



GROW WHAT YOU EAT!

Over-Winter Gardening

Workshop Notes

What is Winter- and Over-winter Gardening?

These are two very similar terms that often cause confusion. Both are vital parts of a bountiful, year-round garden, and there is a clear distinction between the two. Winter gardening is **summer planting** for **winter harvest**. With winter-gardening, the garden acts as a living refrigerator, keeping veggies fresh until you're ready to pick them. Over-winter gardening is **summer planting** for **spring harvest**. Plants go into the winter as teenagers, waiting for spring to finish growing. Some veggies need this extra time to develop, while others taste sweeter after frost. Come spring, their growth rates pick up, and they are ready to be picked in no time.

Where We Live

We live in region 7/8. This number provides information on what plants, shrubs, and trees can grow in Vancouver, the Gulf Islands, and much of the Pacific Northwest. On this scale, "0" is the harshest region, and "9" is the most mild. In Vancouver, our mild climate means we can grow nearly everything, save tropical fruits. With a little bit of work, food can be grown year-round in Vancouver.

A year-round garden is a wonder that just keeps on giving. Making the shift to gardening year-round greatly increases your garden's production, with a minimal increase in workload. Being successful with growing food year-round is all about planning ahead, planting the right cultivars, and protecting crops.

What's the Dirt on Soil?

Soil is essentially a mixture of rock fragments and organic matter. It is a plant's environment, and provides water, nutrients, structural support, and air circulation for roots. Four main elements make up soil: **clay**, **silt**, **sand**, and **organic matter**.

There are various soil types out there – sandy, sandy loam, loam, clay, and many others. A balanced soil structure for growing veggies is somewhere between sandy loam and loam. Most soils are composed of 40% sand, 40% silt, 20% clay. Somewhere in that mix, there should be a 5% layer of organic matter (broken down leaves, plants or other biological materials).

Clay versus Sand

Each soil has its pros and cons. Sand is good for drainage, but doesn't hold nutrients very well. Clay is poor for drainage, but holds in nutrients. A good balance of these elements creates ideal soil structure, complete with nutrient holding capacity and good drainage.

What if your soil is too sandy or has too much clay?

The best solution is to add organics and more diversity into your soil. Compost is a great choice. If it's autumn, try adding some fallen leaves.

How to Test Your Soil Type

Not sure what type of soil you've got? "Hand-rolling" is a quick and easy way of finding out. Take a clump of soil in your hand, moisten it, and roll it into a tube shape with one hand. If it crumbles before you can form it, you have sandy soil. If it rolls very easily, and could keep rolling and rolling, you have a more clay-based soil.

<p>N – Nitrogen P – Phosphorous K – Potassium</p>

Soil Food

Soil contains macronutrients and micronutrients. Plants, just like our bodies that eat them, need these nutrients. NPK are the three main macronutrients a plant needs, and it is the nutrient ratio that is always listed on a bottle of fertilizer, i.e. 10 - 10 - 10.

Nitrogen	Phosphorous	Potassium
<p>Nitrogen is crucial for vegetative growth. It's the first number in the ratio, as well as the first thing to leach out of soil. When a plant is low on nitrogen, it will often tell you by turning its mature leaves yellow, in a bid to move the nitrogen source for the new growth. Nitrogen can be found in animal manures, compost, fish meal, and cottonseed meal.</p>	<p>Phosphorous is important for a plant's blooms, fruit, and root development. This macronutrients stimulates fruit production. If you have added a soil amendment, plants will draw up the phosphorous they require, as needed. Rock phosphate, bone meal, and alfalfa meal all contain phosphorous.</p>	<p>Like a shot of lemon, ginger, and cayenne pepper, potassium is the immune booster for veggies. It protects them against diseases, and aids in drought and cold tolerance. It helps plants out with the process of photosynthesis, and it also vital for strong root development</p>

pH

pH is integral for plants to be able to take up nutrients. pH (potential hydrogen) is a measure of the concentration of hydrogen in a substance, with a scale ranging from 0 to 14. A rating under 7 is acidic, increasing in proximity to 0, and a rating above 7 is increasingly alkaline. Veggies, as a general rule, like a slightly acidic pH of 6.3 to 6.5. Vancouver soil sits right around this ideal range. If you're buying soil, it will have the right pH for growing food.

Soil Amendments

Compost

Compost has 20% of the nutrients that a manure has, and is important in developing a healthy soil structure that abounds with yummy earthworms! Keeping your own compost is awesome, but make sure that it's well broken down into "humus" – organic matter that has reached the point of stability where it will break down no further. Humus looks, and smells, just like soil.

Organic Fertilizers

Organic fertilizers come in both a liquid and granular form. If you need immediate results, liquid is the way to go. For slow-release, long-term nutrient provision, granular fertilizers are best.

Manures

Watch out with manures – they **must** be well-rotted, in order to be used. Mushroom manure is Victory Gardens' personal favourite. Animal manures, if too fresh, can be too "hot" for your plants, stunting their growth.

What does Victory Gardens do to prep beds?

