# SARE EPHEMERAL SIGN – 2011 FINAL COPY

**SPRING**

**Intro Bed Sign**
Go Organic!
It's year 4 of our commitment to organic-only practices in the Fruit & Vegetable Garden.
What's working for us?
The same eco-friendly approaches that you can apply to your backyard garden.
Read more on signs posted throughout the beds.

**Build Healthy Soil**
Feed Your Soil
Vacuumed up from Glencoe's streets, your leaves get recycled at the Chicago Botanic Garden. Shredded in a tub grinder, they compost into finely-textured, dark-colored, nutritious mulch for our beds. We spread a 4" layer here earlier this spring; it's fast decomposing.

Feed Your Soil
Got clay? So do we. While clay has its benefits (moisture-retentive, nutrient-rich), we've been working for years to amend our beds with organic matter. By building soil from the top down, you eventually create an ideal medium for vegetables to grow in.

Spring Is Time To:
Plant cool-weather crops.
The soil tells you when—pick up a handful and if it's friable (crumbly, not too wet) then it's time to sow the first seeds or plant the first seedlings of spring.

**Compost**
(At the composter)
Go Organic! Compost
Toss fruit and veggie scraps into a composter instead of the garbage. Compost made from food scraps, leaves, and grass clippings is excellent fertilizer: nutritious for the soil, safe for kids and pets, and free!

**Seeds**
Go Organic! Grow From Seed
Then you know where your veggies come from. Organic seed is increasingly available; buy the best you can. One source we love: Seed Savers Exchange at seedsavers.org.

**Crop Rotation**
**Regular ephemeral:**
Nitrogen hogs all, vegetables in the brassica family (cabbage, broccoli) should be preceded by legumes (beans, peas) in your annual crop rotation: legumes' roots replenish nitrogen in the soil for the brassicas to use.

**Pollinators**
Spring is Time to:
Provide for the pollinators!
Early spring flowers feed the bees/flies/insects that will pollinate your vegetable plants later in the season. Squeeze a row of flowers (like sweet alyssum) into the veggie garden!

**Interplanting**
Go Organic: Interplant
Alfalfa and garlic were both planted here last fall. The garlic is headed for a July harvest. Meanwhile, the alfalfa acts as living mulch; tilled under after garlic harvest, it's "green manure" to improve our soil.

**Natural, Non-Synthetic Fertilizers**
Go Organic!
We fertilize with natural, non-synthetic products only. What's safe for your garden? Look for products marked with the OMRI (Organic Materials Review Institute) seal, which means the product is allowed for organic production. Check out omri.org.

**No Till**
Less tilling = less weeds
Every time you till or spade, you expose new weed seeds to light. Instead,

1. Till only the row itself (we use a broadfork or hoe).
2. Cultivate a no-till policy. Use a spade or trowel to dig only where the seed or seedling gets placed.

**Water Conservation**
**Regular Ephemeral:**
Rainwater is a precious resource that should go into your garden rather than into city sewers. Our rain barrel collects water from this roof—this fall, construction begins on a solar-powered irrigation system that will direct rain and lakewater to some of our veggie beds.

**IPM**
Integrated Pest Management
Apples are notoriously difficult to grow organically. Our IPM team has already begun natural treatments to prevent pests. First up: dormant oil spray, which suffocates any insects that may have overwintered.

**Site-Appropriate Planting**
**Regular Ephemeral:**
The problem: Overgrown spruce trees, planted in 1983, cast heavy shade, preventing sun from reaching the veggie beds. The solution: Ten *Pinus flexilis* (limber pines, which bears edible pine nuts) now let the sun shine in.

**Cover Crops**
Plant Cover Crops
Cover crops can be sown in spring, summer, or fall, whenever a bed is fallow. Alfalfa "fixes" nitrogen in the soil; its long taproot breaks up heavy clay. Turned under, it becomes organic enrichment for the soil.

## SUMMER

**At FVG triangle:**

This week in the Fruit & Vegetable Garden

- Now fruiting: paw paws, Asian pears, chokecherries…and the grape arbor.
- The artichokes are awesome!
- Mark your calendar: Heirloom tomato weekend is August 27-28.
- Go organic! We'll post helpful hints and how-to's all season long.

**Interplanting**

Go Organic: Companion Planting

Brassicas ♥ Anise

The flowering herb attracts cabbage moth butterflies away from Brassica family vegetables: broccoli, Brussels sprouts, kale, cauliflower, kohlrabi.

