Cooperative Agriculture

2018 Program Plan

by Elena Peabody

Draft edition:
9/17/2018

Preface.
A quick note.

In the winter of 2018, I created a plan for a cooperative gardening project in Bed-Stuy.

It was fully implemented by 15 farmer-families, who graciously allowed me to lead them. The following is my summary of what we did, our successes, areas for improvement, and things we'll tinker with in the future. Like our cooperative garden, this document is a work in progress. Once complete, I hope it will serve as a guide and reference for other gardens that may find this model and the legwork we've done useful.

It is a true labor of love and is meant to be shared.

I plan to have the guide completed by early 2019 and to disseminate it to other communities via friends and colleagues committed to urban agriculture and the fight against hunger.

The Flagship Ag Bed at Myrtle Village Green in the Bed-Stuy neighborhood of Brooklyn.

Contents.

1. Introduction.

The Cooperative Agriculture Beds at Myrtle Village Green place emphasis on food-production, skills development, and mentoring.

The Cooperative Ag program is comprised of three beds: the Flagship Ag Bed, Traditional Mexican Ag Bed, and Traditional Bengali Ag Bed. These beds total over 2,000 square feet and are farmed by 20+ farmer-families, who grow together and share the harvest.

The Flagship Bed

The largest of the three beds, the Flagship Bed, uses the model outlined in this guide. In 2018, I created a detailed plan for food production in the Flagship Bed and worked closely with gardeners to implement it during the season.

What was created is made to be shared with other communities interested in growing for pleasure, combating hunger, or both. It is a rigorous and tightly-planned program.

Currently, the Flagship Bed is 1,500+ square feet and gardened by 15 volunteer farmer-families representing 57 men, women and children. The bed feeds additional community members for a grand total of 80 individuals, a number we hope to increase in 2019.

Volunteer farmer-families tend crops using vertical growing techniques, intensive and succession plantings, as well as season extenders.

Objectives for the Flagship Bed are four-fold:

1. **Feed farmer-family households**: Increase access to fresh, affordable, nutrient-dense food for community members.

2. **Embrace inclusivity**: Continue to expand a program welcoming of growers from all cultures and all levels of experience, providing opportunities for learning and mentorship that embrace inclusivity.

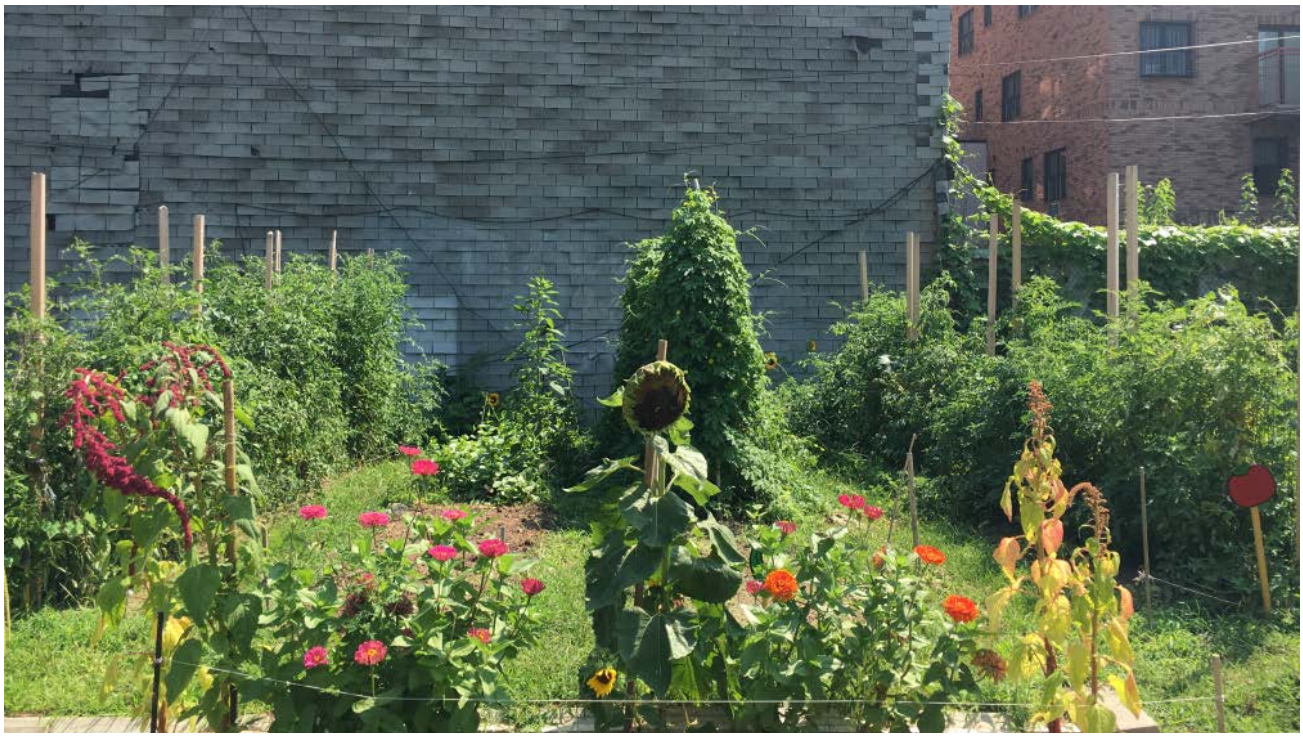
3. **Ensure program continuity**: Monitor and improve soil health and fine-tune growing techniques so the program continues to serve as a reliable source of food; keep careful records to codify learnings and encourage skill development season-over-season.

