NOFA-NY Organic Breeding Survey 2004

Summary:
In January 2004 an organic breeding survey was sent out to 500 NOFA-NY members that were listed as organic crop growers. This included growers of all sizes. Of the returned surveys 72 ended up being useable. They included responses from both gardeners and commercial growers of all sizes. The point of the survey was to get information from growers to better help breeders breed for organic growers.

Growers agreed that novelty (color or shape) is only valuable if it is accompanied by other high quality attributes like flavor. Growers said they would use a hybrid if it had superior characteristics to an OP. Growers were asked if there were crops that they do not grow because of insects and diseases. The most common were brassicas (flea beetles), Sweet Corn (ear worms), Cucumbers (cucumber beetle), Eggplant (flea beetles), and potato (Colorado potato beetle). When asked what crops they have germination problems with growers noted Spinach, Carrots, Beets, peas, and onions.

The second part of the survey asked growers to list varieties they can no longer find, good varieties that need improvement, and new varieties that they would like developed. Growers had no problem coming up with dozens of varieties that they would like available again or bred to help them. These ideas should be extremely valuable as breeders continue to breed for organic growers.

Results:

Survey Respondants

Total	72
Not Growers	8
Home Gardeners	3
Small or New Growers	13
Commercial Growers	26
Unsure of scale	22

2.a Unusual colors or shapes in vegetables are valuable only if accompanied by other high quality attributes such as excellent flavor ect. Agree 57 Disagree 6

2.b Unusual colors and shapes in vegetables are valuable in their own right even if other attributes are below average. Agree 9 Disagree 51

2. c Unusual colors and shapes in vegetables are valuable even if other attributes are average.
Agree 30 Disagree 27

3. Would you use a hybrid if it had superior characteristics to an OP?
Yes 56 No 1 Maybe 3

4. Crops you wont grow because of disease or insects.

Crop	Problems
Apples	Scald 1
	Insects 1
Asparagus	Asparagus Beetle 1
Beans	Japanese Beetles 1
	Mold 1
	Downy Mildew 1
	Mexican Bean Beetle
Brassicas	Flea Beetles 9
	Aphids 2
	Cabbage Moth 2
	Root Maggots 1
Cauliflower	Blanching heads 1
	Heavy feeder 1
Celery	Heart Rot 1
Chinese Cabbage	Earwigs 1
Chinese Vegetables	Flea Beetles 1
Corn, Sweet	Ear Worm 6
	Borer 3
	Crows 1
	Nitrogen needs 1
Cucumbers	SCB 4
	Wilt 1
	Virus 1
Eggplant	Flea Beetles 5
	Low Yields 2
	CPB 1
Gooseberries	Fungus 1
Melons	SCB 2
	Low Yields 1
	Lack of Flavor 1
	Wilt 1

Mizuna	Flea Beetles 1
Mustard Greens	Flea Beetles 1
Peas	No Flavor 2
	Low Yields 1
Peppers	White worms 1
	Rot inside 1
Potatoes	CPB 3
	Leaf Hopper 2
	Late Blight 1
Pumpkins	Vine Borer 1
Radish	Root Maggot 1
Squash, Summer	Flea Beetles 1
	SCB 1
	Squash Beetles 1
Squash, Winter	SCB 2
	Squash Bugs 1
	Mold 1
	Vine Borers 1
Strawberries	Weeds 1
	Fungus 1
	TPB 1

4. b. Germination Problems

Basil	3
Basil, Thai	1
Beans	3
Beets	9
(Golden Beets)	5 (out of the 9)
Brassicas	4
Carrots	12
Celery	1
Corn Salad	2
Corn, Sweet	5
Lavender	1
Lettuce	6
Onions	7
Other Herbs	6
Peas	8
Peppers	4
Perilla	1

