

SOUTH SOUND FOOD GARDENER'S CALENDAR 2014



**From Black Lake Organic
Nursery and Garden Store**

“Organic Gardening Supplies for the Maritime NW”

**4711 Black Lake Boulevard S.W.
Olympia, WA 98512
(360) 786-0537 www.blacklakeorganic.com**

SPRING/EARLY PLANTING CHART (MARCH THRU JUNE)

Family	Vegetable/Crop	Cult Group	Seed Depth	Plant Spacing	Row Spacing	Temp Group	Sowing Period
Amaryllidaceae	Onion	I	1/2"	4"	18"	Cold	4/5-6/1
(Alliums)	Leek	I	1/2"	4"	18"	Cold	3/1-5/15
	Shallot (B)	I	1/2"	4"	18"	Cold	
	Garlic (B)	I	4"	4"	18"	Cold	
Brassicaceae	Cabbage	II	1/2"	24"	24"	Cold	4/15-6/15
(Brassicacae)	Broccoli	II	1/4"	24"	24"	Cold	4/1-7/15
	Cauliflower	II	1/2"	24"	24"	Cold	4/15-6/15
	Brussels Sprouts	II	1/4"	24"	24"	Cold	5/1-8/1
	Chinese Cabbage	II	1/2"	18"	24"	Cool	5/15-8/15
	Collards	III	1/2"	18"	24"	Cold	7/1-8/1
	Kale	III	1/2"	18"	24"	Cold	5/1-7/15
	Kohlrabi	IV	1/2"	8"	18"	Cold	4/1-8/10
	Radish	IV	1/2"	2"	6"	Cold	3/1-8/15
	Turnip	IV	1/4"	2"	12"	Cold	5/1-8/15
	Rutabaga	IV	1/4"	8"	18"	Cold	6/1-7/15
Umbelliferae	Parsley	IX	1/2"	8"	18"	Cold	3/1-6/1
(Parsley)	Parsnip	IV	1/2"	4"	18"	Cool	5/1-7/15
	Carrot	IV	1/4"	4"	12"	Cool	4/1-7/15
	Salsify	IV				Cool	
	Celery	III	1/8"	12"	18"	Cool	4/5-6/1
	Celeriac	III	1/8"	12"	18"	Cool	4/5-6/1
	Fennel	III					
Chenopodiaceae	Beet	IV	1/2"	4"	18"	Cool	4/1-7/15
(Goosefoot)	Chard	III	1/2"	18"	18"	Cool	4/1-7/15
	Spinach	III	1/2"	12"	18"	Cold	3/1-8/15
Asteraceae	Lettuce	III	1/4"	12"	18"	Cool	4/1-8/1
(Composites)	Endive	III	1/4"	12"	18"	Cool	5/1-6/1
	Chicory	III					
Fabaceae	Pea	V	1"	1"	18"	Cold	3/1-6/1
(Legumes)	Fava Bean (Pea)	V	1"	4"	18"	Cold	5/15-7/1
	Bean, Snap	V	1"	4"	18"	Warm	5/15-7/1
	Bean, Dried	V	1"	4"	18"	Warm	5/15-6/1
Solanaceae	Tomato (T)	VI	1/4"	24"	48"	Warm	4/1-5/1
(Nightshade)	Pepper (T)	VI	1/2"	18"	24"	Hot	3/15-4/15
	Eggplant (T)	VI	1/4"	24"	24"	Hot	3/15-4/15
	Potato (B)	X	4"	12"	24"	Cool	3/1-7/1
Cucurbitaceae	Cucumber	VII	1 1/2"	4 ft.	4 ft.	Hot	6/1-6/15
(Gourd)	Squash, Summer	VII	1 1/2"	4 ft.	4 ft.	Hot	5/15-6/15
	Squash, Winter	VII	1 1/2"	10 ft.	10 ft.	Hot	5/15-6/15
	Pumpkin	VII	1 1/2"	10 ft.	10 ft.	Hot	5/15-6/15
	Melons	VII	1/2"	4 ft.	6 ft.	Hot	6/1-6/20
	Watermelon	VII	1/2"	4 ft.	6 ft.	Hot	6/1-6/20
Poaceae	Corn	VIII	1"	12"	24"	Warm	6/1-6/15
(Gramineae)	Grains	VIII					
Herbs	Various	IX					
<u>Miscellaneous</u>							
Brassicaceae	Arugula	III	1/4"	4"	12"	Cool	8/1-10/1
Valeriaceae	Corn Salad	III	1/4"	4"	12"	Cold	4/1-7/1
Asteraceae	Cress	III	1/4"	18"	18"	Cool	4/1-7/1
Tetragonaceae	New Zealand Spinach	III	1/2"	12"	18"	Warm	5/15-7/1
	Sorrel	III	1/2"	8"	12"	Cool	5/1-7/1
	Purslane	III	1/4"	8"	12"	Cool	4/1-7/1
Asteraceae	Artichoke	X	1/4"	6 ft.	6 ft.	Cool	4/1-7/1
Lilliaceae	Asparagus	X	1/4"	12"	6 ft.	Cold	5/1-7/1
Malvaceae	Okra	X	1/4"	18"	3 ft.	Hot	5/15-6/15
Asteraceae	Sunflower	X					
Polygonaceae	Rhubarb (B)	X					
Brassicaceae	Horseradish (B)	X					

Note: See Instructions on Inside Back Cover for Key and Explanations

South Sound Food Gardener's Calendar

From Black Lake Organic
Nursery and Garden Store

Introduction

We South Sounders are fortunate, indeed. Throughout the Maritime Northwest Region, stretching from Northern California to Southern British Columbia and west of the Cascade Mountains, it is possible to grow a food garden year round. To accomplish this, sowings are made in stages corresponding to seasonal windows for different crops or classes of crops. There is no one set time that the entire garden is put in at once for the whole year.

Food gardening consists principally of vegetables, fruits and herbs, which are the focus of this gardener's calendar and event schedule, but with emphasis on vegetables. Our bias is using organic and earth-friendly methods. There are approximately 50 kinds of vegetable crops one can choose for growing in South Puget Sound. Some grow best during cool periods of spring and fall or even over winter. Others are limited to single sowings or plantings during the fairly brief period of hot summer weather and can not handle the slightest freeze. Certain ones, such as tomatoes and peppers, need to be started early indoors or purchased about May as transplants.

Trying to keep all these crops and their appropriate sowing dates or periods in your head, along with other cultural duties, can get pretty cumbersome and it's easy to forget or overlook some target date or essential task. That's what this calendar, with planting schedules and tips, is designed to overcome. A special feature of this regional calendar is the two convenient planting charts on the inside of the front and back covers. We put all the region-specific essentials in one convenient place. Additionally, blank monthly calendar pages are provided for your planning and planting notes or records.