4. **Share our learnings**: Share our knowledge so the program may be replicated in other communities that would benefit from it.

History

In early 2016, Myrtle Village Green, a massive 20,000 square-foot community garden in Bed-Stuy, created a space to host cooperative gardening. During the 2016 and 2017 seasons, under the leadership of Sam Tresler, several farmer-families worked together to complete construction of the Cooperative Ag Bed (the Flagship Bed), shared the harvest, and prototyped best practices for cooperatively farming the plot.

Since then, the program space and farmer-family involvement has doubled, expanding past the Flagship Bed to two additional beds growing international crops: the Traditional Mexican Bed and the Traditional Bengali Bed. While the two latter beds do not follow the program as laid out in this guide, all three beds have the shared intent of growing loads of nutrient-dense produce for families in a



A view of the Flagship Bed in mid-summer.

rapidly gentrifying neighborhood with a rising cost of living; and providing an educational environment to share farming methods amongst a culturally diverse member base.

Today, the entire effort is an impressive 2,000 square feet of intensive gardening. We are indebted to Myrtle Village Green for their support of our program, as well as for specific contributions including access to compost and water.

2. How it works.

A major goal of this project is to document our processes and practices, both to enable future improvements and to share with other communities.

Program Overview

Planning

- Gardeners from all backgrounds and all skill-levels are welcome. Mentorship is available for new gardeners.
- The Ag Bed volunteers collectively decide what crops to grow.
- A crop plan for the entire season is worked out during the winter months.

Growing

- Food grown in the Ag Bed is communal; no personal food is grown in the bed.
- Farmer-families should commit to tending crops a *minimum* of three hours per week, with more time given during designated workdays.
- Farmers tend individual crops, scout for pests and disease, report problems, weed crops, and share the food they grow.
- Only crops specified in the agreed-upon plan are grown in the bed.

Harvesting

- Harvesting takes place on Friday afternoon or Saturday morning; some items are available for self-harvest.
- Harvested food is placed in a camping cooler, which is contained inside an insulated lock-box; all farmer-families have a key to the lockbox.
- During the growing season, an email/text goes out every Friday or Saturday morning to let everyone know what is in the cooler and box.

Distribution

- Each farmer-family is responsible for their own food pickup.
- Harvest weight is tracked for each crop (the weight of self-harvested items is estimated).
- A checklist is provided for farmers to indicate they have received their share.
- Each farmer-family is ultimately responsible for deciding how much of the total harvest to take. However, shortages were only an issue very early in the season.
- A waitlist is established at the start of the season. Gardeners on the waitlist are welcome to join if anyone needs to drop out.

The Harvest

We estimate when vegetables will be ready for harvest based on the sowing date and the "date to maturity" listed on a vegetable's seed package/personal experience.

Based on our 2018 plan we estimate we'll have harvests available on the dates shown in the subsequent table.