Potatoes	0
Rosemary	2
Schisandra	1
Spinach	16
Tomatoes	0
Vine Crops	5

5. Varieties you can no longer find.

Crop	Variety	Previous Supplier	Attributes
Ageratum	Blue Horizon	Fedco	Higher yield
Bean	Golden Rocky	Fedco, HM	Taste
	Jumbo Snap 2	Johnnys	Extremely large, tender, excellent flavor
Beet	Formandova	Fedco	Flavor, flesh and skin
	Golden	Various	Flavor and color
Broccoli	Packman	Fedco	Best side shoots
	Emperor 2	JSS	Big heads ripen over a period, side shoots
	Green Valiant	JSS	Good for late season
	Everest	JSS	Flavor and earliness
	Rosalind	Various	Flavor, texture, tender stems
	Umpqua		
	Calabreese		
	Thompson		
	Waltham		
	Saga	Johnnys	Side shoot production
Brussel Sprouts	Trafalagar	JSS	Long stalks, even sprouts with long season
	Jade Crosse	Stokes	Only variety with very high % of good cro
Cabbage	Multikeeper	Stokes	D.R.
Carrot	Artist		Every carrot perfectly shaped
Chard	Charlotte	Fedco	Color and taste
Corn	Platinum Lady 3	Fedco	Flavor, yield
	Rainbow Inca	SOC	Flavor, color, non-hybrid
	Burgundy Delight 2	Johnnys	Hi yield ex. Size and bicolor
	Xtra Tender 277A	Seedway	Sweet, tender, tip cover, yield, best ever
Eggplant	Dusty		Produces early
	Agora	Johnnys	Early producer, ex. Flavor, teardrop shape
Gourd	Wings	Various	Unique
Leek	Siegfried	Fedco	Very hardy, good size, taste
	King Richard 3	Many	Summer leek, long stem, quality
Lettuce	Plato II	Fedco	Heat tolerance
	Sierra	Johnnys	Extreme heat tolerance
	Cardinal	Johnnys	Taste and heat tolerance
	Purple Oakleaf	Abundant Life	Beautiful, flavor, not bitter, cool weath.

Melon	Pulsar	Various	Sweet, thick orange flesh, hi yield
	Harper	Ham's	Early, distinctive flavor, good size
	Flyer	Johnnys	Consistant yields of quality fruit
Onion	Buffalo	Johnnys	Early production, overwinters
Pea	Day Break	Fedco	Dark pods, easy to pick, great taste
	Alderman		Taste
	Lincoln	Fedco	Reliable, consistant, flavor
	Blizzard	Fedco	Taste and texture
	Snow Sumo	Fedco	Taste, size, vigor
Pepper	Jingle Bells	JSS	Size, color, earliness, and yield
	Orobelle	Johnnys	Gold-ripening, sweet, produces best
Pumpkin	Conn. Field	SOC	Shape, weight, color, handling
Radish	French Golden		Color and flavor
	Sora	JSS	Good holding, low heat.
Rutabaga	Joan	Fedco	Flavor, good storage without wax
Shallot	Ed's Red	Johnnys	Flavor, size, color, OP
Spinach	Indian Summer	JSS	Dependability
	Winter Bloomsdale		Overwintering
	Steadfast	Fedco	Best heat tolerance of all OP
Squash	Kentucky Wonder	Stokes	Ex. High yield, fine tex., flavor, pie
	Sugarloaf	Johnnys	good yield, long storage, high quality
	Yellow Custard	Abundant Life	Excell flavor, reliable production
	Royal Acorn	Johnnys	High yield, ex. quality
Tomato	Harbinger	Fedco	Best flavor
	Sweet Chelsea	Stokes	Non cracking, sweet cherry
	Sweet Orange	Stokes	Flavor, sweetness
Turnip	Gilfeather	Fedco	Quality at a large size
Watermelon	Charlston Grey		Taste and texture
	Quetzali	SOC, Fedco	Flavor, size, non-hybrid
Zuccini	Seneca Butter Blossom	Johnnys	Female blossom and fruit

