

Production for CSA

"I don't think our CSA would have been as successful if we hadn't already been farming for a few years. We knew what grew well on our land and what people liked at the market."

—Sue Temple, *Fiddler's Green Farm*

CSA members learn to accept the constraints faced by a farm, and that they can't have sweet corn in April. However, they won't be satisfied with only one or two choices of vegetables per week, and most won't know what to do if you give them 20 pounds of cabbage all at once. To help guide farmers through the issues of producing for a CSA, this chapter covers:

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Creating Your Harvest Plan

This section includes information to help you decide what to provide and how and when to provide it.

Prospective members will want to know what they can expect from the CSA. You need to tell them what you will raise, when it will be ready, and how much they can expect to receive.

This section will help you plan your shares. There are questions to consider which apply to all CSA projects, as well as specific information for CSAs which provide produce. The next two sections discuss crop production and animal products.

The major issues when planning production for your CSA are:

- ✦ What are you going to provide?
- ✦ How long is your season?
- ✦ How many people can/will you support?
- ✦ How will you organize your harvest?

WHAT ARE YOU GOING TO PROVIDE?

Potential items for your CSA:

Fruits

Vegetables

Nuts

Beef

Poultry

Other Meats

Milk

Eggs

Flowers

CSA projects can and do provide nearly anything. Most CSAs raise a variety of products. By providing members with as large a part of their diet as possible, you invest them more in the project and your farm. In addition, diversifying your production can spread your work out over the season. Choose some products which need the most work in the spring, and others which you handle in the summer and fall. Diversification also reduces your dependence on any one product. If one should fail, there are others to fall back on.

ANIMAL PRODUCTS

If you are offering shares from a diversified farm, then it is best to have separate arrangements for each type of product. One CSA arrangement distributes the fruits and vegetables,

Animal products are more regulated than fruits and vegetables.

another sells the milk, another the eggs, etc. Of course, many members will overlap. The point is to offer them separately because of people's dietary habits. When you offer them separately, then you need to account for the costs separately, too. You can also have discounts for, say, your egg buyers who are members of the produce CSA, too.

EXAMPLE:

Your farm supplies 55 shares at \$110 per quarter per share. In addition, 22 members are part of your egg CSA, and pay \$20 per quarter to receive about a dozen eggs per week.

WHAT TYPES OF SHARES WILL YOU OFFER?

You do not have to offer only one type of share. Many CSAs offer two or even three types. They vary by type of products, size and seasonality.

BASIC & GOURMET

One way to cater to customers is to offer different styles of produce shares. Some CSAs offer both "Basic" and "Gourmet" shares. The Basic share concentrates on produce used most often by Americans: potatoes, onions, broccoli, tomatoes, peppers, lettuce, etc. The Gourmet share has all these items, but also includes the less familiar: arugula (*rocket*), jicama, Japanese eggplant, kohlrabi, fresh herbs, etc. Generally, the amount of food in each type of share is about the same. However, because of the specialty vegetables, you can charge more for a Gourmet share.

SIZE

Another aspect of the share to vary is the size. Nearly all CSAs offer both whole shares and half shares (*some even quarter shares*). The whole share might be enough for a family of four or five, whereas the half share might feed two or three, or a larger household that eats fewer vegetables.

*Balance your
members' needs
and your
own — you
can't do
everything.*

With half shares (*and quarter shares*), you need to decide how much to charge and who will divide the shares. If your members are participating in creating the CSA, including the payment schedule, then they will help make this decision. If you are putting the CSA together, then here are some suggestions:

PRICE

Most CSAs who have half shares charge a more than half the price of a full share. If a full share is \$500, a half share might be \$260 or \$270. This pays for the extra administrative costs.

DIVIDING

Either you can divide the whole share into halves, that is, pack half shares separately, or you can pair all the half-sharers together, and let them be responsible for dividing the share. **Remember that you cannot do everything for your members.** Dividing shares takes time away from other things, whereas letting them divide the shares fosters contact between members.

SEASONAL SHARES

A final way of offering different types of shares is to have seasonal shares. Some people may enjoy growing a summer garden, but find planning for the winter too much of a hassle. You may also find that you want to supply fewer people in the winter than in the summer. In these cases, you can break down your shares into Summer and Winter, or Year-round and Winter only. You will also need to figure out the share prices separately.

HOW LONG IS YOUR SEASON?

