


Growing Garlic

Successfully & Profitably

Setting and reaching realistic farming goals.
Meeting challenges with dignity and enthusiasm.



Summary of Qualifications

Education

Experience

Skills

Characteristics



Graduated Magna Cum Laude from a prestigious private university with a degree in philosophy.



THE UNIVERSITY
OF TAMPA

Directed a theater company for 10 years. Performed as main stage act at largest Renaissance Festival in North America.



27TH ANNUAL ARIZONA
RENAISSANCE
FESTIVAL™
& ARTISAN MARKETPLACE



NATURAL PRODUCTS EXPO WEST

VP in charge of production
at \$3,000,000 /yr trade
show exhibit manufacturer.





Toured Europe for 11 years with renowned blues band, hitting 14 countries and playing major jazz and blues festivals alongside the greats; James Brown, Buddy Guy, Bo Diddley, Nina Simone, Dr. John...




Managed development of a 120 acre off-grid retreat facility in the mountains of Arizona – 7 years.



If I can do it... you can too.



Goals:

- ▶ Basic knowledge of the garlic plant; growing characteristics, nutrient requirements, etc.
 - ▶ Stages involved in growing and how to efficiently execute them.
 - ▶ Confidence on any scale farm.
 - ▶ Understanding the risks.
 - ▶ Marketing strategies and how to maximize profits.
- 

The Schedule

9:00am–12:30: (Basement Suite)

- Using the Planner (business plans), Understanding the Bulb, Diseases–Risks, Stages in Growing

12:30–1:15: (Suite and Outdoors)

- Lunch Break


1:15–3pm: (Field)

- Equipment, soil prep, dimpling, planting, scape harvest, irrigation, harvesting, curing...

3:30–5pm: (Basement Suite)

- Marketing: wholesale, retail, gate sales, value added, markets, distributors, cooperatives.
- 

Session One (9:00–12:30)

- ▶ Planning Your Garlic Farm – Beta v1.1
 - “If you fail to plan, you plan to fail”
 - Setting realistic goals – the learning curve
 - ▶ Garlic 101
 - ▶ Diseases & Risks
 - ▶ Major Steps in Growing Garlic
- 

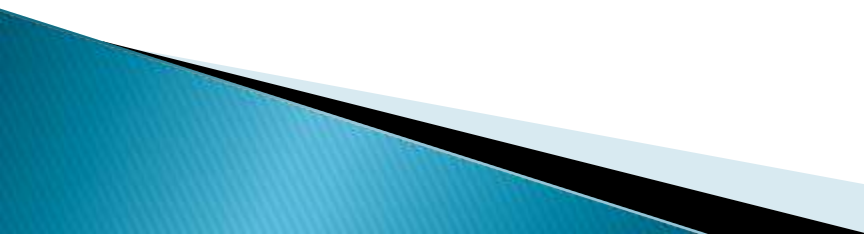
Planning Your Garlic Farm




The screenshot displays the 'Planning Your Garlic Farm' software interface, version beta v1.1. The main window is titled 'Planning Your Garlic Farm - Beta 1.1' and includes a subtitle '(another free tool provided by www.raspicartfarm.com)'. The interface is divided into several sections:

- Year One (%) Cultivar:** A table with columns for Cultivar, Price, Yield, and others. It lists various garlic varieties like 'Crown of Thorns', 'Crown of Thorns', 'Crown of Thorns', etc.
- Year One (%) Expenses:** A table with columns for Expense, Price, and others. It lists various expenses like 'Land Preparation', 'Seedling', 'Fertilizer', etc.
- Year One (%) Labor:** A table with columns for Labor, Price, and others. It lists various labor tasks like 'Land Preparation', 'Seedling', 'Fertilizer', etc.
- Year One (%) Summary:** A table with columns for Summary, Price, and others. It lists various summary items like 'New Market Penetration', 'Current Market Penetration', etc.
- Year One (%) Bulb Varieties:** A table with columns for Bulb Varieties, Price, and others. It lists various bulb varieties like 'Crown of Thorns', 'Crown of Thorns', 'Crown of Thorns', etc.