Victory Gardens uses an organic veggie mix, with a light dusting of granular organic fertilizer. This mix is composed of 75% compost and 25% sand. It provides most of what the plants need immediately, and the organic fertilizer, being granular, will release slowly and deliver what the plants need on an on-going and as-needed basis.

Composting

What can go into compost? Everything that came from the earth! Be aware, however, that with non-organic food scraps 99% of pesticides breakdown, but 1% does persist. Composts can be kept both indoors and outdoors. Some systems, like bokashi, are enzyme-based, and are ideal for indoor use, as they keep odours down. There's a much wider selection to chose from with garden composters. The best systems have two separate composts going at once. Maintaining good compost relies on consistent watering and turning.

What is it?

Compost is an acceleration of the natural process of decomposition. You can see this happening in nature year-round, most noticeably in fall when leaves fall to the ground and start decomposing, enriching the soil. This idea of soil enrichment is the key of compost. Fungi, bacteria, and microbes all work together to generate the heat needed for the contents of a compost to break down quickly.

The ideal ratio for your compost is 75% brown matter, which is rich in nitrogen, and 25% green matter. This helps speed up decomposition, but it's not necessary. You'll know your compost is done when it has no odour, resembles dirt, and is not sticky at all.

How to Use It?

Compost can be used throughout the garden, and does amazing good wherever it goes. First off, screen your compost to make sure there are no chunks of matter left. You can top dress your soil with compost at the beginning of the season, mulch plants with it, or even use it while planting.

How To Prep Garden Space for Food Production

Most likely, you will be doing your food growing in pots or in the earth.

Prepping Beds We recommend taking the sod out of your garden completely, instead of turning it under. Why? Grass will likely grow back, and there are pests out there that <i>love</i> to feed on grass roots, and will also feed on your veggie roots if given the chance. With sod removed, add some organic garden mix and organic fertilizer, and you're ready to go!	Prepping Pots There are numerous types of containers out there. When choosing containers for food growing, consider materials, size, and pressure treatment. Drainage rocks are a great idea, for the bottom of your pots. Instead of garden mix, use outdoor organic potting soil, in addition to the organic fertilizer.
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How to Plan and Maintain a Winter or Over-Winter Garden

Planning for winter and over-winter gardens starts in the middle of summer. Veggies need to be well-established when they go into winter, otherwise they won't be strong enough to withstand the cold temperatures and low levels of light. Whether you're winter- or over-winter gardening, there are a few things to keep in mind when you start planning.

November 2nd

Average first frost date for Vancouver

Location is a big deal – carefully consider where you want to plant these veggies. Raised beds provide extra drainage, and warm up faster in the brief winter sun. Definitely utilize areas in your garden that have shelter from the wind, provided by windbreaks like walls.

Make sure you **choose ideal cultivars** and that you buy varieties specifically for winter. Be aware that some crops need more babying than others, requiring protection to get through the winter.

Examples of some cultivars – and these are just a handful!

Winter Vegetables	Carrots, beets, lettuce, kale, Asian greens, cilantro
Over-Winter Vegetables	Broad beans, sprouting broccoli, cabbage, garlic, onions

Consider planting cover crops They suppress weeds and build up soil fertility, along with controlling pests and disease. If a bed or section of your garden is tired and lacking nutrients, try planting cover crops. Examples include white and crimson clover, fava beans, fall rye, hairy vetch, and winter field peas.

Think about crop rotation. Like cover crops, this method prevents nutrient depletion of the soil, disease, and pest problems. It's based on the idea that some plants are heavy feeders, while others are lighter feeders. Tomatoes, for example, will deplete soil's nitrogen and phosphorous if consistently re-planted in the same spot. Balancing the planting of these different veggies will ensure your soil stays healthy.

Keeping veggies protected and warm is important. Constant freezing and thawing of the soil surrounding a plant disturbs its roots and pushes the vegetable out of the earth. Some veggies desperately need to be coddled in winter, while some hardy veggies that can brave the cold will actually produce better if protected. If you have a greenhouse, definitely use it. Otherwise, some options for crop protection include heavy row covers, mulches, cloches and cold frames

General Rule of Thumb =
Avoid re-planting the same category of crop in the same place. Follow nitrogen-fixing legumes with nitrogen-loving leaf or fruiting crops, and follow heavy-feeders with light-feeders.

- **Heavy row covers** are a veggie's blanket, storing heat in the air and soil. However, light is blocked, so plants will grow even slower than their usual winter rates.
- **Mulches** absorb much of the sun's energy during the day, and keep the top layer of soil from freezing. Use organics like straw, leaves, bracken ferns, etc.
- **Cloches and cold frames** will also help you make the most of the sun, like mini-greenhouse.

When **harvesting veggies** that have frozen, wait until they have thawed naturally during a warm spell before cutting them.

Resources and References

Growing Vegetables West of the Cascades: The Complete Guide to Organic Gardening

by Steve Solomon

Year-Round Gardening

by Linda Gilkeson

The New Self-Sufficient Gardener

by John Seymour

West Coast Seeds: www.westcoastseeds.com

Salt Spring Seeds: www.saltspringseeds.com

Stellar Seeds: www.stellarseeds.com

Victory Gardens Vancouver: www.victorygardensvancouver.com