

Vegetable Garden Basics: From wish-list to harvest A workshop

I. What do I need to grow food?

A. Sun

1. No shade or late afternoon shade only
2. +6 feet from wall if on north side of building, more if 2 story
3. +10 feet from widest tree branches
4. No pesticides used nearby, no regular engine exhaust

B. Loose soil in pots or in-ground:

1. Water drains through 18" depth within hours
2. Even a tiny space or a few pots OK but a great start is 150 sq. ft. in one or several spots

C. Plants (seeds)

Farmer's market, garden center, greenhouse

D. Water

1. Easy to reach the area with a hose, or
2. Irrigation system (trickle/drip is wonderful!) or
3. Barrel and bucket close by

E. Realistic expectations

1. USDA estimated average family can save \$700 -\$1,000 per year by growing a garden
2. Fresher, higher quality food possible, plus therapeutic exercise and family/community activity
3. It *is* work, there *will be* problems
4. Try it a year before spending money on special tools, materials

II. What do I do first?

A. Decide where you can garden, home or community plot

1. On a gentle south, east or west-facing slope is great
2. Arrange easy access to water
3. Remove whatever is growing there, roots and all
4. Loosen (don't pulverize) soil
 - a) Fork, not tiller
 - b) Or tiller just once lightly
5. Check how well water drains out of an 18" deep hole; raise bed if takes +12 hours

B. Choose your crops

1. What you/your family will eat
2. What will grow here (see page 4)
3. Plants from families that haven't been grown in that ground during past 3 years
4. What will be ready at various times, or you can preserve (freeze or can)
5. As many /as long a row of each crop as food you want

See page 4: Plants needed to provide listed pounds = # of row feet ÷ spacing between plants

C. Buy plants or seed

1. Seed is fun but not always inexpensive as it seems
 - a) Sow it where it will grow, need to thin/ accept some loss
 - b) \$ can add up if you equip an indoor-growing area to start seed early
2. Don't buy until it's time to plant (April 1, April 15, May 15, June 10 -- see page 4)
3. Choose the best plants or seed
 - a) Varieties that are what you expect and need
 - b) Varieties that are disease resistant
 - c) Individual already-started plants that are stocky, sturdy, pest free
 - d) Seed from a reputable source (Baker's Creek, Fedco, Johnny's Selected, Seed Savers Exchange, etc.)

D. Plant!

1. Each type of plant at right time, right spacing (see page 4)
 - a) Set plants at same depth as grown in pot; tomatoes can be an exception/ deeper
 - b) Water in each plant or row as you finish it
2. Seeds in rows or blocks per package direction
3. Keep soil moist, like wrung rag
4. Work organic form fertilizer into soil alongside planted row
5. Mulch to cover bare soil but not against plant stems or over seed rows
6. Pluck or hoe weeds

III. What care will my chow garden need?

A. Water it

1. Keep the soil evenly moist, never dry below the top inch, never sopping
2. Check how often that bed or pot needs water:
 - a) Water well at base of each plant or with sprinkler until 1" tall can fills
 - b) How many days until dry? Check soil by feeling 3" down: Cool to touch = moist