The length of your season is first determined by what you are offering. However, there are many techniques and strategies for extending the harvest season.

Given these methods of season extension, the length of your season is also determined by your interest. Even if you can grow produce year-round, you may still want to take some time off in the winter. In addition, you can manage your crops so that you

fill winter shares with previously harvested produce from cold storage.

The next chapter includes suggestions for maintaining a constant harvest throughout your growing season.

At any rate, you should have a good idea of how many weeks in the year you intend to offer shares, and inform members of this from the start.

HOW MANY PEOPLE CAN AND WILL YOU SUPPORT?

How many people you provide with shares depends on how much land you will farm and how much it can produce. **Produce CSAs provide between five and fifteen pounds of fruits and vegetables per share per week, averaging about ten pounds.** This is a very general figure. Share weights change a lot from season to season, and also from project to project.

Another measure of how much to offer is produce value. **Share prices tend to be between \$10 and \$15 per week per share.**

For other products, you'll need to find out how much your members consume. They might use a half-dozen eggs per person per week, or just a couple. They might need a gallon of milk, or a pint. Meat consumption will also be very different.

The following table gives some information about produce shares. It shows how much CSAs offer per share for different items. These are total values, that is, how much the CSAs gave their members per share over the whole season, whether it was 28 weeks or the whole year. In addition, CSAs don't generally provide all these items.

Some of the numbers were figured from lists that CSAs around the country have made available. Some numbers are from a Rodale Institute study in the eastern US. Others are from the CSA project at the Waldorf School in Davis, California. As you can see, the results were very different. The best they can do is give you a starting point for planning your CSA.

CSAs provide an average of ten pounds of produce per week.

Share prices tend to be between \$10 and \$15 per week.

**TOTAL AMOUNTS MEMBERS RECEIVED
FOR THEIR SHARES**

A M O U N T S P E R S E A S O N

CROP	AVERAGE PER SHARE (#)	RANGE PER SHARE (#)	AVERAGE RODALE STUDY (#)	PROJECTED DAVIS WALDORF SCHOOL (#)	COMMENTS
Alfalfa sprouts	2	1 - 4	2.8 (all sprouts)	-	
Arugula	3.5	2 - 5	0.1	7	
Asparagus	5	2 - 10	0.6	-	
Basil	6	2 - 15	1.1	6	
Beans, dry	-	-	0.5	-	
Beans, gr	14	5 - 20	23.7	24	pole and bush
Beans, wax	-	-	2.2	-	
Beets	18	10 - 30	1.3	48	roots and greens
Bok choy, pak choy	5	3 - 10	1.7	20	includes tat soi
Broccoli	15	10 - 20	4.2	42	
Brussel sprouts	5	2 - 10	0.1	-	
Cabbage, chinese	10	5 - 20	4.3	12	
Cabbage, green	14	5 - 20	} 30.5	12	
Cabbage, red	3	2 - 10		-	-
Cantelope	11	3 - 15	-	36	
Carrots	40	20 - 80	6.5	88	
Cauliflower	6	5 - 10	-	28	
Celery	6	2 - 10	-	-	
Chard	10	5 - 15	2.1	10	
Corn	6 doz	2 - 12 doz	-	4 doz	
Cucumbers	14	5 - 25	4.4	40	
Daikon	1	1 - 5	-	-	
Eggplant	4	2 - 10	13.2	16	
Fennel	1	1 - 3	0.2	-	
Garlic	2.5	1 - 5	0.6	8	
Herbs	14 bun	5 - 25 bun	2	12	cilantro, dill, tarragon, rosemary, etc.
Kale and collards	8	5 - 15	1.7	26	weights added together if CSA produced both
Kohlrabi	4	2 - 10	-	40	
Leeks	7	2 - 10	-	40	
Lettuce	37 ea	20 - 60 ea	9.2 (inc. Romaine)	64 ea	
Mustard	5	2 - 15	-	5	
Onions, bunch	9 bun	4 - 15 bun	-	-	

This table gives total amounts for each produce item that members received over the whole season.

These numbers are from several sources, and are offered as a suggestion for planning CSA production.

