- Overproduction can be easily processed into raisins, juice, jam, pies, vinegar,etc
- **Grape expectations: 10lbs/vine X \$4/lb X 1000 vines/ac = \$40,000/yr WOW great profit/acre!**
- **Need thousands of acres of Canadian table grapes to just meet present demand – why is message not getting out there???**
- **Wine vineyards currently a “hot fad ” but eating grapes make much more sense for future grape farmers.**



# Kiwi grapes anyone?



# Kiwi (Kolo, Krupno & Arguta's)

- These are shade loving vines with fragrant white flowers.
- Vigorous vines are great for covering fences, walls or trellis.
- Northern kiwi are very hardy(Z2)
- Fruit has smooth skin and are much sweeter and less acid than the commercial fuzzy ones.
- Only female kiwi give fruit but need male kiwi close by for pollination.
- Great for climbing trees and adaptable to poor soils.



# Grow Pears or Apples?

Our pears are best at adapting to climate extremes





# Try Taylor Apple-Pears



- Looks like an apple tastes like a pear
  - $\$3/\text{lb} \times 150\text{lbs}/\text{tree} \times 200$  trees/ac =  $\$90,000/\text{acre}$
- 1000 a corn = \$250,000  
1000 a TAP = \$90,000,000

- Dual market-apple/pear
- Stores well -12 months
- 100% China import now
- 500 \$M pear market

## Kenko genetics also show great disease resistance!



- Before and after imports
  - Disease resistant
- Easy to pick and maintain



# Shinseiki



**Bartlett pear is no good in our climate -  
so we bred our fantastic tasting Northbrite pear!**



Good storage  
Easy to maintain  
Large market  
Disease resistant

125 lbs per tree  
200 trees per acre  
\$50,000 per acre – WOW



# Our “So Sweet” - 40C Pear

- Best pear for really cold northern climates (Zone 2)
- Matures very early
- Delicious, sweet and juicy
- Prolific crops



So many to choose from Red Star, Gold star, Pembina, Damson, Brookred, Brookgold, Stanley, Italian, etc?



- \$2 /lb
- 100 lbs per tree
- 250 trees per acre
- Good producers
- \$50,000 per acre

- Some are black knot resistant
- Delicious
- Good producers



# Plumcot -better than Plums!



# Plumcots for Food and R&D



Plumcots - juicy sweet!



# Chum pie - better than Plum?





# Chums (Sapalta, Convoy, Opata, Kappa)

- A mix of cherry and plum, combining the best characteristics of both.
- Fruit are the shape of a cherry but larger like a plum, varying in color from red to dark purple.
- Chum is very hardy (Z2) bush (2m)
- Tolerate sandy poor soil, withstand drought and usually bear fruit one year after planting.
- Masses of beautiful, fragrant flowers cover bare branches in spring
- Need two varieties for pollination.



# Kappa





# Let's talk Berries

## Berry genetic characteristics we aim for:

- Berry good to eat - **superior taste**
- Fruit has **storage** capability
- Fruit is **quick to pick** by hand (\$\$/hr)
- Plant is **hardy** in zone 5 and colder
- Plant is **adaptable** to poor growing conditions
- Select best for **disease /insect resistance**
- Easy culture – “**plant and pick**”



# Mulberry (Montreal Black, Capscrum, Illinois)



- 20 years without missing a crop
- Berries picked from mid June to freeze up
- Super sweet with no acidity – black juice!
- Never needs spraying for anything
- Wildlife are addicted to mulberries

# PYO – Blueberries?







I'D RATHER BE  
AUSTRALIA 1977  
DOWN UNDER!



# Haskap

- Attractive hardy (Z2) bush (1M) with very early yellow flowers (April)
- Tolerates shade very well and wind
- Hanging blue fruit ripens in mid-June
- earliest of all bush berries...even before strawberries.
- Birds love them...must protect-netting
- Disease and pest resistant.
- Need two varieties for pollination.
- Berry blue, blue belle , tundra, borealis



# Seaberry (Cascade & Igor)

- Dense shrub beautiful silver leaves (2m/22)
- Berries have pineapple-citrus flavour
- Used to make health tonics, fruit syrups, jams, chef “coulis”
- Orange oil from the seeds is delicious (\$\$\$)
- Seaberries have higher ORAC (anti-oxidants) than blueberries.
- Plants tolerate sandy soil, salt spray, drought , extreme cold and no care
- Roots improve soil fertility by fixing nitrogen.
- Berries hold on branches all winter