In the South Puget Sound sub-region, planting times can vary considerably in relation to the warmer Sound waters, lakes, and lowlands versus colder foothills and mountains that are generally set well back from the Sound. The difference in same climate conditions can range more than a month from sea level to mountain top. Strangely, the Seattle area, north of us, has a milder and earlier climate. Because of our topography the area just south of the Olympia airport can be unusually cold and late in spring. To simplify things, our planting schedule is geared to the lowlands, and so, should be adjusted to an earlier date if your garden is near the Sound, or to a later date if it is in the hills.

In general, our winters are mild and our summers relatively cool and dry. Most of our rainfall (averaging about 50 inches a year in the Olympia area) falls in the 6-month period from October to March and can present a challenge for getting into the garden in early spring when it is not too wet to work the soil. Jump on any dry periods that come along. In summer a reliable source of close-by irrigating water will be necessary, particularly for intensively planted raised beds. Summer mulching can help with water retention and moderation of soil temperature swings. Knowing these basics and having the details presented in this gardener's calendar, you are equipped to go forth and multiply your veggies, fruits and herbs.

Good growing, and good eating!

Gary Kline

January

January looks both ways; forward and behind. Time to review last year's garden and see what you find. Time, too, to dream and scheme for this year's garden anew... knowing seed catalogs and rack packets are due.

January is the month for PLANNING. Get out your garden books. A good guide is *Growing Vegetables West of the Cascades* by Steve Solomon. Map out your garden plot and determine its area in square footage (length times width). Inventory left-over seeds. Most are good for about 3 years, provided they have been kept cool, dry and out of the sunlight. Certain seeds, however, are good for just one year, among them are corn, onions and parsnips. Check your books or catalogs. Draw up your new seed list and make a schedule for sowing the crops you've selected. Then decide where best to put each, taking into consideration sun exposure and shade, crop height and spatial needs. This is also the time to estimate your fertilizer and lime needs, as well as availability of good compost or aged manure for organic matter application.

There is little or no sowing, either outdoors or indoors, to be done in January. Your time is perhaps best spent taking stock of your gardening tools to see what needs sharpening, repair or replacing. Might as well get that job done this month and be ready to hit the ground digging, come a dry spell along about mid-March. Such spells are few and short. It is not good to work wet soil. The ancient Chinese, renowned gardeners, advise patience.

About the Planting Charts

Two planting charts have been placed in the calendar on the inside of the front and back covers. The front chart is for the early or "spring" planted garden (March through June). The back chart is for the late or "winter" garden planted between July and October with either seeds or transplants. These charts provide quick, "generic", summary references on one page for nearly all vegetables grown in our sub-region. However, one is advised to look up each crop variety for specific instructions. Some varieties have unusual planting times.

The Object

The object of vegetable gardening is the object of eating, which is the object of life... health and happiness. It's hard to be happy if you're unhealthy. The real point of eating is nutrition.

- Gary Kline, Owner/Manager
Black Lake Organic Nursery and Garden Store

"To be well-fed is to be healthy".

- William A. Albrecht, PhD, Formerly Chairman
Soils Department, University of Missouri

"Success in gardening is attributable at least 75 percent to the soil; to its fertility and condition, or tilth". (GK)

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February

February... short, if not so sweet, marks the start of winter's retreat. So, get out and clean up that garden site, ere ye get tomato's dreaded late blight. Over the barren vegetable plot apply a half inch of compost or aged barnyard manure, and it's none too soon to spread organic fertilizers, that's for sure. In the orchard between rains, prune your fruit trees and your berry canes. Then apply dormant oil, lime and sulfur sprays. Gather up or purchase seed start media, pots, flats and trays. February is the optimum time to prune trees, vines and shrubs.

February is the month for PREPARING. It's still too early in the South Sound lowlands to sow crops outdoors. Seize upon any dry spell to remove plant residue and begin a compost pile; or you can dig the residue in along with fertilizer, lime, and compost to let it begin rotting down. If you grew an over-wintering cover crop, that can be tilled down when it reaches 6 to 12 inches height for raising organic matter content, but the above items should also be added. If your garden has been covered with a leaf mulch, these may have become a slug and mice haven and also will slow down drying and warming of the soil, so the best plan for the vegetable garden is to pull off any mulches about now and use them in your compost pile. Composting is discussed on the October and November pages.

Alternatively, you could use the leaves as part of a fertile-mulching technique on fruit trees and bushes. This technique is fully described in BLO's Gardening Information Leaflet No. 4 and given in abbreviated form on the March page. Many customers have reported dramatic results in reviving sickly and unproductive plants as well as ridding them of pest and disease infestations. This is a dramatic demonstration of the principle of health creation and protection through proper nutrition. It works for people too.

Indoors, there are a few crops you can start for transplanting out in March or April. Preferably these would be started under fluorescent lights on a 16 hour on and 8 hour off (dark) schedule. Keep the plants within about an inch of the bulbs as they grow and fertilize them weekly with a very diluted solution (1 Tbsp per gallon of water) of liquid fish or (better), fish and kelp (seaweed). Early started crops include rhubarb, celery and celeriac, parsley, chives, leeks, certain onions, arugula, asparagus, broccoli, cabbage, cauliflower, endive, and hardy types of lettuce. Move these out to cold frames or protective cloches for weather protection and improved earlier growth and production. Be careful not to allow cloches or coldframes to overheat on sunny days.

What is Organic Gardening?

“Very briefly, organic gardening or farming is a system whereby a fertile soil is maintained by applying Nature's own law of replenishing it --- that is, the addition and preservation of humus, the use of organic matter instead of chemical fertilizers, and, of course, the making of a compost pile and mulching --- Besides compost made of plant [and animal] matter, the organicist usually employs as fertilizers such substances as raw phosphate rock, dolomite, ground oyster shells, and miscellaneous ground rocks such as granite dusts and pulverized limestone [i.e., minerals].”
- Taken from the book *Organic Gardening* by J.I. Rodale (1955, pp. 11 and 33).

-Note: J.I. Rodale was the father of organiculture in America. He was a leading disciple of Sir Albert Howard of England and India, who can be credited with originating and championing modern composting and humus (organic) farming.

“Organically grown food is food:

- 1) grown without pesticides
- 2) grown without artificial fertilizers
- 3) grown in soil whose humus content is increased by additions of organic matter
- 4) grown in soil whose MINERAL content is increased with applications of natural mineral fertilizers
- 5) has not been treated with preservatives, hormones, antibiotics or other synthetic additives.”

- J. I. Rodale (1956)

March

March... gives the order to commence planting. This is the time to plant or sow your S.P.L.O.R.P.S., which are Spinach, Peas, Lettuce, Onions, Radishes, Potatoes, Strawberries, and more. March is when you can find seeds and starts or sets at your local nursery or garden store.