The interface also includes a central play button icon, suggesting a video or animation component. The bottom of the screen shows a status bar with the text 'Copyright © 2007 by R. S. Picart, All Rights Reserved'.



Preparing for What's to Come

- ▶ Start-up Capital
 - ▶ Allowing for the Learning Curve
 - ▶ Cultivar Selection – Targeting your Market
 - ▶ Labor Considerations
 - Use the learning curve period to assess needs
 - Finding motivated workers
 - ▶ Plan for Equipment Costs
- 

The Garlic News [\(rcf.com/resources\)](http://rcf.com/resources)

- ▶ Articles by and for Growers
- ▶ Letters from Growers
- ▶ Ad Space
- ▶ Research and News
- ▶ Disease & Pest Control
- ▶ History
- ▶ Marketing Ideas
- ▶ Stay Connected



Jim Capellini
Lumby BC 250-547-2077
www.rasacreekfarm.com

- 10 Free Bulbs -
Subscribe to the
RCF Newsletter
for a chance to win
*Drawing
Sept 5th*

New Website Content

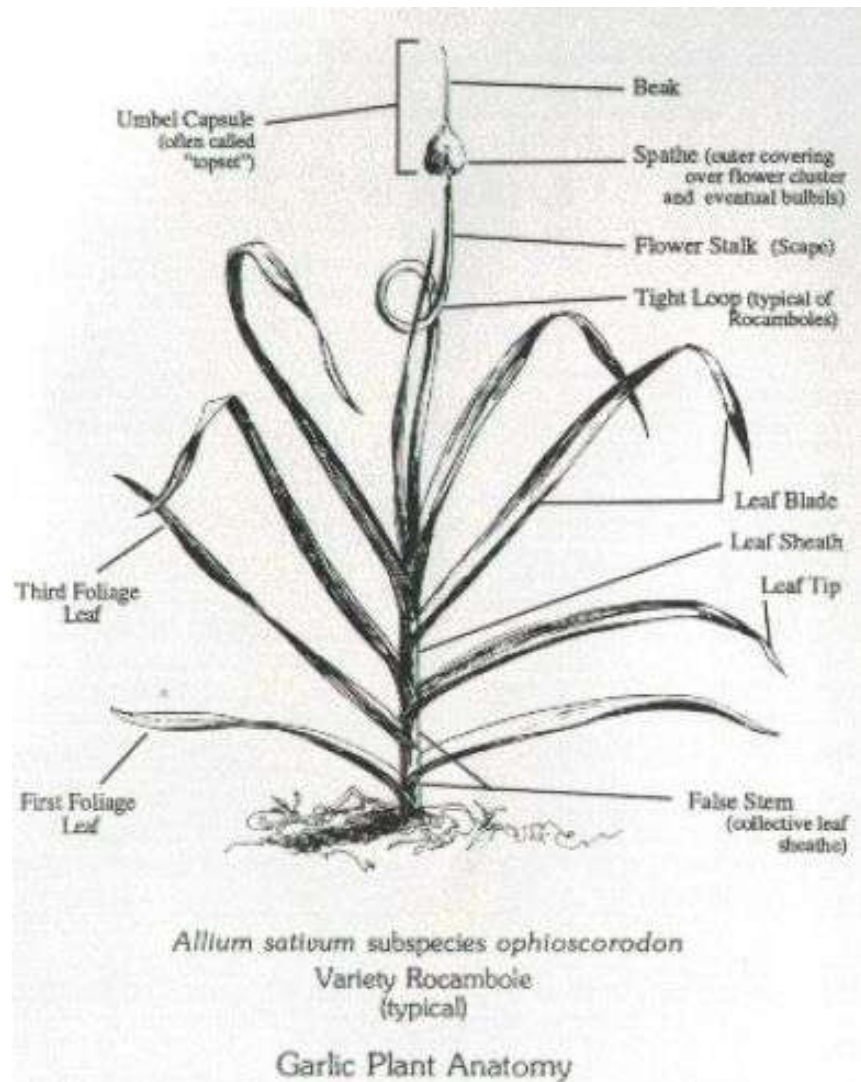
- ✓ *The Garlic News* - Back Issues TOC
- ✓ Extensive "How to Grow Garlic" page
- ✓ Robust new catalog and shopping cart...