6. Good varieties that need improvement

Crop	Variety	Positive Traits	Improvements
Arugula		Flavor, tender	Heat tolerance
Basil	Sweet Gen.	Flavor	Fusarium resistance
	Thai	Flavor, color	Fusarium resistance
Bean	Blue Lake 2	Heavy yield,taste	Insect problems, cool germination
	Northeaster	Taste	Gets too big quickly
	Maxibel 2	Good flavor	Stronger plant, disease resistance
	Royal Burg.	Color, taste	Resistance to disease

Beet	Golden 2	Color, flavor	Poor germ, small size
	All types	Taste, looks	Resistance to virus and fungus
Brassicas	All		Flea beetle resistance
Broccoli	Upqua	Flavor, tender	Heat tolerance
	Green King	Large and tasty	Better side shoots
	Decico 2	Flavor, germinates	Heat tolerance, better yield
	Arcadia	Nice big heads	Resistance to brown head rot
	Marathon	Nice big heads	Resistance to brown head rot
Cabbage	Blue/Napa	Flavor, salad	Earwig proof
Carrot	Red Core	Flavor, storage	Uniformity, good shape
	Danvers 126	Flavor, storage	Uniformity, good shape
	Mokem	Quick growing	Need stronger tops
Cauliflower	Purple	Color, plant vigor	Quicker to mature
Celery	UT 5270 Rimp	Size, yield	Alt Resistance
Celariac		Yum!	Always fails from poor germ
	Brilliant	Size, yield	Alt resistance
Chard	Ruby/Rhubarb	Color, productive	Bolt reistance, uniformity
	Rainbow	Color	More vibrant colors
	Ruby Red	Taste, yield, color	Resistance to virus and fungus
	Charlotte	Beautiful, flavor	Germination better
Cilantro	Santo 2	Slow to bolt	More bolt resist, keeping quality
Corn	All		Insect resistance
	Kandy	Vigor, taste	Dehyridize
	Sweet	Flavor	Germination of untreated seed
	Golden Bantam Sweet		Germination
Cucumber	Any		V.Wilt
	Market More	Taste, shape, prod.	Bacterial wilt resistance
Lettuce	Red Romaine	Color, texture	Bolts quickly
	Romaine	Sells well	Bolt resistance
	Ermosa/Esmerelda	Size/flavor	Bottom rot resistance
	Paris Island	Easy to grow/germ	Slow bolt, heat tolerance
	All Heirlooms	Great Flavor	Bolt reisistance
Melon	Ambrosia	Flavor, size, vines	Wilts just before ripening
	Delicious 51	Taste, earliest yield	Ripens all at once, poor holding
	Eearly Queen	Sweet Productive	Powdery mildew tolerance.
	Superstar	Sweet, productive	Powdery mildew tolerance

	Athena	Sweet, productive	Powdery mildew tolerance
Onion	Superstar	Early,large,flavor	Disease resistance and better storage
Peas	Sugar Snap	Great yield,taste	Better climbing vigor
Pepper	All		Phytophtera mold resistance
	Italia Marconi	Prolific Tasty, prolific	Earlier ripening
	Early Magra	Early	Earlier red color
Potato	Carola 3	High yield, large	Leaf roll virus resistance, scab resistance
	Yukon Gold 3	Flavor, size	Better yield, leaf hopper resistance
	Red Pontiac	Flavor, color	Scab
	French Finger	Taste, yield	Hopper resistance
	Early Blue	Taste, color, tex	More resistance to scab
	Chieftan	Taste, color, tex	More resistance to scab
	Red Gold	Taste, color, tex	More resistance to scab
Pumpkin	Any		V. Wilt, insects
	Sugar Baby 2	Flavor, color, size	Suseptable to leaf mold
Radish	White Icicle	Taste	Tends to bolt
Spinach	All	Upright	All season, heat tolerance
	Giant Noble	Flavor	Bolt resistance
	Melody	Good flavor	Better germination
	Space	Great Flavor	Poor hot weather germination
	7 Green	Tender, productive	Poor hot weather germination
	Any		Better Germination and yield
Squash	Winter		Phytophtera mold resistance
	Benning Green Tint	Taste	PM, DM resistance
	Butternut	Storage, product.	PM, DM resistance, early maturing
	Table Ace	Consistent size, yield	Better Storage
	Burguss Buttercup	Flavor, tex	Higher yield, storage
	Zephyr Summer	Flavor	Very tiny plants
	Delicata 2	Flavor, app.	Better production and consist. Germination
	Sweet Dumpling 2	Robust	Need good color and shape; better prod. & germ
	Cheese Pumpkin	Taste, Appear	Powdery mildew
Strawberry	Seascape	Good size, yield	Poor flavor unless very ripe
Tomato	Brandywine 3	Taste3	Better yield, less cracking, uniformity, leaf spot
	Cherokee Purple	Color, texture	Less cracking and better in cooler climates
	Prudens Purple	Flavor	Uniform, disease resist.,