March is the month for PLANTING outdoors (cold and cool season crops) as well as indoors, especially for the warm season crops we call Solans (short for Solanaceae; sun lovers), the tomato, pepper and eggplant plants that go outdoors after mid-May, which is about the average last frost date. Refer to February for indoor growing tips.

By March, nurseries will have received their stock of raspberries, blackberries, blueberries, asparagus crowns, strawberry plants, and fruit trees. Plant these before May and place them in holes filled with the same soil that came out plus a little compost, perhaps peat moss, and complete fertilizer stirred in.

March is also the time... to incorporate compost, fertilizer and lime... in your vegetable garden. We suggest using Black Lake Organic's All Vegetable Mix (BLOOM No. 1) or a similar mix that also contains lime, our Maritime Northwest Complete blend (BLOOM No. 2). Also spread our Organic Lawn Food (BLOOM No. 4) on your lawn for a greener, healthy grass. When mowed, the grass clippings can be used for mulch around ornamentals, for compost making, or left in place to supplement applied nutrients. Don't apply too thickly (4 inch maximum).

March can be wet and cold. But there will also be nice, balmy days, with slanting sun's rays, when it's great to be outside witnessing the wakening of returning life... the call of robins, the opening of yellow daffodils... and keep your ears attuned for the sweet twittering of returning swallows; they mark the true beginning of spring, which other calendars claim comes on March 20th, or thereabouts.

March is a good time to mulch... not the vegetable garden, but your fruit trees and bushes (perennial, woody plants). The following is an abbreviated description of the Fertile Mulching System developed at Black Lake Organic, which has amazing beneficial effects on languishing trees and shrubs.

Ideally, you want the ground to be bare under the plant canopy and for an equal distance beyond the dripline. You want to rid your food producing plant of competition from weeds and grass. However, rather than dig them up, you can "smother" them by blocking out light using newspapers or cardboard. First, mow the grass as low as possible and rake off the clippings. Wet the ground thoroughly. Make up a brew of one tablespoon each of liquid fish, liquid seaweed, black molasses and apple cider vinegar in a gallon of water and pour on the ground (toward the outer area) and mix and pour more (as needed).

Next, spread a complete organic fertilizer (such as Black Lake Organic's Tree and Shrub mix, BLOOM No. 7; or Rhododendron/Blueberry Mix, BLOOM No. 6; or Caneberry/Strawberry Mix, BLOOM No. 8) over the treatment area at the rate prescribed on the package. Cover this with a thin layer of compost or worm castings.

Next, spread a thin mulch layer of one or more of the following: grass clippings, shredded leaves, chopped alfalfa hay, or other fine organic materials. Next comes the newspapers (thick layer) or cardboard (well over-lapped), unless not needed. Finally, cover with a coarse mulch material such as ground-up wood or bark to a total depth of four inches. Leave an open area of 4 or so inches around the trunk. Replenish fertilizers and mulch annually, or you could dig holes and insert organic fertilizer spikes about 2 feet apart in a circle out beyond the canopy and repeat annually in ever-widening circles as the tree and roots spread.

Protecting Fruit Trees

"It has long been my belief that a solution to the problem of protecting our fruit trees from both insects and fungus pests must eventually be found in the development of immunity in the trees themselves, rather than in resorting to such expedients as spraying and gassing - - - In this regard we may well take a leaf from the notebook of the physician who has learned that immunity to disease often depends more upon the condition of the patient than upon the presence or absence of disease germs."

- Luther Burbank, genius plant breeder of the 1920's, quoted in *Pay Dirt* by J. I. Rodale (1945, p. 188)

April

April is upon us... no foolin'; it's time to get toolin'. So, go sow your early root crops and your coles with round tops... you know, Kole rabi, Colo flower, Broc coli, and the one that's used for Cole Slaw. Also sow your carrots, beets and other underground treats, like turnips, parsnips and rutabaga that too often undeservedly take back seats. In general, root, leafy and cool season crops are fairly shade-tolerant, while warm season and tropical-type vegetables require full sunlight. The coles (cabbage, broccoli, etc.) are somewhere in between, but the more sun the better.

April is a month for SOWING. Besides the above roots and coles, April is also prime time to sow kale, collards, Swiss chard, celery, parsley, and fennel. You might also want to sow members of the Oriental and European greens groups. They will spruce up and spike up your salads. You can also make second sowings of the S.P.L.O.R.P.S. of March. Just be sure to use enation-resistant varieties of peas. Hold up for May on sowing cucumbers and members of the squash family as it is often too wet and cold for them to survive in the South Puget Sound Region. Remember, April is famous for its showers, and occasional snows are not unknown.

Along with promising produce springing from the ground, April brings a plethora of pest problems to be dealt with. An important part of your prevention and protection strategies is to anticipate what may be coming. So, before you even open a seed packet, it's wise to read up on all the potential pests in the seed catalogs and regional gardening guides so you can take action to head off problems or otherwise be prepared with counter measures at the first sign of trouble. Sneak a quick peek at June for notes on the role of soil fertility in pest control.

Trouble can be spelled as slugs, root maggots, cabbage worms and loopers, carrot rust fly, leaf miners and still more. The first line of defense should be physical barriers like row covers and cages. There are a number of mild, natural pest controls that contain Bt (bacteria), fatty acid soaps, pyrethrum (a flower extract), etc. and are reasonably effective; plus there are now pet and wildlife safe slug baits which contain iron phosphate as the active ingredient and sure beat hand-picking, beer traps and such.

In addition, there are home remedy concoctions you can look up in organic pest control publications and make yourself, but possibly not as cost effectively as you might initially imagine. There are a variety of natural ingredient herbicides that are fairly effective on weeds, but they also can damage your vegetable plants and lawn grasses. As yet, there is no known organic "weed and feed", so you may have to use old-fashioned elbow grease, fingers and your trowel. However, raised garden beds filled with a special soil blend can make weeding a breeze. Squanto advised sowing four times the plants needed: One for the worm; one for the crow; one to rot; and one to grow. Smart advice.

The Necessity of Minerals: The Mineral Message

"A good soil today must contain a considerable portion of minute rock particles to make it a proper medium for growing plants and to give it the necessary mineral content. Organic matter contains some minerals, but... Rocks are the main mineral suppliers. To be good, a soil must contain some organic matter [5 to 10%], but it's physical structure and lack of mineral [inorganic] elements [present] in the rock may militate against producing good [and nutritious] crops".

-Taken from the book, *Organic Gardening* by J.I. Rodale (1955, pp. 118-119)

[Bracketed words supplied by Gary Kline]

The True Cause of Disease

"It is well known that, apart from bulk, the feeding value of pasture varies in different areas, and it has been shown in recent investigations that one of the important factors determining the feeding value is the amount of calcium, phosphorus and other minerals present. Some pastures indeed are so poor in one or other of those elements that the deficiency is the **cause** of disease in grazing animals."