- c) If 1" of water lasts 5 days, great; if dries quicker, apply more often but less than 1" each time
- d) Re-apply water as soil dries down
- e) Adjust for higher water use: windy days, fast growing or bigger plants
- 3. Try to water only the plants, not the weeds or disease:
 - a) Best: Pour, shower, drip or trickle at plant bases
 - b) If overhead sprinkler, don't make it a habit to water in evening (leaves can't dry)
 - c) If no rain for long time, shower the plants
 - d) Individual water reservoirs for large plants are practical: Leaky bucket, upended bottle...
- B. Weed it:
 - a) Weeds use up water, block air, shelter pests
 - b) Hoe or pull often
 - c) Herbicides are counter-productive
- C. Mulch helps with watering, weeding
 - a) Leaves, straw, shredded paper, sheet paper, coffee grounds, cocoa hulls
 - b) Plastic if removed annually
 - c) No wood chips, and no bark unless partially broken down
- D. Protect it: Every living thing likes to eat
 1. Don't expect perfection!
 2. Consider fencing the area to exclude large varmints, or trap and remove them
 3. "Hot caps" on cold nights
 4. Visit plants regularly, look for off-color leaves, slower-growing individuals, distorted growth
 - a) "Shake hands" with plants - look under leaves
 - b) Wash (forceful spray, soapy water), pluck (take off bad leaves), squish (bugs) rather than apply pesticides
 - So many more helpful insects and good fungi than bad, but pesticides hurt all
 - Even the "natural" pesticides can have dangerous effects
 - c) Treat each type of plant as individual; they do *not* share most problems beyond the family!
 - d) Use bountiful resources: Extension hot line, www.msue.msu.edu, area Master Gardeners, library, Internet
- E. Keep plants off the ground, off each other
- F. Fertilize as needed. Fertilize the *soil* not the individual plants. Not "tomato food" for this, "rose food" for that
 - a) MSU Extension soil test is a great value, tells you which fertilizer your soil needs
 - b) Natural organic fertilizers best; liquid best during summer (fish emulsion, kelp, etc.)
- F. Thin it, harvest it, enjoy it!

Choice annual edibles: Michigan (SE: ave.185-195 day growing season, ave. last frost 5/12, first freeze 10/9, 1.5" to 3" rain per month)

crop	family	start seed in-doors	set out/sow, for <u>summer</u> crop - fall crop	spacing between plants x rows	days to harvest	yield per row of given length	problems	ornam. relatives	
peas	legume	4/1	4/1 - 5/15	1" x 8"	70	5 lb/ 25'	mildew, wilt, pea curculio	sweet pea, locust tree, baptisia, true clover, peanut	
beans		5/1	5/10 7/4	2" x 24"	55	30 lb/ 25' pole, more	leaf spot, aphids, bean beetle		
broccoli	mustard	4/ 15	4/15 7/1	12" x 24"	70	20 lb/ 10'	flea beetle (leaf, early), aphids, cabbage looper, cabbage maggot (roots, summer) aphids, slugs, clubroot	kale, collards, rock cress, candy tuft, money plant, kohlrabi	
cauliflower		4/1	4/15 6/20	12-18" x 24"	75 90	15 lb/ 10' 7 lb/ 10'			
Brussels sprout				4/1 Aug	1" x 12"	30	bunch/1'		
radish				4/15	2" x 18"	30, 60			flea beetle flea beetle, cabbage maggot
turnip lf, root									
lettuce, leaf -head	daisy	4/15	4/15 - 8/10 4/15 - 8/1	4" x 12" 12" x 18"	45 70	5 lb/ 10' 1 head/ 1'	aphids, slugs, cutworm	daisy, aster, Joe Pye, <i>Liatris</i> , many	
spinach	goosefoot		4/1 - 6/15	3 x 18"	50	10 lb/ 25'	aphids, harlequin bug	beets, chard	
squash	cucurbit	5/15	6/15	36" x 60"	90	10 lb/ 10'	squash bug, squash vine borer, mildew, cucumber mosaic, wilt, scab, cucumber beetle	wild cucumber	
cuke/zucchini		5/10	5/20 - 6/15	12" x 48"	60	15 lb/ 10'			
pumpkin			5/20 - 6/15	36" x 60"	90	50 lb./ 50'			
waterm/cant		5/15	6/10	30" x 48"	90	10 lb/ 25'	anthracnose, leaf spot		
tomato	night-shade	5/15	5/15 - 6/10	18" x 36"	80	10 lb/ 10'	verticillium & fusarium wilt, nematodes, tobacco mosaic virus (V, F, N, T), early blight, cuc. mosaic, leaf spot, fruitworm, hornworm, potato beetle, spider mite	petunia, nicotiana, nierembergia, datura	
pepper		5/15	5/20 - 6/15	18" x 30"	75	6 lb/ 10'			
eggplant		5/15	5/20 - 6/1	18" x 30"	70	10 lb/ 10'			
potato			4/15 - 6/1	12" x 30"	90	10 lb/ 10'			
carrot	umbel	4/1	4/20 - 7/1	2" x 15"	65	10 lb/ 10'	parsley worm (black swallowtail btrfly)	parsley, Qu Ann Lc, dill, celery, bishops weed	
celery			4/20	12"	90	1 head			
sweet potato	morning glory		6/1	12" x 30"	115	10 lb/ 10'	wilt, nematodes, scurf, pox, stink bugs	morning glory	
okra	mallow		5/20	12" x 36"	60	10 lb/ 10'	Japanese beetle	hibiscus, hollyhock	
corn	grass	5/10	5/10 - 6/20	10" x 30"	80	5 doz/ 50'	corn earworm, borer	grasses	