*No farm
produced all
these items.*

A M O U N T S P E R S E A S O N					
CROP	AVERAGE PER SHARE (#)	RANGE PER SHARE (#)	AVERAGE RODALE STUDY (#)	PROJECTED DAVIS WALDORF SCHOOL (#)	COMMENTS
Onions, dry	27	10 - 60	19	24	when not specified, assumed dry onions
Parsley	5	1 - 10	-	9	
Parsnips	6	5 - 15	-	-	
Peaches	-	-	2.7	-	
Pears	-	-	5.5	-	
Peas, sugar	8	2 - 20	5	24	
Peppers, sweet	8	5 - 15	4.8	48	
Peppers, hot	1	0.5 - 2.0	0.6	4	
Potatoes	55	20 - 100	45	48	
Pumpkins	2 ea	1 - 5 ea	-	20	
Radishes	14 bun	2 - 20 bun	1.8	10 doz	
Rutabagas	10	5 - 15	-	12	
Salad mix	20	5 - 25	2	-	
Spinach	10	5 - 25	2.2	12	
Squash, summer	19	15 - 30	0.9	60	
Squash, winter	35	5 - 70	0.4	36	
Strawberries	-	-	3.3	-	
Sweet potatoes	10	5 - 25	-	-	
Tomatoes, slice	35	10 - 80	52.5	40	
Tomatoes, cherry	-	-	-	-	
Turnips	5	2 - 15	1.4	64	roots and greens
Watermelons	6	2 - 10	-	24	

COLUMNS 2 AND 3 FROM THESE FARMS:

- Sample midwest farm (*Community Related Agriculture*. Kimberton, PA: Bio-dynamic Farming and Gardening Association, Inc., 1990)
- Simpleton Farm, OR (in Jered Lawson. *Community Supported Agriculture; A Reader*. Unpublished, 1992.)
- Smokey House Project, VT (in Lawson.)
- Snow Baker Farm, VT (in Lawson.)
- Kimberton, PA (Trauger Groh and Steven McFadden. *Farms of Tomorrow*. Kimberton, PA: Bio-dynamic Farming and Gardening Association, Inc., 1990.)
- Moore Ranch, CA coast (in Lawson.)

COLUMN 4 FROM:

Rochelle Kelvin. *Community Supported Agriculture on the Urban Fringe*. Kutztown, PA: Rodale Institute Research Center, 1994.

COLUMN 5 FROM:

Kimi Walsh at Garden Moon Farm, Davis Waldorf School.

WHO DOES THE HARVESTING?

This may seem obvious: *the farmer harvests the crops*. However, many CSAs have members help harvest at one time or another.

For some, working members help in the field regularly. They may come for two to four hours a week, for example on harvest day to help get the shares ready. This regular help alleviates the labor crunch that the farmer faces at key times.

Other CSAs use members just to harvest some crops. These crops fall into several categories:

LABOR-INTENSIVE

Quite a number of CSAs have members harvest green beans and peas, because the farmer's labor is better spent in other activities. A compromise approach is to harvest maybe a half-pound per share, and allow those who want more to pick the rest themselves.

SPECIALTY

For high-value, delicate, or special products, you might have members pick their own. One example is flowers. You might grow flowers to attract beneficial insects, then let members who come to the farm pick bouquets from these insectary patches. Another common example is berries. You may not want to pick raspberries or blackberries for everyone, but you can grow them (or direct members to the wild ones) and let people pick what they want.

OCCASIONAL

One occasional crop is Jack-o-lantern pumpkins. You can grow a patch for your big harvest celebration, then turn the kids (*and adults*) loose to find just the right pumpkin for Halloween. The other example of occasional harvesting is when the farm has a crisis. If a freeze is coming, you can mobilize several members to help you bring in a crop for storage so you don't lose it to the cold. Since the harvest is not *yours* but belongs to the whole membership, some members will be willing to help save *their* crop.

*Members who
participate
tend to stick
with the CSA.*

If you have speciality or occasional crops, you should decide whether they are included in the share price or they need to be paid for separately (*as in a U-pick operation*).

All of these options bring CSA members to your farm. They will need to be shown where to pick, what ripe products look like, and how to pick them. They will also need to know about farm safety, about how to behave around animals and tractors and how to use tools safely. For information on these and related issues, see the chapter titled *Members*.

WHEN DO YOU HARVEST?

Several questions to consider are: which day of the week will you harvest? what time of day? when will you harvest winter storage vegetables?

Deciding when to harvest goes along with deciding when to deliver. If you deliver 50 shares on Tuesday evening to a city an hour away, then you can harvest Tuesday morning. If you make early-morning deliveries, especially to someplace farther away, then you will probably want to harvest the day before.