 **Seed Garlic: Bulbs and Bulbils**



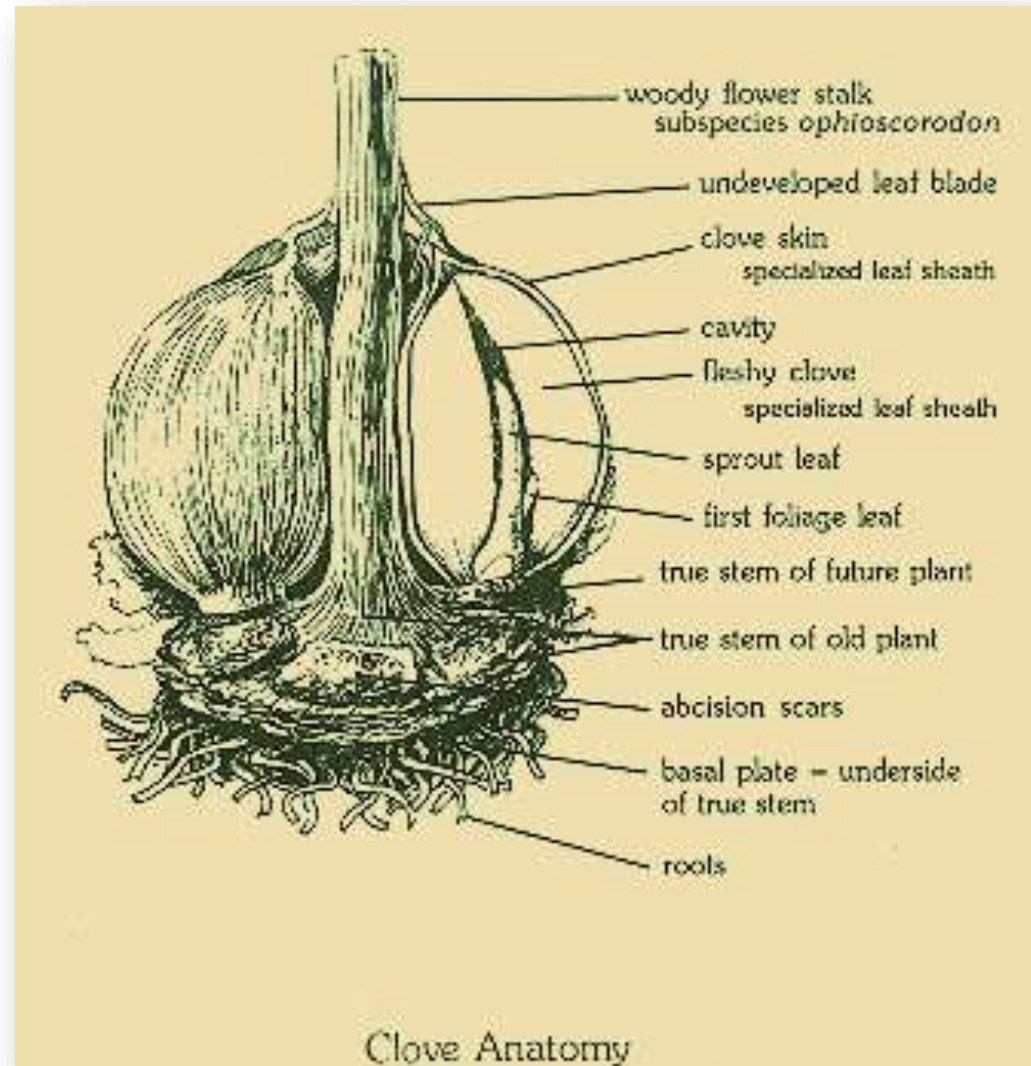
Garlic 101

- Beak
- Umbel
- Scape (Flower Stalk)
- Leaf Blade
- Leaf Tip
- False Stem




The Bulb

- Roots (beard)
- Basal plate
- True stem (old)
- True stem (new)
- First foliage leaf
- Sprout leaf
- Fleshy clove
- Clove skin
- Undeveloped leaf
- Woody flower stalk



Diseases & Pests

- ▶ White Rot (*Sclerotium Cepivorum*)
 - ▶ Wireworm (Larval stage of Click Beetle)
 - ▶ Bulb & Stem Nematode (unlikely in BC)
 - ▶ Leek Moth (Prevalent in Ontario)
 - ▶ Blister Beetle
 - ▶ Rust (Coastal problem, fungal in nature)
 - ▶ Deer (love to trample)
 - ▶ Rodents (Vole damage over winter)
- 

The Dreaded White Rot !



White Mycelial growth at base

Poppy seed sized Sclerotia



Wireworm



Amongst Garlic Roots



Limonius Californicus



Botrytis Porri

- First symptoms appear in spring or early summer in the form of water-soaked neck rot near the soil line.
- After infecting the pseudostem, the fungus grows downward towards the bulb attacking the inner axis and leaving the exterior asymptomatic at first.



The CURE (Treats 7,500 ft²)

1. 4 Gallons of water
2. 300 grams Potassium Bicarbonate (Biofert)
3. 75 ml Rapigro (from Biofert)
4. 2 tbs liquid dish soap
5. Spray (fog) plants every 2 to 3 weeks



Blister Beetle

Management Strategy:

Active in early stages of growth only (April into May). Scan entire field daily and squash all beetles underfoot.

Careful of the juices, which can cause “blistering.”



Garlic Rust



Garlic Rust (Trimmed Leaves)



Major Steps in Growing Garlic

- ▶ Cultivar Selection & Purchase
- ▶ Popping
- ▶ Planting & Amending
- ▶ Mulching
- ▶ Foliar Feed & Fertilize
- ▶ Weeding (Pest monitoring)
- ▶ Irrigation
- ▶ Harvest
- ▶ Curing

Fall

Spring/Summer


❖ Crop Rotation – Year Round

Cultivar Selection & Purchase

- What/Who is your market?
 - What's Popular?
 - Is storage life a factor?
- By weight or by bulb?
- Is ease of peeling a factor?
- Diversity can save the day
- Organic vs Non-Organic
- Clean and disease free
- How many years?

Hardnecks		
<u>Purple Stripe</u>		
B	<u>Alex's Ukrainian</u>	
B	<u>U Chesnok Red</u>	Bulk
B	<u>U Persian Star</u>	Bulk
B	<u>U Siberian</u>	
B	<u>U Tibetan</u>	Bulk
<u>Marbled Purple Stripe</u>		
B	<u>U Kostyn's Red</u>	Bulk
B	<u>U Russian Red</u>	Bulk
<u>Glazed Purple Stripe</u>		
B	<u>U Oregon</u>	
<u>Rocambole</u>		
B	<u>U Doukhobor Russian</u>	
B	<u>U French Rocambole</u>	
B	<u>U German Red</u>	Bulk
B	<u>U Killarney Red</u>	
B	<u>U Puslinch</u>	
B	<u>U Spicy Korean Red</u>	
<u>Porcelain</u>		
B	<u>U Georgian Crystal</u>	
B	<u>U Great Northern</u>	
B	<u>U Majestic</u>	Bulk
B	<u>U Music</u>	
B	<u>U Northern Quebec</u>	
B	<u>U Rosewood</u>	
B	<u>U Susan Delafield</u>	
B	<u>U Yugoslavian</u>	Bulk