Woody and perennial edibles and herbs: Michigan (USDA hardiness zone 5)

crop	family	new plants: time/ notes	min. space	harvest time	yield/area or plant	problems	ornam. relatives
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Edible perennials, biennials ("Vegetable": Usu. herbaceous/ non-woody and grown for food. Vs. fruit, herb/spice; grain grown for seed)

chard	goosefoot						beets, spinach
asparagus	lily	3/10 - 4/30	12" x 36"	2 yrs.	8-12 spears	asparagus beetle	daylily, hosta, hyacinth, <i>Liriope</i> , Solomon seal, toadlily, tulip
garlic		4/1	3" x 15"	140	varies	bulb fly	
onions		4/10	3" x 15"	100	1 lb/ 1'		
rhubarb	buck- wheat	4/1	36" x 36"	2 yrs.	3-4 lbs.		kiss me o' gdn gate, lady's thumb, knot weeds, weed dock
sorrel		hardy perennial	12"	spring & fall			
Jerusalem artichoke	daisy	hardy perennial	3'	any	1 qt, tubers	runs amok	mum, aster, yarrow, marigold, zinnia
burdock		biennial	3'	fall	1 root	self sows	

Soooo many fruits! ("Fruit": Edible plant's fruit usu. produced on tree, shrub or woody vine. Few exceptions; e.g., strawberry.)

grape	grape	4/1 - 5/30 2 yrs. to crop	48" x 48"	fall	+10 lbs.	birds, Japanese beetles, aphids, leaf spots, twig blight	VA creeper, porcelain vine
raspberry	rose	4/1 - 5/30 2 yrs. to crop	30" x 36"	Aug- Sep or everbea	1 qt/ plnt	cane borer, Japanese beetle, virus	rose, <i>Cotoneaster</i> , <i>Aruncus</i> , blackberry, ninebark, <i>Filipendula</i> , flowering almond, mt. ash, <i>Potentilla</i>
strawberry		4/30 - 5/30 1 year to crop	12" x 36"	June or fall	1 pt - 1 qt./plant; renew after 3rd crop	slugs, birds, animals	
apple		need x-polli var. or crab.	varies 10-15' dwarfest apples; stone fruits 15- 20'	fall	1-8 bu.; 4-8 yrs. to crop	many insects, animals like rose family plants and fruit diseases - apple & serviceberry: scab; pear & quince: fire blight; peach/apricot: brown rot/gummosis	
pear							
cherry		sweet, need x-pollinator			cherry, serviceberry 50 lbs.; peach/plum 2-5 b u., quince 1 bu. 3-6 yrs. to		
peach, plum, apricot		plum needs x-pollin					
serviceberry	self fertile	20'					