# OUR Best Raspberries

**Early Black**



Early Black – black raspberries

**Blue Night**



Bleu Nuit – purple raspberries



# Gooseberries (Captivator/Hinonmaeki)

- Small, very cold hardy bush (1m / Z2) with incredible crops of sweet acid fruit
- Researching thornless varieties
- Researching larger fruit
- Researching colour variants
- Some gooseberry fruit stores well
- Eat fresh or cooked in pies, preserves, chutney, etc. ...good value added
- Quick to pick but thorny





# Currants

## (Black, White, Red, Golden & Pink)

- Shade tolerant bush (1m / Z2)
- Currants are full of nutrients (ORAC)
- Wide range of flavours
- Store well
- Easy to process



# Strawberries

## (Sparkle, Bounty & Albion)

- Sparkle is heritage variety with sweet, dark-red, flavourful berry
- Bounty is hardy, productive plant with large sweet berries
- Albion is tastiest, everbearing variety. Large firm berries
- Strawberries spread easily, great for ground cover



# Apples - \$95M grown in Canada

(\$110M imported/yr) + ?\$M in juice, etc





# Find the McIntosh?





# Wonder Red



# How about Tree Protein “meat on a tree”?

## HEARTNUT WALNUTS

- Great storage
- Easy to pick
- No competition
- High quality protein
- Best carbon capture of any tree
- Taste like butternut



- \$6 per pound retail
- 100 lbs/treeX100 trees/ac
- \$60,000/acre---WOW!

# Chestnuts



- “Potato on a tree” = tree chestnut
- Better carb than rice/bread/pasta..no annual replanting
- New blight resistant chestnuts = profit potential
- Thrives in sandy “potato soils” even acidic ones
- Easily stored for extended year-round sales(freeze)



# Northern Pecans

- Beautiful tree
- Liked by deer and people
- Produces late in the season
- Can hold fruit until winter sets in





# Hazelnut

- Our hazels are a mix of wild Canadian hazels crossed with larger European filberts to give offspring that are very cold hardy (Z3), early maturing, disease resistant and produces large, high quality nuts in three years.
- These small, multi-stemmed trees (3m) have beautiful dense foliage.
- The nuts which have a higher nutritional value than acorns and beechnuts are also loved by all kinds of wildlife



# Cherries (Passion/Cupid/Romeo)

- All 3 are bush cherries (2m)
- Very hardy (z3)
- Eat fresh or process
- Easy to protect from birds
- Plant and pick cherry
- July-August



# Sweet Cherry - Tehranivee

A mahogany colored self fertile sweet cherry with black-red juice. Tehranivee has excellent flavor as well as size, sweetness and firmness. It ripens at the end of July . Bred by Canadian researcher **Gus Tehrani**, it was released in 1996 from the Vineland Reseach Station. This cross of VanXStella is great for home orchardists.

Other great sweet cherries are

- **Black Duke**
- **Lapins**
- **Blackgold**
- **Whitegold**
- **Kirstin**
- **Stella**
- **Genetic Dwf Lambert**





# Dwarf cherry in plastic



# STOP TALKING - AUCTION TIME



Plastic laid in fall for early spring planting



Black raspberries in plastic



**Weeds = green manure**







# Propagate with Ken Taylor and WE?

- For more than 30 years Ken Taylor has been involved in the study of organic and cold weather farming. Decades of field experience and experimentation have made him one of the foremost authorities when it comes to hardy fruit trees and plants. His research and development efforts have enabled him to put together one of the most comprehensive and unique tree collections in Canada. He shares this collection with the public by giving hands-on workshops. Most are surprised at the diversity of trees that can be grown in cold climate areas - trees such as Asian pears, peaches, chums, medlars, quince, kiwis, seedless grapes and walnuts.
- Ken was born in Danville, Quebec and **worked the family farm** until the age of 16 when a scholarship "coerced" him off the farm and culminated with a doctorate degree in biochemistry (PhD McGill 73).
- Degree in hand, his passion for farming returned with the purchase of 70 acres of vacant land on Ile Perrot. Trying to establish a viable fruit farm required many years of "off farm income", 35 years at John Abbott College teaching and developing a wide diversity of chemistry related courses including winemaking, food biochemistry, consumer and environmental chemistry, etc
- With a unique scientific background in biochemistry (effect of chemicals on human health) and years of practical experience in organic farming, Ken has become a very outspoken advocate of the sustainable organic food movement. A much televised NFB film "Organic Prophecies" has aired many of his passionate views on the subject.
- His different perspective on the local food movement has been exposed in a diversity of media; Harrowsmith, Canadian Organic Growers, Small Farm Journal, Canadian Living, REAP, Plant Talk, The Gazette, La Presse and most recently on the Food Network show Ricardo and Friends.
- The invaluable experience and information Ken has acquired over the last 35 years has made him one of the foremost authorities on northern tree crops. He believes that **replanting our vast Canadian landscape with tree crops** is the most sustainable, environmentally-sound path to regenerating the planet and making small farms profitable again. **GREEN BARN NURSERY** becomes **main focus of our farm** in order to propagate the necessary trees for this food forest revolution.