Popping


- ▶ Takes more time than you may think
 - ▶ Mechanical poppers not well suited for hardneck cultivars
 - ▶ The Whack !!!
 - ▶ Sorting (large is best but all will grow)
 - ▶ Just before planting, not weeks or months
 - ▶ Careful to keep cultivars separated as cloves can look very similar
- 

Planting & Amending

- ▶ Amendments at RCF
 - Alfalfa Pellets
 - Composted Poultry Manure
 - Boron
 - Bio-Fert All Purpose
- ▶ Planting
 - Spacing
 - Dimpling
 - Depth
 - Direction (up/down & sideways)



Mulching: Weed & Moisture Control

- ▶ Keeps soil moist in hot dry weather
 - ▶ Brings earthworms to the surface
 - ▶ Adds organic matter and nutrients
 - ▶ Controls weed pressure (potentially)
- 

Straw-Hay-Grass



Pros:

- Cheap & Accessible
- Organic Matter
- Worms to surface

Cons:

- Weed seeds!
- Matted flakes may smother garlic
- Uses Nitrogen (straw)
- Weed seeds !!!

Paper Mulch

► Pros

- Apply **after** planting
- Organic
- Inexpensive

► Cons

- Allows some weeds
- Needs to be held down and kept moist until garlic emergence
- Damage from Deer
- Only effective where snowfall is regular & heavy



\$38 /roll by
the pallet
from U-Line.



Plasticulture – Black Plastic Mulch

Cable Bay Farm: www.farmtransplants.com



Photo by www.henny.ca

Proper Equipment Required



Rain-Flo 2400

Laying Mulch at Cable Bay Farm – Galiano Island. 210 feet in 2 minutes.

Photo by www.henny.ca

Planting is fast and comfortable



1200–1600 cloves per hour



Rain-Flo 1600 Transplanter.

Photos by www.henny.ca

Composted Manure

- Nutrients slowly seep into soil
- Suppresses most weeds
- Nutrients available after harvest for additional crop

Only weed in this bed on June 15th is a Morning Glory. Bed has not been weeded all season.



Wood Chips / Bark

For the best results, purchase or make wood chip mulch from a Nitrogen fixing weed tree; e.g. Alder.

Pros

- Easy for garlic to penetrate
- Easy to lay
- Available everywhere

Cons

- Uses N to decompose after incorporation



Naked

Unless you have absolute miracle soil with no weeds (or only plant a small area)... leaving your soil uncovered is not a good idea.

Then again, some people enjoy weeding...



Foliar Feed & Fertilize

- ▶ Fall amendments do most of the work
- ▶ Fish emulsion foliar feed in spring 3x
- ▶ Some farms side dress with composted manure in spring.



Weeding

- ▶ Finding the sweet spot
 - No weeds?
 - Only certain weeds?
 - 2x – 3x – 4x ?
 - Over weeding?
 - Tools or hands?
- And what if I don't weed at all?



Irrigation



RCF's 2015 Drip System



Sprinklers work fine, but can irrigate unevenly and may contribute to stem rot.

Beat the Buckle



Drip tape expands and contracts due to heat and cold up to 10" per 100' !

\$20 worth of bungee cords from Amazon.ca and problem solved.