**Mulch**

Go Organic: Mulch Matters

To maximize your potato crop, minimize the heat. Light reflective and weed seed-free, marsh hay mulch keeps soil cool, which is how potato plants like it when it comes to quantity and quality of tubers.

**Crop Rotation**

Go Organic!

Potatoes are planted here—but they weren't last year.

Why rotate your crops?

When the same crop (or even crops in the same family) is in the same spot every year:

1. Soil becomes nutrient depleted.
2. Disease builds up in soil.
3. Plants are less productive, more prone to insect attack.

**Pollinators**

Go Organic: Attract Pollinators

A cutting garden not only keeps vases full, but also attracts bees, butterflies, wasps, flies, and other pollinators to your vegetable plants. A bonus in this bed: every flower here is edible.

**Heirlooms**

Go Organic: Plant Heirlooms

A historically significant variety grown by Thomas Jefferson at Monticello, the Albemarle (or Newtown) pippin is considered one of the best-tasting apples in the world.

**Water Conservation**

Go Organic: Water Knowledgeably

Water veggies in the Solanaceae family—tomatoes, potatoes, peppers, eggplants—at their base rather than from above. Why? The family is descended from desert plants, which makes them more prone to soil/fungal diseases in wet or humid conditions.

Horticulturist's Tips

- When to water: before 10:00 a.m. or after 4:00 p.m. (but not after dark; sunshine is needed for water absorption).
- How to water: deeply and consistently rather than daily.
- How much to water: veggies need 1-2" per week.

How much should you water?

Vegetables need at least 1" of water per week.

If rainfall isn't enough (check your rain gauge), water at the roots of the plants in late morning (when plants absorb moisture best).

**IPM**

Go Organic: Fight pests naturally

Those big, red apples hanging around the orchard? They're apple maggot lures. Pests head straight for the ultra-ripe-looking "apples" only to find themselves snagged by a sticky coating on the outside.

**Site-Appropriate Planting**

Vegetables need sun.

Lots of sun: 8 hours per day.

Watch the sun's movement across your vegetable bed to ensure that shade doesn't reach it during the day. Your crops will be more productive for it.

Go Organic: The right plant in the right site

Virginia peanuts in Illinois? This site gives them what they need:

- South-facing, full sun;
- Well-drained soil (inherent in a raised bed);
- Warm soil—exposed sides heat up, raising soil temps;
- A brick wall that radiates heat at night.

**Build Healthy Soil**

Horticulturist's Tip

Make a path in your vegetable bed and stick to it—when you walk on the soil, every step compresses and compacts it, squeezing out the air inside, and depriving plants of the oxygen they get through their roots.

**Grow From Seed**

Perhaps the simplest way to sow is broadcasting: tossing seeds thickly over a wide area, tamp lightly, water thoroughly. It's the method we used in this bed. The monofilament? An experiment to deter birds.

**Cover Crops**

Go Organic: Plant Cover Crops

As a cover crop, buckwheat gives a lot of bang for your buck. In the 6 weeks from sowing to maturity, it attracts pollinators (bees, wasps), helps prevent erosion, suppresses weeds, and adds phosphorus to the soil once turned under.

# FALL

**At FVG triangle:**
This week in the Fruit & Vegetable Garden

- Fall vegetables are flourishing.
- It's soil prep time: signs posted around the garden tell you how.
- Mark your calendar now for a special winter event: Seed Swap! Join us for a seed swap, seed demos, and more, Sunday, Feb. 26, 2-5 p.m.

## Extend the Season

Go Organic: Keep Your Garden Growing
Fast-growing, cool-weather crops like lettuce, beets, and kohlrabi can be planted in late August/early September, then harvested in October. Fall salads in 50 days or less!

Go Organic: Extend the Season
Fresh salad for Thanksgiving? A cold frame makes it possible. Lettuce and radish seed can be sown up to 2 weeks before first frost (as we've done here) when baby plants are protected by plexi/glass.

Go Organic: Keep Growing
Cold frames aren't just for January—put them to work extending the fall season, growing frost-free onions, leeks, lettuces, beets….

## Succession Sowing

Go Organic: Succession Sow
In spring, this bed grew lettuce.
In summer, this bed grew flowers.
In fall, this bed is growing four kinds of beets—a cool-weather crop that needs just 55 days from sowing to harvest.

## Cover Crops

Go Organic: Plant Cover Crops
How to sow cover crop seed:

1. Rake bed 'til smooth. Remove rocks and debris.
2. Broadcast (toss randomly) seed by hand (1-2 ounces per 100 square feet).
3. Lightly rake again.
4. Water with a fine mist 'til germinated.