# **SEEDLING SEEDS for Payback**

- See display samples

- **Forest Gardening: Ecologically Intelligent Design for Human Living**

- *"The ultimate goal of forest gardening is not the only of crops, but also the cultivation and perfection of new ways of seeing, of thinking, and acting in the world".*  
~ Dave Jacke, *Edible Forest Gardens*

- In this workshop we inform and engage you in creating ecologically sustainable sanctuaries for human living and planetary sustainability.

You will learn how to apply practical Forest Gardening design to a diversity of landscapes with a focus on dense urban environments and temperate regions.

- Learn how to grow your own food no matter how big or small your backyard is. Design your own property, and learn how to 'be a part of the solution' using forest gardening principles.

Passionate, long-time gardeners, forest gardeners, permaculturists, herbalist and eco-spiritual guides, Shantree Kacera D.N., Ph.D. and Lorenna Bousquet-Kacera, invite you to discover this remarkable model for creating gardens that support oneself and the Earth.

- This is a hands-on-experiential training in ecosystem structure and function, and in landscape understanding. It will show you how you can achieve the same benefits that natural systems demonstrate: stability, resilience, self-maintenance, self-renewal, increased soil quality, and nutrient conservation.
- *"Gardening is an active participation in the deepest mysteries of the universe."* ~Thomas Berry
- [A Conversation with Shantree](#)

# Changes at Windmill Farm with Research Team (1973-2013)

- CSA in Mtl area - 200 customers in 1980's - changed to on farm market
- Restaurant sales(cranky chefs) phased out after a few yrs
- Transformed all sales to on-farm market in rebuilt cow barn – up to 2012
- Self-bred seeds used on farm and then retailed( SOS seeds) - Mtl melon
- Our farm's R&D field trials led to an incredible new tree crop diversity we never thought would be viable or profitable in our tough climate.
- Our “taylor-made” nursery trees became known and thus Green Barn Nursery Inc was formed so that our older returning son Steve could “grow it” in direction he wanted. He has a booth at conference!
- Presently arranging succession of 30 acre R&D section of farm to younger returning son Nick – his black current research at OACC Dalhousie has inspired him to return to farm this year and bring our farm research trials to **fruition** so as to benefit future generations of young farmers like himself!
- Toughest transformation - farmer Ken phasing himself out!



# FARM Visual Introduction

**Our Zero interference**



**Our Farm market**



# WE are a Family Farm



# Who are WE?

- **Ken** researches, farms, observes, teaches and challenges Agricultural system – “mad scientist”
- **Steve** has been marketing, managing, branding and selling -“business fanatic” + Robyn,Zoe,Cooper
- **Lorraine** – encourages and supports Ken/Steve but keeps them grounded with finger on “control” button
- **Nicholas** – doing MSc in plant science at OACC and plans to return to farm and help with R&D
- **Kristina** – PhD Nuclear Medicine + RSO McMaster return to farm business most unlikely



# What has our Family Farm done?

- CSA ( first in Mtl area 200+ customers)
- Farm Market(veggies,fruit,nuts,berries,etc)
- Seeds( sold our own seeds - retail and wholesale)
- Restaurant food( sold to high end chefs “Joe Beef”)
- Pushing envelope on storing food, drying fruit
- R&D ( VFNB diversity, breeding for “Zero Int.”)
- Farm Anew ( engineer, build, “Zero Int.” food farms)
- Tree GB Nursery( to rebuild farm/city food orchards)
- Farm inspires children (3 left farm “1+1” return )