Irrigation Rules of Thumb

- ▶ Under watering is better than over watering
- ▶ 1" per week up until scape harvest
- ▶ Cutoff irrigation 3 weeks prior to harvest

Harvest

- ▶ 2 Brown leaves
- ▶ Watch those bulbs
- ▶ Mattock, shovel, undercutter, yank
- ▶ Get them out of the sun
- ▶ Beards & Stalks
 - On (continue growing)
 - Off (ease of handling)



Curing & Processing



Curing Basics

- ▶ Well ventilated space or breezy open area
- ▶ Watch the necks for moisture
- ▶ Hang or bin
- ▶ 2 to 3 weeks before processing
- ▶ Stalks and Beards
 - On (more growth)
 - Off (easier to handle)

At RCF we hang 'em 10 per bundle, 10 bundles per string, 10 inches apart



Processing Basics

- ▶ Leave as many wrappers on as possible
- ▶ ¼" beards - 1" stem
- ▶ Tool experiments
- ▶ Check those necks
- ▶ House garlic
- ▶ Sizing/sorting



Cover Cropping

- ▶ Mustard
- ▶ Nitrogen Fixers
- ▶ Buckwheat
- ▶ Fall Rye

Three year rotation minimum with no allium crops planted in the same field two years in a row.



Mustard a Must

- ▶ **Brown Mustard**
 - Biofumigant
 - Wireworm Control
 - Nematode Control
 - Biomass
- ▶ **Yellow Mustard**
 - All of the above minus wireworm
 - **Be sure to incorporate before seed dispersal**



Nitrogen Fixers

- ▶ Legumes
- ▶ Alfalfa
- ▶ Clover

Soil Test: Add Nitrogen to bring levels up to recommended quantities.

56–110 kg/ha



Buckwheat

- ▶ Biomass
- ▶ Summer heat
- ▶ Possible wireworm deterrent
- ▶ Fast growing



Fall Rye

- ▶ Reliable
- ▶ Overwinters
- ▶ Organic Matter
- ▶ Always rotate with other crops, especially mustard



Session 3 (3:30–5pm)

- ▶ Marketing Your Garlic
 - Farmer's Markets
 - Gate Sales
 - CSA
 - Wholesale to Distributors
 - Direct to retailers
 - Value Added
 - Seed Garlic
 - ... The Bigger Vision...

Farmer's Markets & Festivals

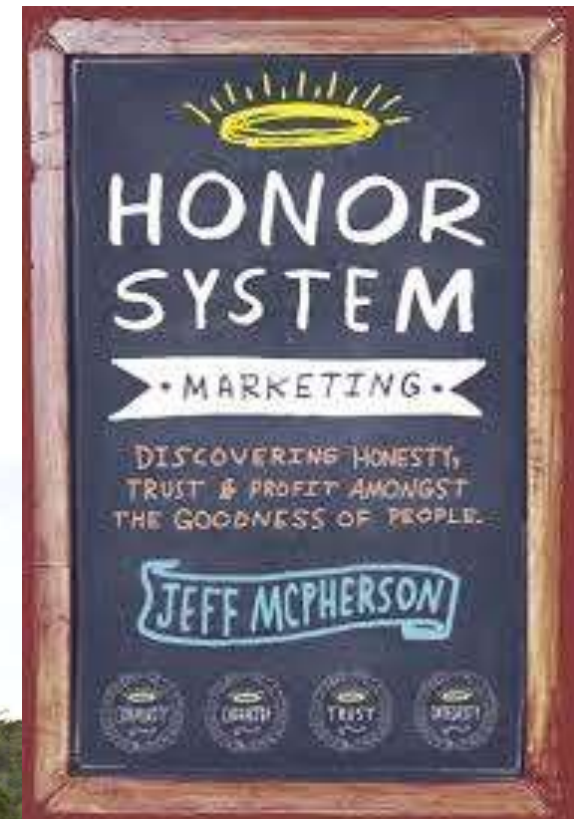
- ▶ Meet your customers
- ▶ Great exposure
- ▶ Weekly obligation