- Sir John B. Orr in *Minerals in Pastures and Their Relation to Animal Nutrition* (1929)

May

May be here! May it be there too! Time for those promised flowers, to follow April's unending showers. May be the month to transplant, or else to sow, the **warm** season crops, you know.

But, unless you live along Puget Sound, wait past mid-May to put corn, beans, and squash in the ground. The same be true on when to transplant, those tasty, tender solans: tomato, pepper, and the eggplant plant. If it's those starts you're looking for, check out your local nursery and garden store. Don't put them out before mid-May or you'll be going back for more. May may be thought of as the month for TRANSPLANTING.

In the South Puget Sound lowlands region the average last frost date comes about mid-May. That's the 50 percent mark! You are chancing it even then. However, the chance of frost drops off rapidly and by the end of May is only about one percent. By the end of May we should see some fairly hot days which may require watering of your plants. The best time to do watering is in early morning so the crops go into the hot part of the day in good shape and also to reduce water loss from evaporation when watering in mid-day. Where possible, apply water to the ground rather than to the foliage and use a soaker hose or drip irrigation for greatest watering efficiency. You can also apply a 3 or 4 inch layer of mulch once the crops are up 6 inches or so. First, wet the ground well then apply the mulch which will hold in water, moderate the soil temperature, suppress weeds and provide a more conducive environment to foster friendly microbes and earthworms that aid in processing fertilizing materials into plant food. All life, from microbes to man, benefits from well-mineralized soil.

If you want to get a jump start on that first-to-ripen tomato, it's a good idea to erect a trellis and some type of clear plastic protective cover in a tent-like structure that deflects wind and rain, but is also open on the ends to emit air and prevent overheating, which can happen very rapidly anytime it is sunny. Such protective covering can prevent late blight from wiping out your tomatoes in summertime.

The preceding instructions presume your garden site has already been well-fertilized. If that is not the case, you need to stir a complete, granular organic fertilizer into the soil prior to planting, or else side dress with the fertilizer and scratch it in, then water. Follow directions on the package of complete fertilizer and include some quality compost or aged manure. Supplement this fertilization practice once the crops are up and once or twice monthly through the summer with foliar sprayings of liquid fish and seaweed. Do the foliar spraying on cloudy days or very early in the day and try to spray the undersides as well as the upper surface of the foliage. Do these things and you can hardly miss having bumper crops.

Organic Matter Overdose?

"I wish to stress here that too many organic gardeners have been working to their own disadvantage and have produced an unbalanced soil. They have piled prodigious amounts of organic matter into it, and have neglected the **mineral** side. --- Too much blackness in soil, if achieved at the expense of oversupplying the soil with humus, may not be desirable. There is a point beyond which the application of organic matter in gardening may cause actual harm."

-Taken from the book, *Organic Gardening* by J.I. Rodale (1955, pp. 33,

64)

Crops Best Suited for Raised Beds*

Excellent

Roots
Bulbs
Solans

Good

Leafy
Legumes

Fair

Coles
Cucurbits (Vines)

Crops Best Suited for Open Ground*

Corn

Potatoes

Perennials

*See Cult Groups on last page

June

June so soon! We're nearly half the year through. Last chance to sow for summer harvested crops. Time to think... winter stew?!

Winter gardens, you may not have known, are summer sown... beginning this very month and 'til August has flown. June, then, is for sowing certain winter crops to be harvested in late fall and on into late winter. A very useful and detailed sowing guide may be found in *Territorial Seed Company's Winter Garden Catalog* due out in June. The following June sowings are taken from there: broccoli (fall), kale (after the 15th), carrots, parsnips, and Swiss chard. [See Summer Chart on last page.]

It's a good idea to start right out giving these crops a protective pest barrier as soon as they sprout, or sooner. A garden floating row cover is perhaps simplest. Lay it loosely over the bed. Be sure the edges are sealed. Remove the row cover once no longer needed, as sun and weathering will reduce its useful life. Remember, BT bacteria sprays are quite effective against destructive caterpillars and may be made into a bait pellet for ground-dwelling larvae. The recipe for that may be found on the broccoli page in Territorial's seed catalogs.

June is when it's safest to sow or set out starts of cucumbers, summer and winter squashes, pumpkins and all the Cucurbit clan. They need (and can take) the heat. Be sure that if you cover your Cucurbits, lift the cover when flowers appear so insects can get in to pollinate them. Allow plenty of room for vines to sprawl.

By June we are into hot and dry weather and the need to do daily or frequent watering as described for May. Check under mulch to see if you feel water at least at the tip of a finger pushed down into the soil. If not, add water. In warm weather apply an inch of water weekly. In very hot weather double that amount. Each rise of 18 degrees doubles metabolism and thus water use. Another water robber is weeds. The best strategy is to get right on these early and often using a hoe, weeder tool or your hands and it will go a lot easier than later fighting deep-rooted, water-stealing, full grown weeds. Then too, some weeds are edible and nutritious.

Pest Prevention

This is perhaps a good point to talk about a basic pest prevention principle that is often overlooked; that principle is nutrition for building pest resistance (i.e. health) into the plant. Using pest control sprays where soils are below nutritional par necessitates a never-ending offensive battle. Fertilizing (and liming as needed) builds health into soil and into the plants. It is the pro-active, defensive strategy and can replace most pesticide use.

A healthy plant is considerably better able to fend-off and outgrow pest and disease attacks. In some cases the crop becomes less appetizing to the pests, which actually prefer and seek out unhealthy plants, as that is their mission in nature... to take out (and thus recycle) the unfit. The lesson for us is to feed the soil (it's microbes and earthworms) and let the soil feed the crop. When the crop is well-nourished, then we are well-nourished, healthier and better able to resist the diseases that routinely afflict humans, particularly those weak and stressed out. Nothing relieves stress like gardening. Gardening can replace medical and psychiatry bills. - GK

Fertility for Pest Control

“Control of insect pests is possible in any number of ways, without resorting to the use of poison sprays and chemicals. Plants strongly attacked by insects are often nutritionally unbalanced. Be sure that you give them a completely fertile soil, rich in organic matter and all the **minerals**. Using a good-sized mulch and making compost will help, as well as adding minerals in the form of natural rock fertilizers.”

-Taken from the book, *Organic Gardening* by J.I. Rodale (1955, p. 193)

“Insects and disease are the symptoms of a failing crop, not the cause of it.”

- Dr. William A. Albrecht

July

July it is! Can't get around that. Heat, weeds and bugs to combat. True, the payoff is coming soon; but you almost wish for the maritime monsoon.