	Amish Paste 2	Flavor, size	Disease resistance, consistency of shape and size
	Sungold 3	Flavor, Prod.	Disease reistance, Crack resistant
	Pineapple	Taste, low acid	Not good in cool, wet soil
	Heirlooms	Flavor	Appearance, yield
	San Marzano	Good Paste type	Earlier yield
	Red Pear	Pleasing contrast	Early splitting of fruit, suseptable to fungus
	Yellow Perf.2	Flavor, color, early	Tends to crack and split
	All Heirlooms	Great flavor	Blight resistance
Turnip	Purple Top	Size Yield	Turnip Mosaic virus resistance
	White Globe	Storageablity	Turnip Mosaic virus resistance

7. Varieties people would like to be developed

Crop	Desired Traits
Bean	High yield, easy to pick, insect resistance; A Purple Snap variety with disease resistance and good color, flavor and a purple been that stays purple when cooked;
Beet	A Golden variety with good germination;
Bok Choi	More disease resistant, stems more pliable for easier packing
Broccoli	Resistant to worms; Longer holding of tight heads, bolt resistance; Large heads, dark green color, slow to mature; Flavorful summer variety with excellent heat tolerance, slightly loose central head with tender stem and good side shoots; OP romanesed type (like minaret) in purple, white;
B. Sprout	Aphid resistant; DR and low fertility needs for consistant yields;
Cabbage	D.R. consistant heading of OP
Cantelope	Better flavor, shorter season, Early, long-picking season, insect resistant when ripe, harder rind; Early sweet, productive, resistant to cracking, resistant to cuke beetles, hard shell;
Carrot	Red carrot with good color and texture; Medium size (7-8”) with strong tops that germinate quickly, darker orange, sweet crisp but not brittle; Resistance to rust fly;
Cauliflower	Self-blanching, heat tolerant, OP, flavorful, tender, large, dense head;
Chard	That doesn’t brown blister;
Corn	Resistant to worms; Flint variety that is lodge resistant, high yield, higher protein with complete amino acid profile; Sweet corn variety that matures early in cooler climates and will germinate in cool damp soils without being treated; Sugar enhanced variety, early maturing for Northern NY
Cucumber	Good sweet, non-bitter, burpless, wilt resistant and cucumber beetle resistant; Taste of Aria with higher yields and multiple disease resistance esp. to bacterial wilt; varieties with more vigor toward the end of the season;
Eggplant	Shorter season; Good taste like Rosa Bianca with more reliable yield; Reliable cropper, flea beetle resistant, earlier; reistant to flea beetle, early tasty; Resistance to CPB; any that can deal with windy situations without covers;
Ginger	Larger roots than wild and winter hardy

