Vegetable Variety Trial Planting Guide for 9 3x3’ Raised Beds

Note: detailed growing guides for each vegetable can be found at: www.gardening.cornell.edu

Bed #1

Spring: Lettuce *(Red Sails, Black Seeded Simpson)*

Eco-Gardening Technique: Straw Mulch

**Establishment:**
Start seeds indoors around mid-March, or direct sow as soon as you can work the soil. Leaves can be cut as baby greens or allowed to mature to full heads (about 30 days). New succession of seeds can be planted every 2-3 weeks for a continued harvest. Plant each variety in a single row about 12” apart. Once lettuce emerges, or after transplanting, mulch entire bed with a thick layer of straw.

**Maintenance:**
With each round of planting, apply fresh and finished compost as a top dressing. Vermicompost is also a good option.

Summer/Fall/Winter: Garlic, Cauliflower *(Romanesco)*

**Establishment:**
Transplant 3-4 cauliflower plants after danger of last frost. Plant in-between rows of lettuce, 16” apart. Late June or once lettuce tastes bitter, gently pull out and compost lettuce plants. Plant 3 rows of garlic, 5” deep, 6-8” apart. Apply top dressing of compost.

Mulch should remain around cauliflower plants. Add more straw to cover garlic 6-8”.

**Maintenance:**
Cauliflower is susceptible to aphids and cabbageworms. Observe the underside of leaves frequently and remove pests to reduce infestation.
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Bed #2
Beneficial Insect Flower Bed: Anise, Chamomile, Aster, Marigold
Eco-Gardening Technique: Beneficial Insects, Leaf Mulch

Establishment:
All of these plants can be sown directly into the garden, but starting indoors gives a jump-start. Layout is less formal in this bed. Consider the chamomile as a ground cover, the marigold grows a bit taller, and the aster and anise grow 2-3’ high. Lightly mulch in between plants. We encourage adding other habitat to support beneficial insects in the garden including rock piles, brush and stick piles, a bird perch, etc.

Maintenance: Keep it neat! Deadhead flowers to promote new growth. Re-mulch as needed. All of these (other than marigold) are perennial and can be pruned in the fall to allow for new spring growth.

Why so many FLOWERS in a VEGETABLE VARIETY Garden?
The 2013 Cornell Horticulture Theme is Beneficial Insects! There are a number of beneficial insects including but not limited to ladybugs, ground beetles, spiders, praying mantis, lacewings, lightning bugs, bees, butterflies and dragonflies. The presence of these “good bugs” not only improves the health of the garden and enhances pollination, but they also help deter “bad bugs”, thereby reducing the need for pesticides or insecticides and overall, make our lives easier as gardeners. To promote beneficial insects in the garden, it is necessary to include a diversity of plants in and around the garden. There are hundreds of plants that attract beneficials including those in the parsley or carrot family (Apiaceae) and the aster, sunflower or daisy family (Asteraceae). Choosing a wide variety of color, scents, textures and heights is also helpful.

We have dedicated 4 of the 9 beds in this year’s Vegetable Variety Trial to growing beneficial insects attracting plants. We will be keenly watching for beneficial insects this season and look forward to sharing what we find!
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Bed #3
Perennials: Strawberry, Rosemary, Sage
Eco Gardening Technique: Companion Planting, Sheet Mulch (e.g. cardboard, compost, straw)

Establishment:
Sheet mulch bed by layering a single layer of cardboard on top of current soil. Add 2-3” of compost on top. Cut hole into cardboard at 1’ spacing and carefully plant strawberry into compost above this hole. Water generously. Interplant aromatic perennial herbs such as thyme, rosemary or sage to help deter worms. Mulch entire bed with thick straw. Strawberry plants may be purchased from a local nursery.

Note: Consider mounding the compost for each plant.

Maintenance:
Water regularly so strawberry roots do not dry out. Maintain heavy mulch. Harvest as berries ripen. Snip herbs to harvest. Up to 20% of these herb plants can be harvested at once.
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Bed #4
Beneficial Insect Flower Bed: Coneflower (Echinacea), Black-eyed Susan, Yarrow
Eco Gardening Technique: Leaf Mulch

Establishment:
Start these from seed or buy as transplants. Transplant after danger of last frost has passed. Plant 3-4 of each of plant in any arrangement you like.

Maintenance:
These plants are all perennials. They will form dense root clumps over-time, enabling you to thin and transplant into other garden areas in early spring. Deadhead to promote continuous flowering.

Multiple Functions, Multiple Elements
Some of our favorite plant species have many uses and benefits. While in this garden we have chosen many of the flowering plants because of their ability to attract insects, many of these plants also have other important functions as well. Echinacea is a commonly used medicine which helps ward off colds and the flu. Yarrow has medicinal purposes as well; Native Americans use it to heal wounds and infections. Chinese medicine believes it promotes health of the kidney, spleen and liver. Chamomile is a low growing plant so can help reduce weeds from sprouting in the garden, and also it’s a delicious and commonly used herbal tea ingredient. Dill is both a companion to ward off cucumber beetle and is also a commonly used culinary herb. Chives (and the entire allium family) serve a similar purpose. Peas (both pods, flowers and shoots) are edible and also are nitrogen fixers meaning they produce nitrogen compounds that help them grow and when they die this nitrogen is made available to other plants and fertilizes the soil. Can you think of additional functions for any of the other plants in the garden?
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Bed #5
Spring: Carrots (*Purple Haze, Scarlet Nanes*), Chives
Eco-Gardening Technique: Mulch, Companion Planting,

Establishment:
Direct sow carrots as soon as you can work the soil. Plant each variety in a single row about 12” apart in the bed, ½ inch deep, ½ apart. Direct seed or transplant chives into garden where there is space. Even one chive plant can provide some pest control.