Sounds insane, but it's time to start again. A winter garden, you'll find, is less toil and trouble; but only if you act... on the double! Winter growing means summer sowing. And if your spring garden didn't get growing, July is your second chance... so get going.

July is actually peak season for winter crop sowing. In some cases special winter varieties are necessary as the spring sown versions do not perform or produce well under the different fall/winter weather and light regime. Again, you can get details on correct sowing windows and suitable varieties by consulting *Territorial Seed Company's Winter Catalog*. The following list of July sowings is taken from there: beets, Brussels sprouts, cabbage (fall), carrots, cauliflower (overwintering), Chinese cabbage, collards, endive (after 7/15), kale, kohlrabi, mustard greens, scallions, onion (only certain kinds), leeks, parsnip, rutabaga, spinach, Swiss chard, and turnip. Some nurseries make the effort to stock season-appropriate seed varieties as well as winter vegetable starts.

Strawberries should be producing by July. While the reward is sweet, strawberries require constant care. They can not stand weed competition. As they start to ripen, slugs, robins, deer and other marauders somehow find them... usually the day before you are set to pick them. Sprinkle pet and wildlife safe slug bait all around the bed. Bird netting can be placed over them, but be sure to secure the edges so birds can't crawl under the netting and get trapped or hung up. Drive stakes around the patch and place jars upside down over the stakes (or use beer cans) to drape the netting so it hangs above the plants and doesn't get hung up when you remove it.

By now you should be harvesting raspberries, blueberries and such. Grapes will ripen later. All these plants, as well as fruit trees, will greatly benefit from the fertile mulching system described in the page for March.

Hippocratic Quoth

"Each one of the substances of a man's diet acts upon his body and changes it in some way and upon these changes his whole life depends."

- Hippocrates
Father of Medicine

"Let food your medicine be."

- Hippocrates

"You are what you eat."

- Goethe
German Philosopher

"It's what we eat that makes us what we are. Eating the right food is good for us and eating the wrong food is bad for us."

- Dr. William A. Albrecht (1943)

August

August heat brings good things to eat. Soon you'll have great garden fare. Just hang in there! Weed, water and hoe, the better your veggies to grow. It's a corny rhyme, but there's still time, to get winter veggie garden starts in the ground. If you didn't start your own, nurseries and farmer's markets may have them, so scout around.

August can still be a month for direct sowing certain winter crops. Among them are arugula, cabbage (spring) endive (until 8/15), kohlrabi, lettuce, mustard greens, spinach (to 8/15), onion and shallot, turnips, and corn salad (after 8/15). Consult the Summer/Late sowing chart on the back page.

August, obviously, is a month when you have to stay right on it with watering. It's best to water early in the day. Again, water the ground and not the foliage, if possible. Certain diseases (powdery mildew, tomato late blight, and others) are fostered by wet foliage, particularly when this condition persists into the night. It helps a great deal to mix compost into your seeding furrows to reduce drying out and surface crusting. At the sprouting stage, seedlings can be killed in minutes where the soil gets too hot and dries out down the first inch or so.

Powdery mildew, a commonly experienced fungus problem on members of the squash family, is due to roots not getting adequate moisture and/or mineral nutrients; so, feed the crop and keep roots moist deep-down. Also, early and repeated sprays with sulfur and baking soda (sodium)-containing products should prevent the fungal spores from taking hold.

Symphyllans, which are small, white, many-legged critters that attack plant rootlets, are a serious problem in some soils. Good control can be achieved by stirring ample quantities of shrimpmeal or crabmeal into the soil before planting. This stimulates chitin-eating microbes, which also attack the chitin exo-skeletons of symphyllans and harmful nematodes.

Root Words and Root Strength

August, our eighth month, comes from the Latin word *augere*, meaning to increase; so this is the month of INCREASE in crop production. August also means awe and reverence inspiring, as well as dignified and majestic. The word *augment*, as in mineral augmentation, comes from the same Latin root word. To *augment* is to make greater; as in size, quantity, strength, etc; enlarge. Thus, using the Mineral Augmented Organic method you can expect stronger roots and increases in quantity and quality of the fruits and vegetables you plant and harvest.

Days the Months Hath

We started out with a 10 month year, until Emperor Augustus changed that to 12 months. All the months hath 31 days, except April, June, and September (which hath 30 days) and February (which usually has 28 days, but in leap years has 29 days to compensate for Earth's orbital wobble). Year 2012 was a leap year.

Crop Rotation (4 Year Plan)

Crop rotation is not essential in a well-fertilized garden. It can be made complicated and difficult in a small garden. Nevertheless, there are some advantages for nutrient utilization and pest prevention from rotating your crops. The process is much simplified by growing crops in plots of Cult groups (see last page) in the following sequence:

Legumes and Coles → Solans and Potatoes → Roots and Bulbs → Leafy and Vines, plus Corn

September

September: is it summer... is it fall? Does it matter after all? No question though, it is **the** time to fall fertilize, cover crop and lime. September rains signal, as do the falling leaves, the perfect time for planting ornamental shrubs and trees. And when it comes to lawns, fall is best of all, to fertilize, overseed, or install. So, get on the ball! September comes from the Latin “septem”, meaning seven, and was the seventh month on the Roman calendar.

In September we are still harvesting a number of spring-sown crops from the vegetable garden. Extra produce can be put-up by canning, freezing or drying. Grapes ripen up and berries may still be around to harvest, and the same for apples and pears. But the end is drawing near.

Few aspects of gardening are as much misunderstood as liming and pH regulation. There are several kinds of limes. The most important to agriculture are calcitic or garden lime (calcium carbonate) and dolomite (high in magnesium carbonate along with calcium carbonate). While some dolomite is occasionally needed, generally calcitic lime is the one to apply. Calcium needs to be four times the amount of magnesium in soils. What most people do not realize is that our maritime soils are generally very calcium deficient due to our high rainfall that washes it out of the topsoil. This partly explains why much of the region’s soils are acidic (i.e., have a low pH number). Dolomite can easily be overdone and its high magnesium tends to tighten soils. It was Dr. Albrecht who worked out the calcium to magnesium (plus potassium and other minerals) balance ratios for soils.

While frequently needed, calcitic lime can be overdone as well. For vegetables and many other crops the optimal pH is 6.5 or slightly acidic. Very acid and very alkaline soils interfere with the plant’s ability to uptake major nutrients as well as trace elements. However, the pH number is not as important as having the right amounts of calcium and magnesium in the soil (in balance and in relation to other elements). A professional soil test can determine and resolve these matters. Amateur kits won’t tell you the relative amounts of calcium and magnesium in your soil.