Harvest Season	Harvest Window	Crops
Spring Harvest	6/1 – 7/8	*Some combination of*: Arugula, Baby Lettuce, Bush Beans, Garlic Scapes, Mizuna, Radish, Summer Squash, Tatsoi, Zucchini, Herbs or Flowers
Summer Harvest	7/13 – 9/16	*Some combination of*: Bitter Melon, Carrots w/ greens, Cucumber, Eggplant, Garlic, Komatsuna, Malabar Spinach, Melon, Okra, Pepper, Squash Leaves, Summer Squash, Tomato, Zucchini, Herbs or Flowers
Fall Harvest	9/21 – 11/22 (*expected*)	*Some combination of*: Beets w/ greens, Carrots w/ greens, Eggplant, Kale, Lettuce, Mizuna, Peas, Pepper, Radish, Tomato, Turnip, Herbs or Flowers

Seasonal harvest summary.

An Ag Bed volunteer watering some of our pepper plants.

3. Gallery

A look at the project's work and how it progressed.

A typical mid-summer harvest: squashes, cucumbers, melons, peppers, tomatoes, eggplant, and edible flowers.

Project planning began in January 2018.

Ag Bed signage was not designed to be cute. Our volunteers speak four languages, so visual representation is critical.

More than 300 seed starts were propagated in my home.

A bitter melon seedling.

Tomato starts, interplanted with mizuna.

Harvests remained diverse throughout the season.

Garlic bulbs grown and harvested by the Ag Bed team.

Ag Bed volunteers planting fall crops.

An Ag Bed volunteer with the carrot harvest.

An Ag Bed volunteer harvesting bitter melon.

Bitter melon seeds.

A medley of early summer tomatoes.

4. The Plan.

A down-to-the-inch look at what we did in 1,500+ square feet.

Overview

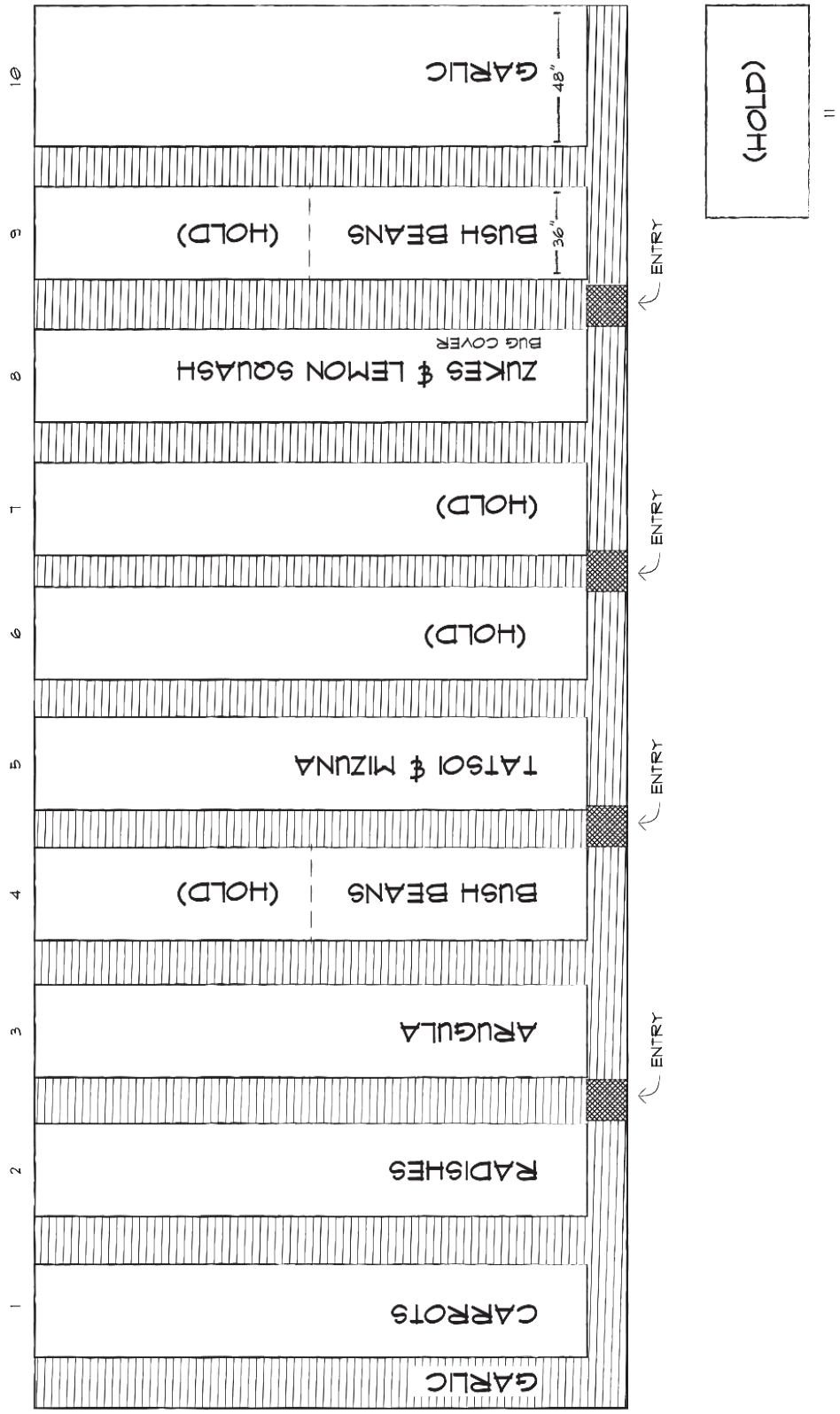
- The Flagship Cooperative Bed is made up of planting areas also called Beds. Most Beds are 25′ × 3′ wide and numbered 1–10. There is an additional 8′ × 4′ raised bed, numbered 11.
- Each Bed is divided into three major seasonal crops.
- Seasonal crops are: spring, summer, fall and are noted after the Bed number as a,b,or c.
- For example, "1a" refers to Bed number 1 spring planting; 5b refers to Bed 5 summer planting, and so on.
- Seasonal crops are further broken into Plantings, to ensure a rolling harvest.
- Plantings vary in size and number according to the crop.
- Some crops only have one planting.
- The number of rows per bed and seed spacing are noted in the Intensive Spacing column.
- Yields have been figured assuming 100% germination/production and 75%.
- Distribution amounts are based 20 farmer families, per week.