**THE
PUBLIC MARKET**
ON GRANVILLE ISLAND



Gate Sales

- ▶ Friends
- ▶ Kiosks
- ▶ Websites
 - www.foodaction.ca



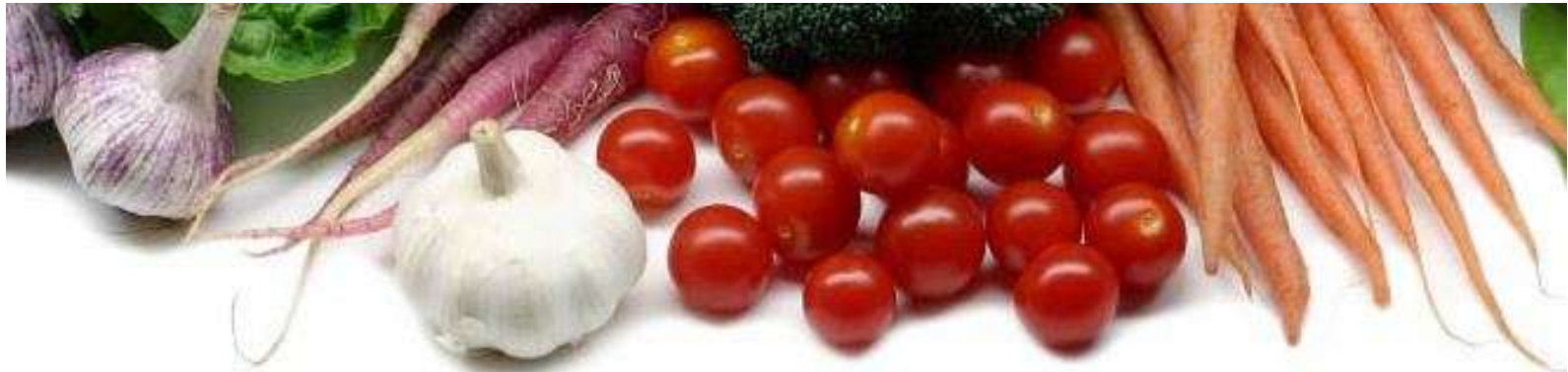
CSA

- ▶ Establish customer base
- ▶ Negotiate a hub
- ▶ Good storage facility
- ▶ Make payment simple
- ▶ Spreads out cash flow



Wholesale to Distributors

- ▶ Discovery Organics, etc.
- ▶ Wholesale Associations
- ▶ Trade shows



Pro Organics

Pro Organics is Canada's premiere distributor of high quality certified organic fresh food featuring fresh produce, dairy, dried fruit, nuts, beans, grains, flour, and select grocery lines. We source certified organic products from Canadian suppliers as much as possible and work closely with local growers to expand production. Pro Organics also imports product from the United States, Mexico and overseas, supporting organic growers world-wide. As well, we donate significant time and money to organic sector organizations in Canada and the U.S. to help increase organic production and to promote organics in North America.

Direct to Retailers

- ▶ Kin's Market
- ▶ Nature's Fare
- ▶ Choices
- ▶ Whole Foods
- ▶ Specialty Shops
- ▶ Cafés



Value Added

- ▶ Paste
- ▶ Powder
- ▶ Chutney
- ▶ Pickles
- ▶ Hot Sauce
- ▶ Vinegar Juice
- ▶ Braiding
- ▶