Fall cover cropping is best done in September when working conditions, soil temperature and workability are optimal. This is when most seeds of cover crop plants are best able to germinate and get established before things get too cold. Cover crops perform a number of desirable functions including prevention of erosion, crowding out weeds, capturing leachable nutrients, and putting added organic matter into the soil. Two very good cover crops for gardens are crimson clover and ryegrass. They are even better in combination (1 part clover to 3 parts ryegrass). Later a more hardy choice would be vetch and rye grain, again in the same 1 to 3 ratio. Cover crops are allowed to grow to 6 to 12 inches tall (and not later than when a first flower is seen) and then are tilled into the ground in spring and given 3 or 4 weeks to rot before planting vegetable seeds or other seeds.

It should be noted here that nitrogen-fixing (and raising the nitrogen level in soils) with legume cover crops is not automatic. The symbiotic bacteria capable of putting atmospheric nitrogen into root nodules require minerals like everyone else. Among the necessary minerals which must be present in the soil are calcium, phosphorus, boron and molybdenum. All of these minerals (and many more) are contained in Black Lake Organic’s mineral balanced B.L.O.O.M. fertilizer blends. Indeed, every known plant nutrient element is in them.

Health and Disease

“A properly mineral-rich diet predisposes a man [or woman] to health and normal functioning. And the healthier we are, the better we resist diseases that ought to lay us low.”

- Dr. William A. Albrecht

Quoted in *The Saturday Evening Post*, “Are We Starving to Death?” (1945)

October

October, we know from **Oct-a-gon**, is supposed to be the eighth month, but isn't. However, it is your second chance to do all the garden chores you should have done in month nine.

Here they are:

- Harvest summer crops.
- Compost garden refuse, leaves and trimmings.
- Fertilize your lawn and lime (if needed).
- Seed, overseed or top-dress the lawn.
- Plant garlic, shallots and perennial bulbs.

October is when it's best to get a professional soil test. Alternatively you can apply a complete, organic fertilizer mix and come close to supplying all your soil's nutrient needs. But, get going before it's snowing!

October is a winding down and picking up month. Call it the TRANSITION month. It's time now to take up your watering hose, pull up stakes, clean up and stow your gardening tools, and commence to compost. Compost is many things to many people and seldom is it made right. Like baking a cake, it's easy to have it flop. So here's a memorable method and recipe developed at Black Lake Organic called The S.P.A.M. Sandwich Method. In making hot process (aerobic) compost, it is best to have all the materials for making a complete compost pile assembled in separate piles ahead of time. If possible, we want to build the pile (perhaps 4 feet tall, wide, and long) all in one day, or one weekend.

If you don't already have a compost bin set up, go to the hardware store and purchase a 15 foot section of heavy-duty, galvanized wire fencing that is 4 to 5 feet wide (high). Set it up in a ring on the composting site and clip or wire the ends together. In the center of the cage drive a fence stake (about 5 or 6 feet tall) and drop a section of corrugated and perforated 4 inch drain pipe over this stake to form an aeration chimney. Then drive four long metal fence stakes inside the cage, equally spaced, and wire the fence (top and bottom) to the fence stakes.

Now, begin adding the desired materials in layers as follows to spell out S.P.A.M. Begin on bare **S**oil. Add about 4 inches of "browns" (dead **P**lant matter like leaves and straw). Wet this layer down. Now add about 4 inches of "greens" or live **P**lant matter (like grass clippings, kitchen scraps, and crop residues). Next add **A**nimal matter such as 2 inches of manure or a thin layer of bloodmeal or fishmeal. Finally add a thin layer of **M**inerals (rock phosphate, greensand, lime, granite dust, etc.). Actually, a superior way to supply the minerals, plus plant and animal meals and beneficial microbes, is to use Black Lake Organic's Compost Fortifier Mix (BLOOM No. 10). Next comes the soil layer. Use about an inch, but don't overdo as soil retards heating of the pile. Using soil in the layering reduces loss of nitrogen-containing gases. It is a good idea to mix the minerals into the soil prior to layering it on. Now repeat this whole S.P.A.M. layering procedure until your pile is shoulder high or filled to the top of the cage. Don't forget to water each "browns" layer.

Note: Due to length, the remainder of the composting discussion is located on the November page.

Professional Soil Testing

In most situations having a professional soil test done for your garden or farm and evaluated by a capable soils expert is well worth the expense. Those wishing to get such a soil test are advised to contact Black Lake Organic for instructions on taking and sending samples to a soils laboratory. We can provide a soil test analysis and recommendations. You can contact Black Lake Organic by phone at (360) 786-0537, or by sending an email to gary@blacklakeorganic.net.

November

November, let us all remember, is for the birds, so heed these words. When your garden's been put to bed, it's time your feathered friends be fed. Just another way of thanksgiving to life and the living.

It's time to stock up on feeders, seeds and suet. Get everything together and just do it. It takes nothing brave or bold to better fuel feathered kin unable to come in from the cold. So in your head, this thought keep, there's critters and critters to feed, before you sleep.

November is CLEAN UP month. Except for potted trees and shrubs there's little, if anything, to be planted, though you may have a number of winter crops to bring to the kitchen as needed. This is a good time to dead-head flowers and rake up leaves and remaining garden debris and possibly start another compost pile. In any case, it's a good idea to tarp over your compost pile to shed winter rains and snow. However, leave open a space near the bottom in which air can flow.

Composting - Part Two

When the pile is completed, it immediately begins to heat up from induced microbial and chemical activity and soon reaches a temperature of 130 to 150 degrees and is too hot to touch. Air that flows through the pile into the chimney causes a further fueling. The next day, hot air will pour out of the chimney and by the third day the pile will drop to about half its original height. The activity of microbes is the chief cause of all these changes.

After about four weeks the pile should have completed heating up (signifying completion of the first stage of decomposition) and the temperature will go down to about outside (ambient) air temperature. Now you unfasten the wire ring, pull up stakes and reassemble the empty cage nearby. Next take a spade and slice or shave off a six inch or so ring all around the pile. Break this up and drag it around in soil, then fork it over into the new ring. Water the new pile to keep it sponge wet. Repeat this shaving until reaching the core area and make an effort to put the outer shavings in the center and the inner core on the outside of the new pile to accomplish a more complete decomposition of the outer parts of the first pile. This new pile will reheat, collapse and cool down. After a few more weeks your compost should be reasonably finished and ready for use in the garden. If not, turn the pile again, water as needed, and wait until it is fully broken down. Then apply it thinly to the upper inch of your prepared garden beds in Spring and sow your seeds; or use sparingly, as needed, in other applications. Finished compost is safe to use any time.