Details about the crops, including their spacing, planting cadence, and expected maturity are contained in the subsequent illustrations and tables.

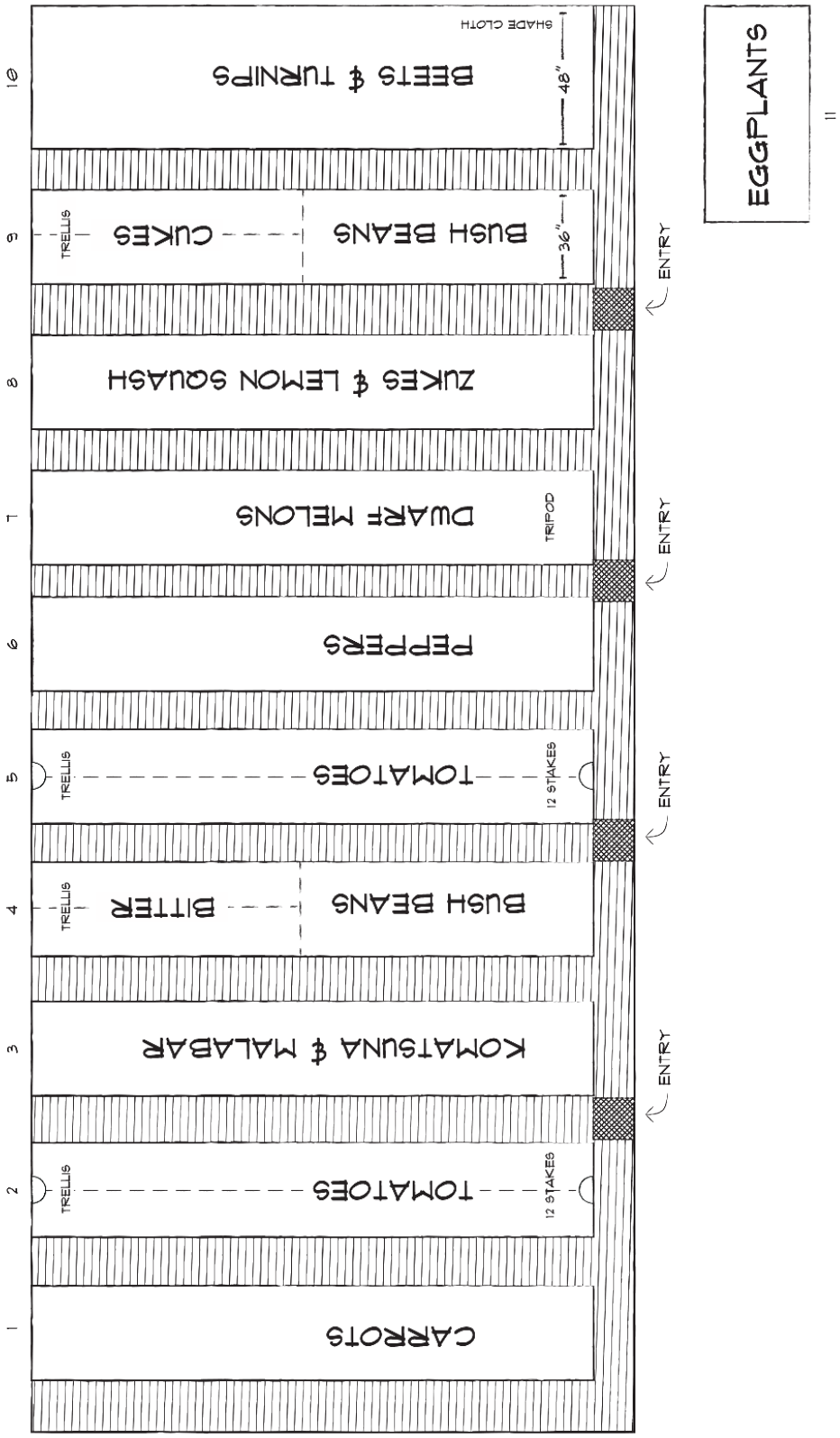
Turnips growing under shade cloth in August.