Go Organic: Grow Cover Crops
Water gets in, but birds don't: A blanket of floating row cover fabric lets cover crops (crimson red clover for extra nitrogen, winter rye to improve soil structure) germinate in peace.

Go Organic: Plant Cover Crops
Having fed dozens of tomato plants this summer, this soil deserves a cover crop. Alfalfa both breaks up the soil with its long taproot and adds nitrogen to the soil when it's tilled under next spring.

Go Organic: Plant Cover Crops
It's a double cover crop:
Rye will die quickly this winter, blanketing the soil and protecting it from wind and water erosion. Clover will pull nitrogen from the air into the soil, re-supplying it for next spring's crops.

Go Organic: Plant Cover Crops
Alfalfa, red clover, field peas and hairy vetch are all nitrogen-fixing cover crops—that is, they pull nitrogen from the air and store it in root nodules. Tilled under, the plants release the nitrogen to the soil.

## Grow It Yourself

Go Organic: Grow Your Own
Garlic is so easy to grow: In October, break garlic heads into separate cloves; plant large cloves 3-4" deep in well-drained soil. Mulch with straw. Then simply wait 'til next July to harvest the homegrown, incredibly fresh and tasty bulbs.

## Compost/Soil

Go Organic: Compost vs. Clean-up

| Add to Compost | Add to Garbage |
|---|---|
| Tree leaves | Diseased foliage |
| Grass clippings | Molding fruit |
| Stalks, twigs | Insect-damaged foliage |
| Disease-free vegetation | Moldy/spored vegetation |

Fall is the Season to Build Your Soil
Prep your soil for spring by adding compost and mulch in fall.
Why so early?
It takes a few months for the organic matter to break down into the nutrients your veggies will need next spring.

Fall is the Season to Build Your Soil
It's also the season to test your soil, so you know what it needs for optimal health next spring. Need a test kit? See the University of Illinois Extension website at urbanext.Illinois.edu/soiltest.

## Raised Beds

The family that gardens together…planted this raised bed together.
They enrolled in "Let's Grow Together," a School of the Botanic Garden class funded by a grant from SARE (Sustainable Agriculture Research & Education). For more vegetable/cooking/design-related classes, see chicagobotanic.org/school.

## Seed Saving

Go organic: Grow from Seed
It's a seed swap!
Mark your calendar for a winter afternoon of seed swapping (bring your faves!), lots of demos, and Seed Saver Exchange co-founder Diane Ott Whealy's lecture on "Demystifying Heirloom Gardening."
Sunday, Feb. 26, 2012
2-5 p.m.

**WINTER 2011**

## Birds/Wildlife

*Go Organic: Provide for Wildlife*
After harvesting food for your family, leave some plants standing in your veggie beds as food for wildlife families to forage—seedheads, overripe fruit, insect eggs, and berries are all much appreciated.

### Grow From Seed

*Go Organic: Buy Seeds Now*
Winter is the season to plan your garden beds and order from seed catalogs and websites.
Two sources we use:
seedsaverexchange.org
johnnyseeds.com

*Go Organic: Grow From Seed*
Confused about which seeds to buy and grow? We suggest spending a wintry afternoon in our Lenhardt Library, where 500+ nursery/company catalogs and our ever-helpful librarians can make your decisions a little easier.

### Pollinators

*Go Organic: Protect Your Pollinators*
Bees can overwinter successfully if they're sheltered from elements. Inside the hives, ¾" insulation and a foil barrier keep the heat in; outside, bales piled high keep the snow, ice, and north wind out.

### Compost

*Go Organic: Compost, Compost, Compost*
The soil in our new raised beds is straight organic matter (translation: leaves, grass, wood chips and cow manure, aged and well-composted). It comes to us via Ted Krueger of Midwest Organics in McHenry, Illinois (see www.compostmatters.com).

### Soil

*Go Organic: Mulch, Mulch, Mulch*
Three different mulch techniques are used on the beds along this path:

- Green manure/cover crops protect soil while growing in it.
- Leaf mulch (thumb deep) acts like a cozy blanket.
- Straw evens out soil temps and keeps shallow-rooted plants like strawberries from heaving.

### Bio-diversity

*Go Organic: Support Bio-diversity*
Plant something unusual in 2012: here we're planning a crop of quinoa (pronounced keen'-wa), an ancient grain that's naturally gluten-free, that cooks quicker than rice, and that's gaining popularity on American tables.