Lettuce	Longer growing time before becoming bitter; Dark green, upright, loose leaf with good germ. And consistant growth pattern while slow to bolt; Non bolting in heat of all types, romain, bib, or leaf;
Melons	Good sweet taste, melon to melon uniformity in sweetness; Resistant to wilt, produce sweet flavored melons; A Musk melon variety with wilt resistance; Tasty short season bush variety with flavor , small size; Musk melon that is quicker growing and sweeter; Watermelon smaller, round type tastes better; Muskmelon type that is sweet, non-splitting, resistant to powdery mildew, early enough for Western NY; Similar to "Flyer" DR, early season hi yield exc quality but OP;
Onion	Salad or cooking onion that sizes up well and is resitant to botrytis and other diseases; sweet mild, longer storage than Walla Walla;
Peas	Better tasting, more production; Snow pea variety with consistently earlier ripening than Oregon giant, for use as an early crop, should have good flavor, good yields, dwarf size so staking is optional, germinates and grows well in erratic weather, does not need to last long into season as later varieties can take over; A Sugar Snap that is dependable not so rampant that wire/staking is nec. And prolific bearer;
Pepper	Red, yellow pepper resistant to white worms inside; Bell type that is a reliable cropper, cold tolerance; Any variety with a short season; A Frying variety that ripens green to yellow with good yield and resistance to blossom end rot; Sweet OP variety, early maturing, red, orange, yellow, suitable for stuffing, large and uniform shape, very sweet, want to grow without plastic tunnel; Bell type with earliness, productiveness, four shoulder, more cold hardy, any color, very sweet; How about a Colored pepper orange, yellow, purple, that is productive in the Northeast; less rot on the vine; any that can deal with windy situations without covers; Bell variety with earliness, productiveness, four shoulders, cold hardy, any color, very sweet;
Potato	Yellow flesh resistant to leaf hopper with good buttery flavor; Creamy white or yellow with high yield, resistant to leaf roll virus and scab; A red skin, yellow flesh with leaf hopper resistance; High yield, resistance to CPB, TPB, and flea beetles; Resistant to scab and scurf; Baking variety that gets big in heavy soil; Yukon variety but better yield and no blister; Yellow variety that is flavorful, productive, resistant to hopper and blights; Purple or Blue variety that is flavorful, moist, productive, resistant to hopper and blights; work on Carola since its so good to start with; improve resistance to CPB, leaf hopper and late blight;
Pumpkin	Large Jack-O-Lantern with strong handle, good shapes either round or tall oval, bright orange, easy to clean;
Soybean	Longer standing at ripe stage; Edible pod or 3-seed, 70 day, well filled out beans;
Spinach	Slow bolt, upright growth, savoy or flat, resistant to CMV wilt; Good for several cuttings;
Strawberry	Cold hardy, blossom mid season to avoid frost, yield uniform berries, resistant to TPB, good flavor; Mid to Late season that has very good traditional taste, good texture, but not easily damaged and resistance to gray mold;
Squash	Patty pan type with delicate skin and flavor but PM tolerant; Butternut variety that is less attractive to cuke beetles; Short season Winter variety with flavor and storageablility; Summer variety with compact plants, easy to harvest, tasty and prolific; Patty Pan variety with resistance to squash beetle, any color, good flavor, less tendency to be pithy at larger sizes; Winter and Summer squash with good exterior color and

	flavor, resistant to squash bugs and Cuke beetles; Winter variety similar to Sugarloaf, hi quality dry sweet flesh with exceptional winter storage; Acorn variety with tough black-green skin and sweet orange flesh on compact plants; Butternut variety that is medium size with less vine;
Tomato	Shorter season with great taste and texture; Pink variety like Brandywine but stronger plants, less cracking with same great taste; Pear Cherry with good flavor; Striped variety that isn't too big; Sauce type, quick to ripen, no cracking; Late blight resistance; Like Sungold, small gold cherry very sweet and flavorful very early, crack resistant; Black variety without cat-facing, needs to be improved for storagability and shipability; Have flavorful early varieties; Medium size fruit, excellent taste, crack and catface resistant, OP;
Turnip	A White variety with taste similar to oriental turnips, but with resistance to nematodes;
Other	Lycium chinensis with improved berry flavor, larger size and earlier