www.thegarlicfarm.co.uk

Seed Garlic

- ▶ Farmer's Markets
- ▶ Internet Sales
- ▶ Grower for RCF



Grindrod Garlic Festival



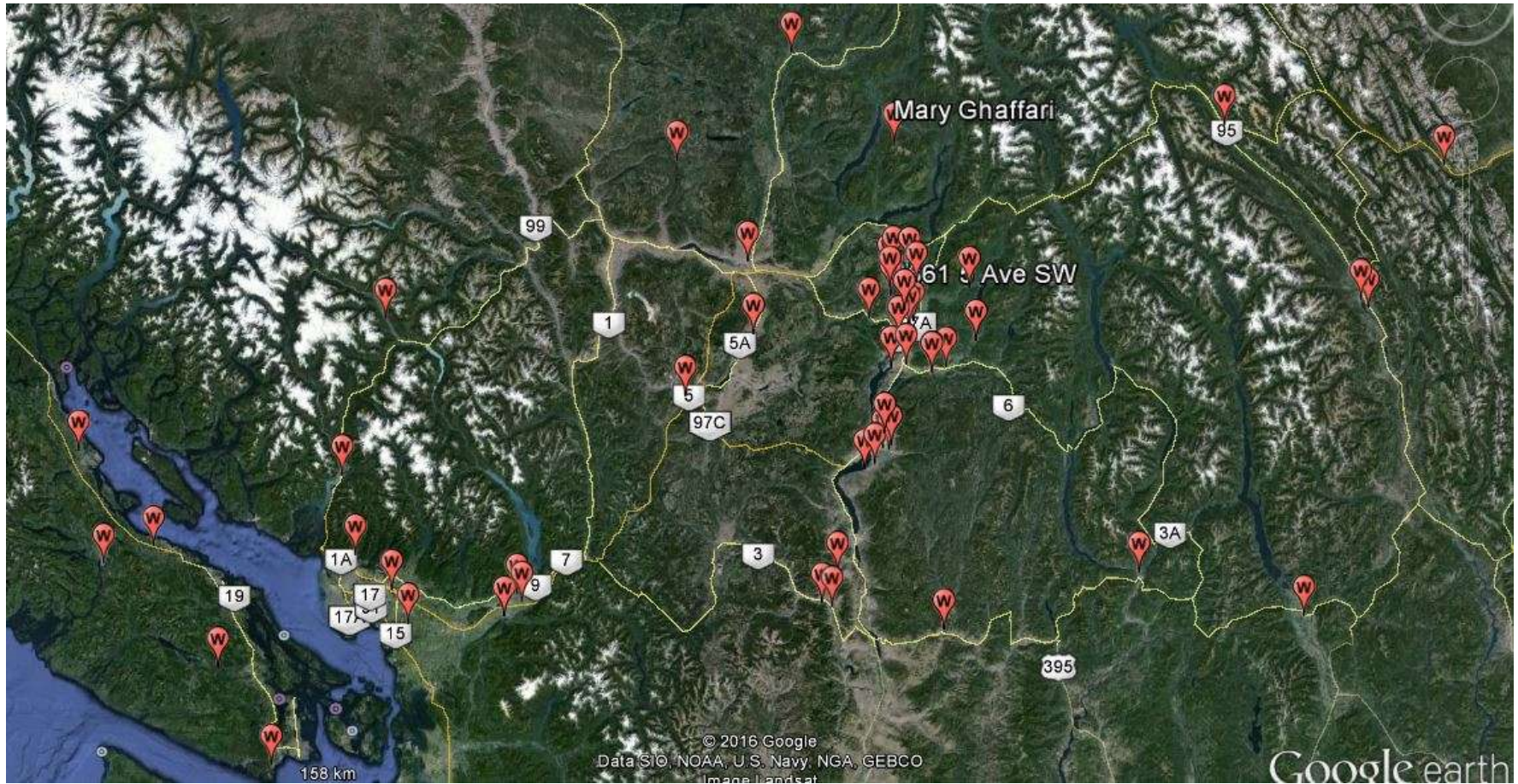
The Bigger Vision

“The goal is clear:
Domestic garlic
produced joyfully by
small scale farms and
effectively distributed
in sufficient quantity to
meet more and more
of Canada’s needs.”

Jim Capellini



Guess Who?



The End of the Beginning

- ▶ Plan to succeed...know your goals.
- ▶ Allow a learning curve, and LEARN.
- ▶ Experiment with everything.
- ▶ Know your limits.
- ▶ Mother Nature is boss: humility an asset.