Note, too, that harvesting in the morning is preferred. Produce has less field heat in the morning. You need less energy for subsequent cooling and the produce has a longer post-harvest storage life.

HOW WILL THIS FIT OTHER FARM OPERATIONS?

Creating a CSA arrangement that fits your farm means considering crop choices, harvest strategies and handling methods.

CROP CHOICES

You can approach CSA crop choices from two directions. You can use the project to diversify your production, for example moving into vegetable crops instead of producing tree fruit exclusively. Alternatively, you can raise the same things, but sell them through a CSA as well as your other outlets.

HARVEST STRATEGIES

You need to manage your harvest so that products leave your farm fresh and ripe. You should also make certain that you have enough products to fill all your shares each delivery date.

Many crops need to be harvested often for peak quality. If your CSA only picks up shares once a week, and you need to harvest several times a week, then you need to plan how to handle these other harvests. You can:

- ❶ Have two (*or more*) pick-up days, and divide your CSA members so that some pick up on one day and others pick up three or four days later.
- ❷ Plan the CSA share day to balance out other marketing channels. If share pick-up is Friday, then on Monday or Tuesday do a farmers' market, or deliver to a wholesaler or retailers. This **marketing diversity** helps stabilize your farm income.
- ❸ Store the harvest until pick-up day. For more help, see ***Crop Production for CSA (pages 14 to 25)***.

As for filling all your shares, this is only an issue for **subscription CSAs**. For **shareholding CSAs**, you divide up whatever is ready between your members. How much they get depends on the harvest. Subscription arrangements, however, pledge a share of a certain dollar value. You need to monitor your crops closely to be certain to have enough to fill these share commitments.

Two strategies to make it easier to fill your subscription shares are:

- ✓ Have other marketing outlets
- ✓ Have a reserve of less perishable products

If you sell through other outlets, you can add or subtract what you sell there to be certain to fill all your shares. Having a reserve of less perishable products, such as dried fruit, nuts or storage fruits and vegetables (*garlic, onions, apples*) allows you to add these items if necessary to bring the share up to its promised value.

*Plan your CSA
and other
outlets so as to
harvest often,
for peak
produce quality.*

*To establish
a solid
reputation
and the
goodwill of
your members,
you need to
provide them
with the best
you can.*

HANDLING METHODS

If you sell through the CSA in addition to other outlets, you may encounter different standards from the different buyers. Boxes may need to be packed differently, some outlets need products to be graded and some buyers have very specific quality demands.

You can learn the needs of your clients and work to meet them, which takes management and a good memory but also provides solid market diversification for your farm. On the other hand, you can choose outlets whose requirements are similar to those of a CSA, reducing the number of differences you handle.

Farmers' markets come to mind first. Like CSA members, market customers expect products to be minimally processed. In addition, both outlets don't use a "standard pack" like wholesalers and retailers require.

Growers counsel against saving the seconds and culls for your CSA while you send the best products to other buyers. To establish a solid reputation and the goodwill of your members, you need to provide them with the best that you can. Part of the strength of the CSA arrangement is that you give your members everything from the field, including the odd-sized and slightly blemished stuff. However, they need to get the grade A's, too.

By now, you should have an idea of the kind of shares you will offer, how many you can supply, what you will provide, the length of your season, whether you want to sell all your production through CSA, and how CSA will fit into your farming operation.

Worksheet

Creating Your Harvest Plan

This worksheet give you space to start creating a harvest plan for your CSA.

1. What products are you going to provide?
2. Will you offer more than one kind of share? What kinds?
3. How many weeks long is your harvest season?
4. How many shares will you offer?
5. Do you have enough land to grow for that many shares? If not, how will you get more land?



Worksheet
Create Your Harvest Plan
(continued)

6. Will members be involved in harvesting? How?

7. When will you harvest? (*Time of day, day of week*)

8. Will you sell only through CSA, or also through other outlets?

9. Will this allow you to harvest and distribute several times a week?

10. How do you plan to have enough for all shares each week?



Crop Production for CSA

This section explains how to provide produce for a CSA, with information on growing, handling and storing.