Part II

Major Insect and Disease Problems

Crop	Diseases		Insects	
Basil	Rot on Stems 1		Japanese Beetles 1	
Beans	Mildew 2	Leaf Blight 1	Japanese Beetles 3	Mex Bean Beetle 2
	Mold 1	Root Rot 1	Leaf Beetle 1	Flea Beetle 1
			TPB 1	
Beets	Leaf Spot 1		Borer 1	
Brassicas	Center Rot 1	Ricing 1	Flea Beetle 24	Cabbage Moth 8
	Mildew 1	Club root 1	Aphids 4	Leaf Miner 1
	Yellow leaf 1	Fungus 1	Root Fly Maggot 3	Loopers 2
	Head Rot		Wireworms 3	Diamond Moth 1
Carrots	Rust 1		Root Maggot 3	Flea Beetles 1
			Rust Fly 1	
Lettuce	Bottom Rot 2	Tip Burn 1	Slugs 2	Flea Beetles 1
			Hoppers 1	Snails 1
			TPB 1	
Onions	Neck Rot 2	Sour Skin Fungus 1	Thrips 6	Onion Maggot 1
	Mildew 1	Botrytis 1		
Peas			Aphids 1	
Peppers	Molds 1	Brown Rot 1	Slugs 1	Eur. Corn Borer 1
	Photyphora 1			
Potatoes	Blight 3	L. Blight 3	CPB 17	Hoppers 12

	E. Blight 2	Scab 2	TPB 3	Flea Beetle 2
	Rhizotonia 1	Leaf Roll Virus 1	Thrips 1	
Spinach	Leaf Mold 1	White Rust 1	Web Worm 1	Flea Beetle 1
	CMV Wilt 1	Fungi 1		
Sweet Corn			Ear Worm 6	Borer 5
			Fall Army Worm 1	Worms 1
			Raccoons 1	Crows 1
Tomatoes	E. Blight 5	Bloss. E. Rot 3	Aphids 1	Slugs 1
	Wilt 1	Rhizoctonia 1	Tomato Horn Worm 1	Cutworm 1
	Anthracnose 1	Leaf Blight 1	Green Worms 1	Loopers 1
	Septoria 1	Fusarium 1		
	Black Spot 1			
VineCrop	Mildew 5	Powdery Mildew 10	Cucumber Beetles 31	Squash Bug 13
	Bac. Wilt 4	Fungus 3	Vine Borer 7	Squash Beetle 2
	V. Wilt 2	Gummy Stem Blight 2	TPB 1	Flea Beetle 1
	White Mold 1	Downy Mildew 1	Spotted Cuke Beetle 1	Col. Pot Beetle 1
	CMV 2	Mold 2	Hoppers 1	Aphids 1
	Fusarium 1	Damping Off 1		
	Photophora 1	Anthracnose 1		
Other				
Arugula			Flea Beetles 1	Aphids 1
Asparagus			Asparagus Beetle 1	
Celery	Leaf Blight 1			
Cilantro			TPB 1	
Eggplant			Colo. Pot. Beetle 3	Flea Beetle 4
Garlic	Fusarium 1			

Part III Comments

- Develop vegetables for heat and frost resistance.
- Increase yieldes at both ends of the year.
- There is east German research on leaf roll virus resistance but that research was given up after the German unification.
- All cultivars should have resistance to neo liberal Globilization Disease.
- Develop breeds that do better in this climate and that are easier to save.
- Flavor and Appearance are very important to our customers.
- Grow the old variety of vegetable and stop trying to alter everything just to make someone rich. Leave things the way God made them.
- Breed for taste too!
- Organic nutrient management may also be a selection factor, not just higher pest and disease pressure.