Harvesting tomatoes.

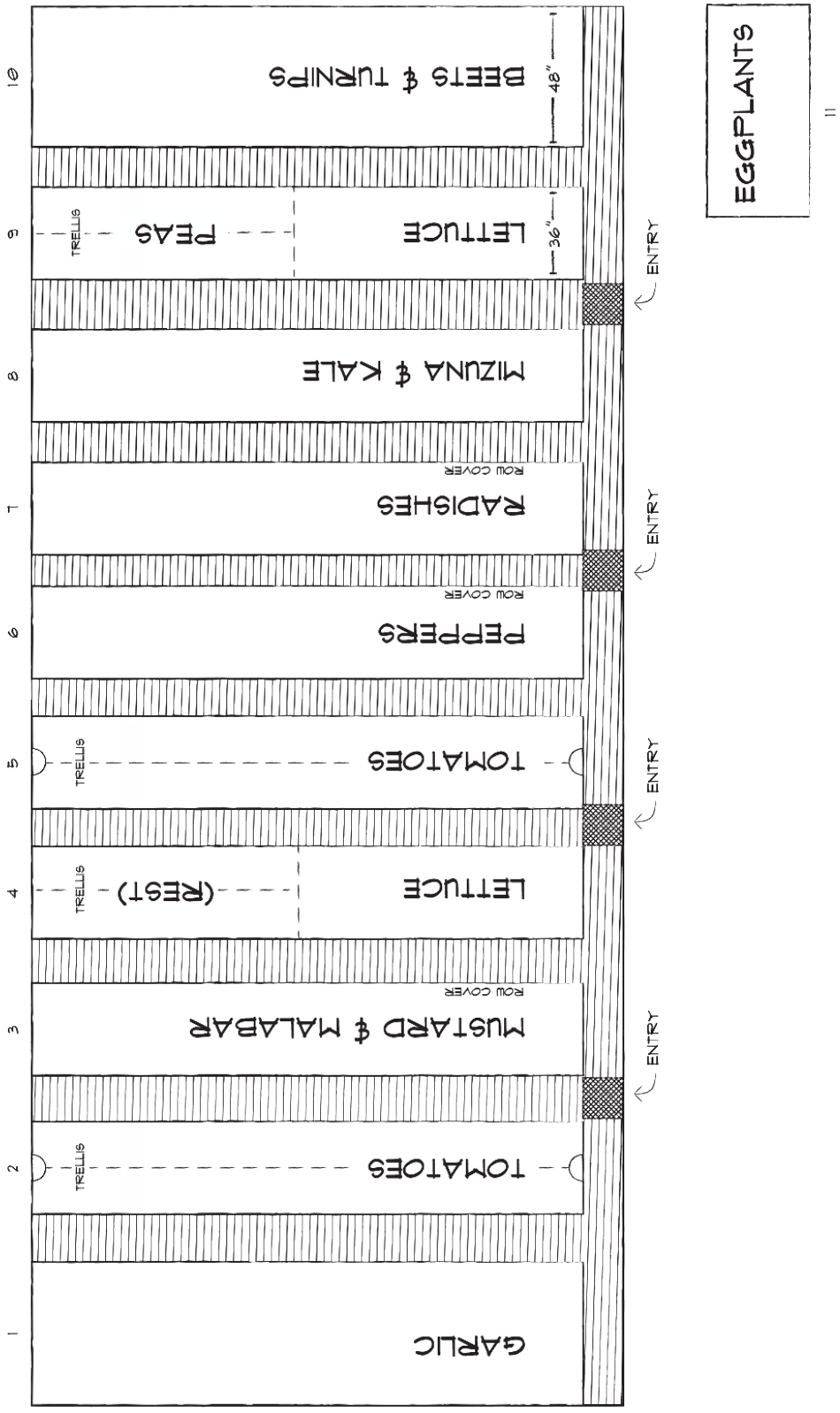
Spring Planting



Summer Planting



Fall Planting



Planting Table: Bed 1

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
1a/b	Carrots, Nantes	Rows: 4 Seed: 1'' Thin: 3''	1st*	200 — 2 rows	Compost Epsoma	4/14	Direct	70*	7/13 & 7/14	10 p/p	7 p/p
			2nd**	200 — 2 rows	Compost Epsoma	4/28	Direct	70	7/7 & 7/8	10 p/p	7 p/p
			3rd***	200 — 2 rows	Compost Epsoma	7/7	Direct	80	9/22 & 9/23	10 p/p	10 p/p
1c	Garlic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
2a	Radishes, Mixed	Rows: 4 Seed: 1.5″ Thin: 3″	1st	400 — 4 rows	Compost Epsoma	4/7	Direct	28	5/5 & 5/6	20 p/p	15 p/p
2b	Tomatoes (Black Beauty, Grn. Vern.)	Rows: 2 Seed: 12″	Single	25— 2 rows	Compost Epsoma Fish Em	3/14	5/12 — 60 days	70 from transplant	week-ends 7/13 through 9/29	3 per plant/ week = 75 4 p/p per week	Lower rate built into this estimate
2c	—	—	—	—	—	—	—	—	—	—	—

Planting Table: Bed 3

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
3a	Arugula/ Baby Lettuce	Rows: 6 Seed: 3'' (arug) 6'' (baby)	Single	300 arug 150 spin — 3 rows of each	Compost Epsoma Fish Em	4/1	Direct	35	5/5 & 5/6	Arugula: 15 p/p Lettuce: 7 p/p	Arugula: 12 p/p Spinach: 5 p/p