Whence Compost

Compost is a human creation. It is done to extend the volume of available animal manure and to recycle animal wastes or byproducts and plant refuse back into soil for maintaining its productivity and ease of handling. While some form of compost and dung heap management was practiced by the ancient Chinese, Hebrews, Romans, medieval Europeans and others, it's modern reinvention is owed to Sir Albert Howard, who developed a set system and guidelines while stationed at Indore in India during the 1920's up to 1931. The Indore method came to America about 1940 and was popularized by J.I. Rodale, who founded *Organic Farming and Gardening Magazine* in 1942. In the 1970's it was the second-most popular magazine in the country. – GK

Making Superior Compost

“You can improve the quality of your compost **greatly** by adding natural rock fertilizers to it as you make it. For every 100 pounds of compost material, you can add several shovels of rock phosphate, colloidal phosphate, granite dust, greensand, and/or ground limestone. The intense bacterial activity [which generates heat] in the heap will help break down [or out] the nutrients in the rock [particles] and make them available faster.”

-Taken from *The Complete Book of Composting*, by Rodale (1960) (pp 61-2). Also see photo on page 58.

December

December, with its wintry weather, lets us gather past and future all together. So, review your garden's performance in this time allotted. Dream, scheme and plan 'til next year's is plotted. Help and inspiration you can find in books galore, some of the better ones are at your local garden store. There you'll also find quality tools, bird houses and feeders for all the non-readers. So, if its garden gifts you're looking for, need we say a whole lot more?

Many gardeners, at this time of year, go for live Christmas trees to bring them cheer. This is a very sensible option to cut or artificial trees. For one thing, when the holiday season is over, you can plant them in your yard as part of a wildlife habitat creation. If you are out of room, there may be agencies the trees can be donated to for revegetation projects. However, there are some things to know regarding care of potted Christmas trees during their indoor stay. Where possible, place the tree in a sun-lit window location. Keep house temperatures as low as you can comfortably handle. Check soil moisture daily and add water as needed to prevent needle drying and dropping. The main concern is to keep the tree inside the minimum number of days necessary. Ten days should be the limit.

Victory Gardens Revisited: A Review of *The Original Victory Garden Book*, by M. G. Kains

In these scary, hard times, many of us think about the Victory Gardens of World War II years. We look back to the Victory Gardens for inspiration and guidance on what to do under our present circumstances. A major goal was to enlist the citizenry in assisting the war effort and saving the country. Saving one's budget is probably the uppermost concern of people today, but having your health is right up there. What really surprised and almost astounded me in reading Kains' book was the attention given then to health and malnutrition. In fact, this was the chief reason for initiating the National Garden Program in 1942.

-Excerpts from "Emergency Services for Hard Times", by Gary Kline (February 2010)

Soil and Health

"Comparatively few people appreciate the extent to which the condition and treatment of the soil govern the food value of what is taken from it. --- Compost, we have shown, produces plants resistant to disease. But do these plants confer better health and well-being on the animals and people eating them? The answer is an unqualified "Yes!". Compost-grown plants are definitely superior in nutritional values, and organic food is the cornerstone of good health."

"That this is vitally important to every man, woman, and child living today --- and to future generations as well --- is becoming apparent to those concerned with the falling level of health in our nation."

"Last year [1959] cancer was more prevalent than ever before. We had more heart disease. It is the leading cause of death, killing young people before the age of 40 all over the land. We had more ulcers, more rheumatism, more high blood pressure, more diabetes, and more mental disease. Fifty percent of the hospital beds are filled with mental patients. The incidence of degenerative diseases is rising steadily."

"What's responsible for this nationwide unhealthiness? The one biggest cause is malnutrition [notice: not pollution and contaminants]: Our foods do not contain the proper amounts and balance of elements that build healthy bodies."

- Taken from *The Complete Book of Composting* by J.I. Rodale and staff (1960, pp. 592-4)

P.S. - There is one clear remedy: Grow your own mineral-augmented organic food. – GK

Gardening Year Summary

This is a good time and place to write a summary of the garden's performance.
What worked well? What didn't?
What needs to be changed for next year?

Food Garden Planning Fundamentals

Site Planning - Failing to plan your garden site and its layout can lead to grief. A number of important factors need to be considered in the planning of vegetable and fruit producing gardens and orchards. The location and height of nearby trees can mean too much shade for crops to make it to maturity and contain the needed nutrients and desired palatability. In general, it is best not to place fruit trees inside or close to the vegetable plot because of root competition for water and nutrients needed by ground level crops. Protection afforded by buildings, woods and hedgerows can be beneficial against bad weather and high winds, provided dead shade or heavy shade lies outside the garden plot. Fruiting crops require more sun and heat and longer to develop than leafy crops.

Ideally, the site should have ample exposure on the south to sunlight and a minimum of 8 hours of full sunlight for food crops to grow properly. Take into consideration foggy and cloudy periods and seasons. Usually it is not important whether rows run east-west or north-south. Put tall crops to the north. Access to the site by small trucks, carts, etc. is desirable and a source of year-round water close by is essential. A good loam soil of good tilth is a blessing. But if your site is rocky, very clayey, or sandy, or is too wet, or the topsoil too shallow, you may be way ahead to rise above it all by going to raised beds and bringing in good topsoil (hopefully weed-seed-free) or a **quality** garden soil mix. Many problems are greatly reduced by going to raised beds and the ones made with cinder blocks surprisingly cost little more than a comparable amount of newly purchased one inch lumber for a bed of the same dimensions; plus, cinder block beds provide built-in seating as a bonus and last a lifetime. Also consider putting up an 8 foot barrier fence against deer. Effective natural deer repellants are available, but may not be suitable to use on food crops.

There are 6 growth factors a plant must have for proper growth and to supply the most nutritious and best-tasting edible parts. These are: adequate air (including below ground), water, sunshine, warmth, anchorage for the roots, and adequate nutrients. The latter factor is the one you can do the most about to improve plant performance and production and to transform a mediocre food crop into a fantastic crop. Remember these 6 factors, because if something is going wrong with your plants (other than slugs, deer, etc.), it has to be one of those 6 things (or possibly more than one) and that's the one you focus on fixing.

What and How Much to Plant

When planning what to grow and how much to plant, use restraint. It's best to do a small garden well rather than a big garden poorly. The work can easily overwhelm your available time and your experience level.

Start by asking, what crops does the family eat and enjoy? Consider how often and how much of each crop the family would eat during the growing season and whether you will be able to can, dry or freeze a surplus, and allot more space accordingly. Try a few new crops, but don't get carried away. As you gain skill in dealing with all aspects of gardening, you can expand the garden size and reap the extra rewards rather than reap frustration. Remember, gardening is meant to be therapeutic, relaxing and fun. Doing it right makes all the difference.

Think Backwards

Once you've determined when and how to harvest what you plan to grow, think from the end back to the beginning, starting with crop protection. Your main protection from insect pests and diseases comes from resistance imparted by full soil nutrition. However, research and consider what pests your crops are likely to encounter and what can be done early on to prevent or counter them or provide protective barriers such as row covers, cages, natural pesticides, etc. Also, think of providing cloches for weather protection, shade screens if needed, bird nettings, deer deterrents or fencing and so on.