- Flavor and consistency of vegetables in the most important to our customers.
- Vegetable plants with good vigor and fast germination seem to fair better against all the things that go wrong later.
- Some alleopathy in all the veggies and of course disease and pest resistance.
- There is nothing "wrong" with hybrids. The process just hasn't been taken far enough. Dehybridize your hybrids.
- Yield is important! Plant vigor is important especially from being knocked around by cultivation. Also heat tolerance.
- Would like to see more open pollinated varieties available in all groups, especially heirloom varieties.
- We grow just for processing. The processor determines the characteristics that they want.
- Long harvest period for broccoli (side shoots) and peas . Regrowth for lettuce, cabbage, raddichio. These could lessen the need to till and replant and might allow better intercropping.
- Ability to save our own seed would be nice-potatoes, beans, peas, toms, lettuce which could be developed to self-sow.
- Heirlooms are useful but they really are an upscale marketing ploy. Farmers aren't always good marketers. Lets get some good looking, tasty, conventional looking crops.
- Regional adaptability in Northeast, heavy soils cool to cold springs, short season.
- Of the over 400 varieties of vegetable seed we grow, we use only 2 hybrids because the flavor is so outstanding that our CSA member and customers demand it and we have not found an open –pollinated variety to compete.
- Recognize the different needs of large and small scale growers. For small growers flavor, texture, smell are more important than large yields, uniformity in ripening and size. Qualities like resistance to wilting in post harvest that are a real plus for small growers with local markets verses shipping qualities for large "corporate organic" growers. It would perhaps be useful to consider four groups: fresh, local seasonal growers; restaurant growers; large growers for supermarkets, health food stores, export; growers for processing.
- Organic farmers want to have the very best varieties of all vegetables. They have to bee sweet, flavorful and decent looking. If we have to buy 100% organic seed in the future and the only seed available is for OP bland, non descript looking vegetables, which are 20 days later than their sweet, attractive, hybrid counterparts, how can we compete? Organic products will be avoided because people equate taste and appearance with healthy products. We would lose our repeat business.
- The main problem I see is the availability of organically produced seeds at this time. We also need to maintain the diverse amount of varieties already out there, ie heirlooms.
- Theres a lot of great varieties out there-find out which are the best and work with them. You've got the right idea. We need to have 100% organically grown seed available for 2005. We'll have to choose how the seed is produced over our preference for varieties.
- I use hybrids with P.R. I would prefer all OP crops, mainly due to genetic diversity and extended harvest periods mostly due to diversity in maturity length.
- I need dependable production in varying weather and soil conditions. Many varieties on the market only do well when conditions are perfect for them. 50 % of top production every year beats 100% one year out of five and 10-79% the rest of the time by a long shot. I need

this combined with top eating quality: flavor and texture. Flavor “acceptable to Heinz” is not good enough to win over market customers with. Excellent appearance is a plus, but second to the above two. Some customers like novelty, others don’t, so odd colors, shapes are nice to dress up the stand, but standard appearance is good also.

- Develop varieties which exhibit preferred generally expected characteristics: taste, moisture content, texture, aroma, skin and flesh color. Etc. of that variety instead of novelty varieties. Example: a quick growing, fine headed, dark blue-green broccoli head, averaging 6”-8” diameter and .5 to .75 lb, rather than red or purple heads.
- Breed for flavor.
- Find and use old varieties that perform well under various conditions.
- I would say I always try anyway even when we have a lot of problems. The most frusterating insect problem we face is flea beetles. In a short time they can demolish crops for market. Fabric now covers them but it always seems a deer runs through the covers causing issues. Pyola oil has helped but my understanding is that some of the canola oil maybe produced with GMO seed creating another issue.
- My market customers are picky, looking for flavor and beauty. Anything plant breeders can do to improve existing varieties and develop new ones is appreciated. I feel that on our end we need to find the varieties that work well where we are which certainly brings up the issue of saving seed, which shame on me, I have not done. I hope to pick one crop this year and do that. Of course we could never save everything, not enough hours in the day for that. When I choose my varieties, I pick what I’ve had good experience with and always try something new to me every year. Breeding varieties that thrive under organic methods, high organic matter content of soils, organic fertilization etc.