quince		self fertile		fall	crop		
elderberry	honeysuc	fast crop!	8'	August	5-10 lbs.	birds, cane borer (regularly prune to renew)	<i>Viburnum , Weigela</i>
mulberry	mulb.	males and weeper fruitless	15' x 15'	August	to 10 bu.	birds	figs, osage orange
blueberry, lingonberry	heath	3 yrs. to good crop	5'	Aug-Sept.	3 yrs 1 pt. 10 yrs 1-8 qts	birds!	rhodo., azalea, mt. laurel, heather
currants, gooseberries	currant, saxifra.	3 yrs. to good crop	5'	Jul-Aug	3-5 qts.	birds; rust	
nuts: walnut oak, chestnut, hickory, hazel/filbert	beech	plant in fall start small for fastest growth!	varies	fall	after 10 yrs. 4-10 lbs.	aphids, mites, blights, leaf tiers. For these and all fruit/ nut plants: avoid control issues by siting the trees well and keeping them growing vigorously	
	walnut						butternut
	birch						alder, hornbeam

Herbs: Woody, perennial and annual ("Herb": Grown for seasoning. Spice usu. tropical/sub-tropical.)

lemon balm, mints, sage, oregano, savory, thyme	mint	hardy perennial	8-24" depends on degree of harvest/ clipping	all summer	varies	four lined plant bug	<i>ajuga, bee balm, Coleus, Lamium, obedient plant, Russian sage, salvia</i>
bay, rosemary lemon verbena		tender perennial					
basil, perilla		annual					
tarragon	daisy	perennial	18"	all summer	varies		artemisia, thistle, coneflower, many
dill, parsley fennel, lovage	umbel			all summer		parsley worm (black swallowtail btrfly)	carrot, celery, Queen Ann Lc,

Try it: Plan a Garden!

Choose your crops (Assuming a site good for anything: full sun, loose soil that's not soggy)

1. What will you / your family eat?
2. Will you graze a little at a time or do you want a serious harvest to preserve / freeze / store?
For a little at a time: Select a variety AND aim for a mix of crops that mature at various times
Serious harvest: Select a few, make sure you plant enough of each.
Check the chart: How long a row of each crop do you need to provide the pounds you want?
Plants needed to provide listed pounds = # of row feet ÷ spacing between plants (5' ÷ 1" = 60 pea plants)
3. Rotate crops
Have these plants been grown in that ground during past 3 years?
Check the chart: What family is the plant? (2nd column "family") Move a family's plants to new space.
Is there room to place a repeat plant where it and its family have not grown recently?

Decide plants or seed

Seed is fun but not always inexpensive as it seems

- If sown where it will grow, you need to thin and to accept some loss
- If sown indoors: \$ can add up as you equip an indoor-growing area to start seed early

Plants: Don't buy until it's time to plant (April 1, April 15, May 15, June 10 -- "set out /sow" column 4)

Choose varieties...

- Varieties that are **what you expect** and need
- Varieties that are **disease resistant**

... **and healthy** plants or seed

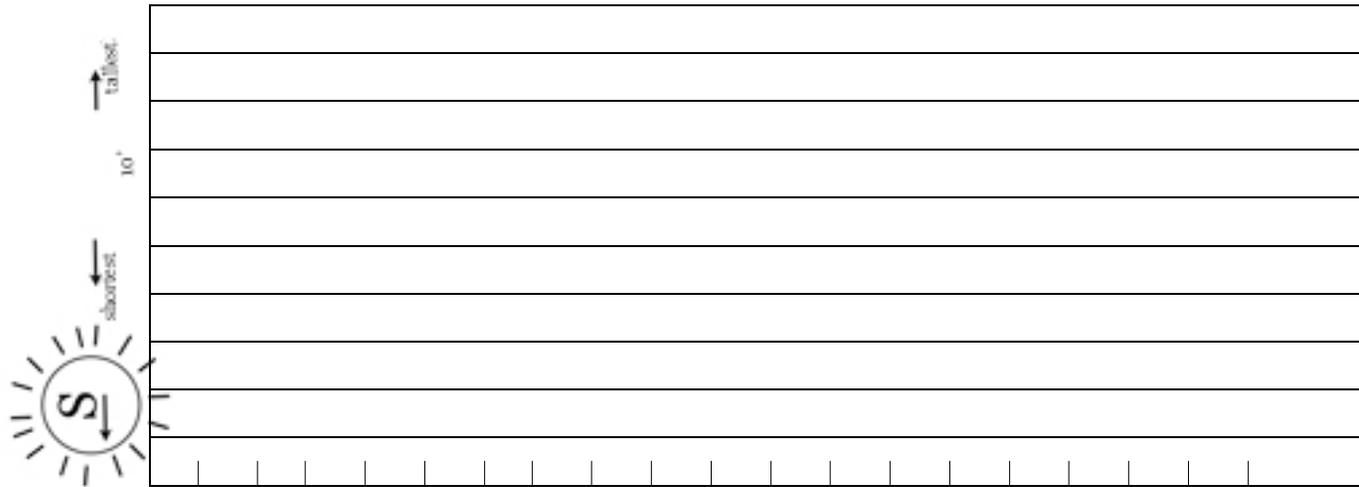
- Individual already-started plants should be **stocky, sturdy, pest free**
- Seed from a **reputable source** (Burpee, Ball, Cook's, Park's, Seed Savers Exchange, etc.)