- GK

Planting Chart Explanations

The early (Spring) and late (Summer/Late) planting or sowing charts arbitrarily divide the gardening year at July 1st. To simplify the charts some fudging was done; i.e., spill-overs and some details were left off. Likewise, spacing and depth numbers were rounded or lopped-off to produce a single number and fit into convenient groups that make them easier to remember and plan rows with. For instance, more official sources may list beans to be sown 3 to 5 inches apart, but 4 inches will work for all kinds.

Generally, the spring-planted crops are sown between March 1st and July 1st. Winter garden crops (Late Planting Chart), while harvested generally in winter months, are sown after July 1st in summer or early fall (and mostly before October 1st). Use of cloches may extend these sowing dates and serve to protect crops against wind, heavy rains and frosts so they produce earlier or better, or last longer.

To keep the number of columns to a minimum, the spacing between seeds is the **final** distance after thinning the initial sowings, which could be much closer to compensate for losses. Between-row spacing tends to be tight in the interest of intensive growing, such as with raised beds. Recognize, however, that closer planting (due to lack of pathways) means greater fertilization is needed to compensate for crowded feeding conditions. Just ask Old Mother Hubbard!

Instead of being listed alphabetically, the crops are grouped by families, which enables seeing close relationships and facilitates learning and retaining the spacing numbers. Note that different books in different eras will use different scientific (Latin) names for the families and also different common names. For example, Brassicacea formerly was Cruciferaea or crucifers, also called the cabbage family or mustard family. Usually same family members have the same growth habits and requirements and the same insect pest problems; plan and plant accordingly.

Provided you provide plenty of complete, balanced and mineralized fertilization, you need not be concerned about such things as crop rotation, companion planting and phases of the moon.

Beyond family groupings, these charts employ the concept of cultivation groups (or “cults”) that are a combination of family relation and spacing considerations that, again, allow for more convenient, efficient and memorable planning and garden layout, as well as timing blocks. Note that some families will contain cold weather and warm weather cousins, usually planted at separate times and places in the cult groupings. The Cult Groups are as follows:

I	Bulbs (alliums)	IV	Roots	VII	Vines (cucurbits)	X	Miscellaneous
II	Coles	V	Legumes	VIII	Grains		
III	Leafy	VI	Solans	IX	Herbs		

Another new concept to aid planning and learning is the Temperature Group (Temp. Group), which combines the old concept of Hardiness Groups (pertaining to safe minimum temperatures of emerged plants or crops and tied to the average last frost date) with a **crude** notion of the safe, minimum **ground** temperature and “comfort zone” or temperature range for sowing seeds of those crops. The Temperature Groups are as follows:

Cold	=	40° - 50°	(March)
Cool	=	50° - 60°	(April)
Warm	=	60° - 70°	(May)
Hot	=	70° - 80°	(June)

Give us your feed-back and experience with using these concepts and the charts. Good Growing!

**SUMMER/LATE PLANTING CHART (JULY THRU OCTOBER)
FOR FALL AND WINTER HARVEST**

Family	Vegetable/Crop	Cult Group	Seed Depth	Plant Spacing	Row Spacing	Temp Group	Sowing Period
Alliaceae	Onion	I	1/2"	4"	18"	Cold	7/15-9/1
(Alliums)	Leek	I	1/2"	4"	18"	Cold	7/15-9/1
	Shallot (B)	I	3"	4"	18"	Cold	10/1-11/1
	Garlic (B)	I	4"	4"	18"	Cold	10/1-11/1
	Scallions	I	1/2"	4"	18"	Cold	7/1-8/10
Brassicaceae	Cabbage	II	1/2"	24"	24"	Cool	7/1-8/1
(Brassicacae)	Broccoli	II	1/4"	24"	24"	Cool	7/1-8/1
	Cauliflower	II	1/2"	24"	24"	Cool	7/1-8-1
	Brussels Sprouts	II	1/4"	24"	24"	Cool	7/1-8/1
	Chinese Cabbage	II	1/2"	18"	24"	Cool	7/1-7/25
	Collards	III	1/2"	18"	24"	Cold	7/1-8/5
	Kale	III	1/2"	18"	24"	Cold	7/1-8/1
	Kohlrabi	IV	1/2"	8"	18"	Cold	7/15-8/15
	Radish	IV	1/2"	2"	6"	Cold	9/15-11/1
	Turnip	IV	1/4"	2"	12"	Cold	7/10-9/1
	Rutabaga	IV	1/4"	8"	18"	Cold	7/1-8/1
	Mustards	III	1/4"	8"	18"	Cold	7/10-9/15
Umbelliferae	Parsley	IX	1/2"	8"	18"	Cold	3/1-6/1
(Parsley)	Parsnip	IV	1/2"	4"	18"	Cool	7/1-8/1
	Carrot	IV	1/4"	4"	12"	Cool	7/1-8/1
	Fennel	III	1/4"	12"	18"	Cool	6/1-8/1
Chenopodiaceae	Beet	IV	1/2"	4"	18"	Cool	7/1-8/1
(Goosefoot)	Chard	III	1/2"	18"	18"	Cool	7/1-7/15
	Spinach	III	1/2"	12"	18"	Cool	7/10-8/20
Asteraceae	Lettuce	III	1/4"	12"	18"	Cool	8/1-10/1
(Composites)	Endive	III	1/4"	12"	18"	Cool	7/15-8/15
	Chicory	III	1/4"	12"	18"	Cold	7/1-8/1
Fabaceae	Pea	V	1"	1"	18"	Cold	9/15-10/15
(Legumes)	Fava Bean (Pea)	V	1"	4"	18"	Cold	9/15-10/15
Gramineae	Grains	VIII					
	(Wheat, Rye, Barley, etc.)						
<u>Miscellaneous</u>							
Brassicaceae	Arugula	X	1/4"	4"	12"	Cool	8/1-10-1
Valeriacae	Corn Salad	X	1/4"	4"	12"	Cold	8/15-9/15
Asteraceae	Cress	X	1/4"	18"	18"	Cool	8/15-9/15
Portulacaeae	Purslane	X	1/4"	8"	12"	Cool	7/1-8/1

Planting Chart Key

Generally the two planting charts pertain to sowing of seeds outdoors. Exceptions are as follows:

T = Transplant; a young plant started indoors (under cover) for later planting outside under more favorable weather conditions.

B = A bulb, set, crown or root piece of a plant not typically started from seed or impractical to do so; however, sometimes illogically referred to as seed (as in "seed" potato). Asparagus may be started from true seed, but bears usable spears quicker when started from a two year old crown.

Please Refer to Explanation Text on the preceding page