## ADJUNCT

**Soil Series**

In order to address the sustainable agriculture techniques that we use at FVG, we first need to give visitors a primer about soil. This series of signs was posted in beds 316/317 immediately to the right upon entering FVG. The series remained in place until beds were emptied for winter.

A Soil Primer
How do we grow such beautiful vegetables, and how can you grow them?
The secret is the soil.
In this section of the garden, read about the importance of building healthy soil.

A Soil Primer
Live in an urban area? Never grown veggies in your soil? Do a baseline soil test BEFORE you start planting or amending to see what improvements it REALLY needs. Ask for soil test info at our Plant Information Desk (at the Visitor Center).

A Soil Primer
An ideal soil for growing plants is composed of

- 45% soil aggregates
- 25% water
- 25% air
- 5% organic matter.

The goal is soil that's crumbly enough to anchor plant roots, hold water, and create air pockets where roots can find oxygen.

A Soil Primer
Soil teems with life, both relatively big (ground beetles, millipedes) and microscopic (fungi, bacteria). Together, they decompose the soil's organic matter, breaking it down into the water-soluble nutrients that plants can easily absorb.

A Soil Primer
"Feed the soil, not the crop." –Robert Rodale
By frequently adding organic matter and compost (kitchen/vegetable scraps, grass/yard clippings) to your soil, you are, essentially, returning the same nutrients that your vegetable plants extracted as they grew.

A Soil Primer
While many market products contain synthetic versions of the elements plants need to grow, no product can mimic the life-sustaining processes that occur within healthy soil. Nature gets it right: the best source for plant nutrients is organic matter.

A Soil Primer
Without organic matter, soil becomes nutrient-deficient and lifeless—and the plants that grow in it are less healthy, less productive, more disease-prone. Eco-friendly practices such as composting build soil that's healthy as a whole.

**Buy Locally/Farmer's Market Support Series**

Meet Your Local Farmer
We teach sustainable farming practices to the next generations through our Green Youth Farm and Windy City Harvest programs. Support these farmers-of-the-future—who harvest all the crops here—by buying their produce at our farmers' markets (1st and 3rd Sundays, June through October).

This series of signs introduces the farmer's market speaker for the day. One posted at FVG, one posted on the Esplanade.

Meet Your Local Farmer
Sunday, July 17
10 a.m. and 2 p.m.
Meet Dan Ewing of Xanadu Forests Apiary, who'll explain "Beekeeping Basics."
Under the tent in the Esplanade.

Meet Your Local Farmer
Sunday, August 7
10 a.m. and 2 p.m.
Meet Paul Hardej of City Micro Farms, who'll explain "Aquaponics: Growing Fish and Plants Symbiotically."
Under the tent in the Esplanade.

Meet Your Local Farmer
Sunday, September 4
10 a.m. and 2 p.m.
Meet Bronwyn Weaver of Heritage Prairie Farm, who'll explain "The Critical Role Pollinators Play in Sustainable Agriculture."
Under the tent in the Esplanade.

Meet Your Local Farmer
Sunday, September 18
10 a.m. and 2 p.m.
Meet Kim Snyder of Faith's Farm, who'll talk about "Raising Backyard Chickens and Ducks."
Under the tent in the Esplanade.

Meet Your Local Farmer
Sunday, October 2
10 a.m. and 2 p.m.
Meet farmers from our Green Youth Farm and Windy City Harvest program, who'll talk about "Extending the Growing Season."
Under the tent in the Esplanade.

Meet Your Local Farmer
Sunday, October 16
10 a.m. and 2 p.m.
Meet organic garden coach Lynn Bement, who'll talk about "Backyard Composting Basics."
Under the tent in the Esplanade.

**Intern Program Support Series**

This series of signs was posted in the FVG each Tuesday or Thursday that interns from our Windy City Harvest program presented a talk-and-tour for visitors.

Today's Pop-up Program
"What's Bugging Your Garden?"
Presented by interns from our Windy City Harvest program.
11:30 a.m.
Gather at the giant pumpkin ahead.

Today's Pop-up Program
"Better Together: Companion Planting"
Presented by interns from our Windy City Harvest program.
11:30 a.m.
Gather at the giant pumpkin just ahead.

Today's Pop-up Program
"Getting the Most out of your Compost"
Presented by interns from our Windy City Harvest program.
11:30 a.m.
Gather at the giant pumpkin just ahead.