Get the bed ready by your earliest plant-out date: _____

- Remove whatever is growing there, roots and all
- Loosen (don't pulverize) soil. Use a fork, not tiller; or tiller just once lightly
- Check how well water drains out of an 18" deep hole; raise bed if takes +12 hours
- Soil test done? Use the prescribed fertilizer. Or add a balanced complete slow release organic

Plan your garden: Crop	family	Amount you want	Space needed	Desired harvest date	Start date	Special seed-starting and plant-finding notes
Read info from chart such as page 9 <i>Grow Great Food</i> column 1, 2, etc.	Col. 2 <i>Family</i> Separate family members w/space and years.	1 lb. spinach = 1 x-large bag; 1/4 lb. string beans/serving; 1 big head broccoli = 1/2 lb.	See <i>Yield</i> col. 7	No earlier than col. 3 <i>Start</i> + col. 6 <i>Days</i> . May be multiple sowings, crops.	From seed: Harvest date - <i>Days to harvest</i> col. 6. From plants start 4 wks later.	

20'



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cauliflower		4/1	4/15 6/20	12-18" x 24"	75 90	15 lb/ 10' 7 lb/ 10'		
cabbage				4/1, Aug	1" x 12"	30	bunch/1'	
Brusls sprout				4/15	2" x 18"	30, 60	flea beetle flea beetle, cabbage maggot	
radish								
turnip lf, root								
lettuce, leaf -head		4/15	4/15 - 8/10 4/15 - 8/1	4" x 12" 12" x 18"	45 70	5 lb/ 10' 1 head/ 1'	aphids, slugs, cutworm	daisy family
spinach			4/1 - 6/15	3 x 18"	50	10 lb/ 25'	aphids, harlequin bug	beets, chard
squash	cucurbit	5/15	6/15	36" x 60"	90	10 lb/ 10'	squash bug, squash vine borer, mildew, cucumber mosaic, wilt, scab, cucumber beetle	wild cucumber
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corn	grass	5/10	5/10 - 6/20	10" x 30"	80	5 doz/ 50'	corn earworm, borer	grasses
Edible pere nials								
rhubarb	buckwhe.		4/1	36" x 36"	2 yrs.			kiss me o gdn gate, sorrel
asparagus	lily		3/10 - 4/30	12" x 36"	2 yrs.		asparagus beetle	lily, hosta
raspberry	rose		4/1 - 5/30	30" x 36"	2 yrs.	1 qt/ plnt	cane borer, Japanese beetle	rose, apple, cherry, blackberry
strawberry			4/30 - 5/30	12" x 36"	1 yr.		slugs, birds, animals	
grape	grape		4/1 - 5/30	48" x 48"	2 yrs.			VA creeper
garlic	allium		4/1	3" x 15"	140			daffodil
onions			4/10	3" x 15"	100	1 lb/ 1'		