3b	Komatsuna/ Malabar Spinach	Rows: 6 Seed: 6'' (kom) 18'' (spin)	Single	150 kom 40 spin — 3 rows of each	Compost Epsoma Fish Em	6/1	Direct	40	7/14-7/21 / 7/28	Kom: 7 p/p Spinach: 2 p/p	Kom: 5 p/p Spinach: 1 p/p
3c	Giant Red Mustard/ Malabar Spinach	Rows: 3 Seed: 6''	Single	150 Must 40 Spin	Compost Epsoma Fish Em	8/24	Direct	50	10/13 &10/14 / 9/15 & 10/27	Must: 7 p/p Spinach: 2 p/p	Must: 5 p/p Spinach: 1 p/p

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
4a/b front	Bush Beans	Rows: 3 Seed: 4″	1st*	75 — 1 row	Compost	4/1	Direct	56	week-ends 6/2 through 7/1	20+ lb./week 1+ lb. p/p per week	Lower rate built into this estimate
			2nd**	75 — 1 row	Compost	4/28	Direct	56	week-ends 6/23 through 7/22	20+ lb./week 1+ lb. p/p per week	Lower rate built into this estimate
4b back	Bitter Melon	Rows: 2 Seed: 12″	Single	20	Compost Epsoma Fish Em	5/5	Direct	80	week-ends 7/21 through 9/29	1 per plant/ week 1 p/p per week	
4c	Red Lettuce	Rows: 3 Seed: 6″	Single	150	Compost Epsoma	9/15	Direct	28	10/13 & 10/14	7 p/p	5 p/p