Maintenance:
Thin carrots to ~4” apart. Carefully mulch between rows. Harvest when tops are well established and carrots are peeking up from the soil a bit. Pull entire carrot to harvest. In larger gardens, plant successive rows of carrots every 2-3 weeks to ensure a continuous harvest. Harvest chives multiple times – the smell helps deter common pests.

Summer/Fall: Tomatoes (*Sun Gold, Cherokee Purple*) Basil (*Thai, Genevieve*)
Eco-Gardening Technique: Mulch, Companion Planting, Cover Crop.

Establishment:
Start tomato and basil seeds indoors by April 1st. Transplant into the garden late May/early June once soil is plenty warm and carrots have been harvested to allow for space. Given about 1 square foot of space. Top dress bed with compost. Interplant basil between the tomatoes. (*Leave chives as is*).

Maintenance:
Top dress with compost at least twice. Tomatoes should be trellised (or caged) and “suckers” can be pruned to encourage good fruit set. Harvest tomatoes when ripe. Harvest basil using the “pluck-and-come-again” method. Consider seeding hairy vetch and rye cover crop in late August.
Bed #6
Beneficial Insect Flower Bed: Salvia, Yarrow, Bee Balm (aka bergamot, monarda)
Eco-Gardening Technique: Cover Crop

Establishment:
Start these from seed or buy as transplants. Transplant after danger of last frost has passed. Plant 3-4 of each of plant in any arrangement you like.

Maintenance:
These plants are all perennials. They will form dense root clumps over-time, enabling you to thin and transplant into other garden areas in early spring. Deadhead to promote continuous flowering.
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Bed #7
Spring: Peas *(Sugar Anne)*
Eco-Gardening Technique: Stacking crops

**Establishment:**
Sow directly in ground as soon as its workable, seeds are hardy to cold temps but need warm soil to germinate. Plant 1” deep and 2 inches apart. Install a trellis over each row for support.

**Maintenance:**
Once peas emerge, if spacing is tight, thin extra (pea shoots are edible!) After plants get 12” tall and soil has warmed significantly. Harvest continuously to encourage good production. When harvest is done, **snip plants at their base** to allow nitrogen in the roots to remain in the soil.

Summer/Fall: Chard *(bright lights)*, Brussel Sprouts *(Long Island Improved)*
Eco Gardening Technique: Cover Crop

**Establishment:**
Brussel sprouts require a long growth period. Be sure to start indoors before May 1. Transplant Brussels in between pea rows or once peas have been snipped. Space 12-24” apart. Top dress entire bed with compost.
Transplant or seed chard where space, ~10”/plant.

**Maintenance:**
To harvest, carefully snip chard at base as baby greens for salad or let grow to full size. Brussels sweeten after first frost. To get larger sprouts, gradually snip leaves from bottom of plant as sprouts develop. Always leave >5 healthy leaves to continue feeding plant as it grows; cook similar to collards. After frost, snip entire stalk at base and pluck off each sprout.
Bed #8
Beneficial Insect Flower Bed: Phlox, Iris,
Eco Gardening Technique: Cover Crop (Alfalfa)

Establishment:
Iris should be purchased, as bulbs are plants. Phlox and alfalfa can be started from seed or bought as transplants. Plant after danger of last frost has passed. Plant 4-5 irises and phlox in any arrangement you like. Seed or transplant alfalfa in space leftover.

Maintenance:
Irices and phlox are perennials. They will form dense root clumps over-time, enabling you to thin and transplant into other garden areas in early spring. Alfalfa is an annual and will die at frost.
Bed #9
Spring/Summer: Spinach (*Winter Bloomsdale*), Cucumber (*calypso pickling*), Dill
Eco-Gardening Technique: Leaf Mulch

**Establishment:**
Sow spinach as soon as soil can be worked. Thin lightly and harvest as salad greens or thin to 5” and let grow to full size. Transplant cucumbers to 2 rows on the north side of bed so not to shade rest of bed. Give 12-18” space between plants.

**Maintenance:**
Spinach can be harvested at any size and can be sown every 2-3 weeks until temperatures are too hot. Give cukes a trellis for support and to ensure best production. Harvest as ripe. Once temperatures reach 80’s spinach will start to bolt and can be removed. Snip cukes at base once weather cools and they stop producing.

Fall/Winter: Beets (*Chioggia, Guardsmark*), Kale (*Red Russian*)

**Establishment:**
Sow beets and kale directly in bed once spinach is removed.

**Maintenance:**
Thin beets to 5” spacing. In this bed feel free to experiment by planting another, shorter rotation crop such as mescaline or arugula in between the rows of beets. This helps keep the soil biology active and provides a yield from the space while waiting for root crops to mature. Beets can be sown every 2 weeks until temperatures drop. Harvest beets when preferred size. Harvest kale all winter long where temperatures permit.