Today's Pop-up Program
"Benefits of Cover Cropping"
Presented by interns from our Windy City Harvest program.
11:30 a.m.
Gather at the giant pumpkin just ahead.

Today's Pop-up Program
"Backyard Berries"
Presented by interns from our Windy City Harvest program.
11:30 a.m.
Gather at the giant pumpkin just ahead.

**World Environment Day Support**

World Environment Day is June 4
It's a great day to meet the student farmers from our Windy City Harvest program.
Visit their one-Saturday-only farmers' market stand from 11:00 to 4:00.
(Regular farmers' markets begin Sunday, June 5.)

**SARE Adjunct Ephemerals (Seasonal) 2011**
These "extra" ephemerals were also posted in the garden, above and beyond the 15 required for the SARE grant

**SPRING**

What's sustainable: Cover Crops
Cover crops are a natural/organic/non-synthetic way to make healthier soil. You'll see several beds of alfalfa sprouting now—sown late last fall, it will be tilled under in early spring to add nitrogen to the soil.

It's sustainable: Intercropping
Garlic and alfalfa were planted together here last fall. Garlic will be harvested this July; until then, alfalfa will be kept trimmed short, then tilled under to add much-needed nitrogen to our heavy clay soil.

It's sustainable: Planting Cover Crops
Cover crops are a natural/organic/non-synthetic way to make soil healthier. You'll see several beds of alfalfa sprouting now—sown late last fall, it'll be tilled under in early spring to add much-needed nitrogen to our heavy clay soil.

What's sustainable: Amending the Soil
Having produced a bumper crop of potatoes last year, this soil deserves a treat: a cover crop of alfalfa. Tilled under later this spring, it will add much-needed nitrogen back into the soil.

**At Triangle Bed leading to FVG:**
This Week in the Fruit & Vegetable Garden

- Diminutive daffodils 'Jumblie' and "little Beauty' are putting on a show under the apple trees.
- The cool-weather crops are in!
- Go organic! We'll post helpful hints and how-tos all season long.

Horticulturist's Tip
This is a wet spring.
Overcome the temptation to work your soil--it destroys the soil structure that you've worked so hard to build up in previous seasons.

**SUMMER**

Vining cucumbers get a lift from a 2-sided trellis made from a bent section of cattle fence:

- It prevents rot by lifting fruit off the ground.
- It prevents mildew by providing extra air circulation
- It provides support while letting fruit hand through the fence.

Three tomato trellises:
#1 Cages
Sturdy and stackable, these Minnesota-made aluminum cages are a big improvement on often-flimsy, too-short supports.

Three tomato trellises:
#2: Stake-and-Weave
Inexpensive and easy, twine woven in a figure eight from stake to stake creates plenty of support for each pair of tomatoes. Add a layer of twine every 10-12" as the plants grow.

Three tomato trellises:
#3: T-posts with metal farm supply grid Long-lived and practically indestructible, metal grids can support all manner of climbers. Tomato vines spiral up a length of twine tied between the grid and a simple tomato clip.

Rainwater is a precious resource that should go into your garden rather than into city sewers. Our rain barrel collects water from this roof—this fall, construction begins on a solar-powered irrigation system that will direct rain and lakewater to some of our veggie beds.

Feed Your Soil
Got clay? So do we. While clay has its benefits (moisture-retentive, nutrient-rich), we've been working for years to amend our beds with organic matter. By building soil from the top down, you eventually create an ideal medium for vegetables to grow in.

**FALL**

Don't overwork your soil in spring. Fall is the season to amend with compost, manure, and trace minerals—then nature's freeze/thaw cycle has months to work its decomposition magic. Properly prepared in fall, a vegetable bed should be seed-and-seedling-ready in spring.

**(Introductory tulip sign sets the stage for the 2 pollinator signs below.)**
Anticipation keeps a gardener going through the winter. In these beds we've planted early, mid-season, and late tulips—3,000 of them, all in white—for an elegant 6-week display of blooms, much anticipated here next spring.

Go Organic: Plan for Spring Pollinators
Why plant tulips in the Fruit & Vegetable Garden?

- They'll attract the early pollinators in spring.
- Their petals are edible.
- They're gorgeous.

Go Organic: Plan for Spring Pollinators
November is the month to plant bulbs for next spring.

- Soil temperatures are cool, so bulbs won't sprout.
- Soon-to-be-frozen ground lessens the chances of critter-digging.
- Bulbs get the cool dormancy—called vernalization—they need to bloom