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
5a	Tatsoi / Mizuna	Rows: 2 Seed: 2'' Thin: 6"	Single	150 each	Compost Epsoma	4/1	Direct	40	5/12 & 5/13	7 p/p	5 p/p
5b	Tomatoes — (Solar Flare, Barry's Cherry)	Rows: 2 Seed: 12''	Single	25	Compost Epsoma Fish Em	3/14	5/12 – 60 days	70 from transplant	week-ends 7/21 through 9/23	4 p/p per week	Lower rate built into this estimate
5c	—	—	—	—	—	—	—	—	—	—	—

Planting Table: Bed 6

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
6a	N/A	—	—	—	—	—	—	—	—	—	—
6b	Peppers	Rows: 3 Seed: 12''	Single	75 — 3 rows	Calcium Compost Epsoma Fish Em	3/14	5/12 – 60 days	120	week-ends 7/14 through season end	5 lbs. / week .25 lbs p/p per week	Lower rate built into this estimate
6c	N/A	—	—	—	—	—	—	—	—	—	—

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
7a	N/A	—	—	—	—	—	—	—	—	—	—
7b	Dwarf Melons— Kajari Madhu Ras Sugar Lump	Rows: n/a Seed: 18″	Single	20	Compost Epsoma Fish Em	Direct	6/2	70	week-ends 8/4 through 9/22	5 melons per week total	Lower rate built into this estimate
7c	Radish`	Rows: 4 Seed: 1.5″ Thin: 3″	1st	200 — 2 rows	Compost Epsoma	9/23	Direct	28	10/20 & 10/21	10 p.p	7 p/p

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
8a/b	Summer Squashes: Lemon, Crook Neck, Zucchini	Rows: 2 Seed: 18''	Single	32 total	Calcium Compost Epsoma Fish Em.	5/5	Direct	55 days	week-ends 6/30 through 9/8	3 per plant/ week= 96 4 p/p	3 p/p
8c	Mizuna / Kale	Rows: 4 Thin: 12''	Single	24/24 total — 4 rows	Compost Epsoma Fish Em.	9/15	Direct	60	11/10 & 11/11	Mizuna: 1 p/p Kale: 1 p/p	Mizuna: .75 Kale: .75

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
9a	N/A	—	—	—	—	—	—	—	—	—	—
9a/b front	Bush Beans	Rows: 3 Seed: 4″	1st*	75 — 1 row	Compost	4/1	Direct	56	week-ends 6/2 through 7/1	20+ lb./week 1+ lb. p/p per week	Lower rate built into this estimate
			2nd**	75 — 1 row	Compost	4/28	Direct	56	week-ends 6/23 through 7/22	20+ lb./week 1+ lb. p/p per week	Lower rate built into this estimate
9b back	Cucumbers	Rows: 2 Seed: 12″	Single	20	Compost Epsoma Fish Em	5/5	Direct	80	week-ends 7/29 through 9/15	2 per plant / week 2 p/p per week	1 p/p per week
9c back	Peas	Rows: 2 Seed: 1″	Single	240	Compost	9/15	Direct	*TBD*	*TBD*	10 lb. / week 1/2 lb. p/p per week	Lower rate built into this estimate

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
10a	Garlic	—	—	—	—	—	—	—	7/14 harvest 7/28 distro	250 units	190 units
10b	—	—	—	—	—	—	—	—	—	—	—
10c	Beets/ Turnips	Rows: 4 Seed: 12'' (beets) Seed: 6'' (turnips)	Single	50/ 100	Compost Epsoma	7/21	Direct	80/ 70	10/6 & 10/7 / 9/29	Beets: 3 p/p Turnips: 5 p/p	Beets: 1 p/p Turnips: 3 p/p

Bed #	Crop	Intensive Spacing	Planting	Target # of plants	Soil	Sow Date	Days to transplant	Days to Mature	Harvest Date	100% Yield / per person	75% Yield
11a	N/A	—	—	—	—	—	—	—	—	—	—
11b	Eggplant	Rows: 3 Space: 18″	Single	20	Compost Epsoma Fish Em	3/25*	6/2 – 50 days*	100	week-ends 7/26 through 11/2	1 per plant/ week 1 p/p per week	Lower rate built into this estimate
11c	N/A	—	—	—	—	—	—	—	—	—	—