By now, you have decided what you are providing through your CSA. Next, you need to think about how you will provide those products. There are several issues that come up when you provide fruits and vegetables through a CSA:

- ✦ How much to produce
- ✦ Techniques for a consistent supply
- ✦ Post-harvest handling

HOW MUCH TO PRODUCE

The table from the last chapter, *Total Amounts Members Received for Their Shares*, gave sample amounts per share for some fifty fruits and vegetables. You will probably not produce all of these. However, you will raise a number of them, and should keep the following in mind:

- ✦ Have at least five or six and as many as ten or twelve types of produce each week in the share. This variety makes a healthy diet for your members, and keeps their interest.
- ✦ To have a number of products each week, grow an even greater number of crops, to compensate for slow growth, crop loss, or crops which are available only bi-weekly. If you want to have about eight produce items each week, you may want to be growing 10 or 12 crops.
- ✦ With a **shareholding** CSA, harvest what is available that week and divide it among the members. With a **subscription** CSA, in which the value of the shares is pre-determined, use the market price of the produce to assemble a box of the correct value. Strategies for having enough on hand are on page 3 – 6 and 3 – 7 in *Creating Your Harvest Plan*.

Here are examples of shares from all four seasons from Full Belly Farm in Yolo County, which runs subscription CSAs in Sacramento and the Bay Area:


A ONE-WEEK SHARE FOR

FEBRUARY	MAY	AUGUST	NOVEMBER
1 lb broccoli	1 bunch beets	1 bunch basil	1 lb walnuts
1 red cabbage	2 lb broccoli	1 bunch long beans	1 bunch turnips
1 bunch collards	1 bunch carrots	3 cucumbers	1 bunch beets
1 bunch fresh garlic	1 head lettuce	1 bulb garlic	2 heads lettuce
1 bunch red kale	1 lb potatoes	1 passport melon	1 bunch green onions
1 bunch leeks	1 bunch spinach	1 yellow watermelon	1 butternut squash
½ lb walnuts	1 bunch green onions	1 lb tomatoes	2 lbs potatoes
½ lb salad mix	½ lb sugar snap peas	1 lb zucchini	1 bunch red kale
			1 napa cabbage

The next two pages contain a list of yield data from a few different sources.

By looking at the *Total Amounts Members Received for Their Shares* table (pages 3 – 6 and 3 – 7) and the *Crop Yield Information* table on the following pages, you should have an idea of how much you need to plant for the number of shares in your CSA.

*The best teacher
for your farm is
your own
experience.*

Also, at the end of this chapter are several  Charts to help you plan your CSA.

You can find this type of information for yourself in agricultural books, Cooperative Extension publications, and seed catalogues.

The yield data is only an indication, not a guarantee. Yields are influenced by a large number of factors, and are unpredictable. You need to experiment with your farm, its microclimates, and different growing techniques to find out what you can produce.

CROP YIELD INFORMATION

CROP	<i>GROWING YOUR OWN</i>		<i>KNOTT'S</i>		<i>JOHNNY'S</i>
	<i>VEGETABLES</i>		(PAGES 334-335)		<i>SELECTED SEEDS</i>
	PLANTING/ PERSON	YIELD/SEASON- 100' Row (#)	US YIELD, CWT/ACRE*		1995 COMM. CATALOGUE
			AVERAGE	GOOD	AVG YIELD/100'
Asparagus	10 - 15 plants	30	25	40	—
Beans, dry	—	—	—	—	8 lbs
Beans, green	15 - 16' bush/ 5 - 6' pole	120 - 150	35	100	80 lbs bush/ 150 lbs pole
Beets	5 - 10 feet	150	140	200	40 lbs greens/ 100 lbs roots
Bok choy, pak choy	—	—	—	—	100 lbs
Broccoli	3 - 5 plants	100	95	120	75 lbs
Brussel sprouts	2 - 5 plants	75	140	175	60 lbs
Cabbage, chinese	3 - 10 feet	80 ea	—	—	60 ea
Cabbage, green	3 - 4 plants	150	235	300	60 ea
Cabbage, red	—	—	—	—	—
Cantaloupe	6 - 15 plants	100 ea	145	200	100 ea
Carrots	5 - 10 feet	100	260	350	100 lbs
Cauliflower	3 - 5 plants	100	105	150	60 ea
Celeriac	3 - 5 feet	—	—	—	60 lbs
Celery	10 plants	180 plants	535	700	100 ea
Chard	3 - 5 plants	75	—	150	—
Corn	10 - 15 feet	10 doz	80	120	8 doz
Cucumbers	2 - 9 plants	120	115	250	120 lbs
Daikon	—	—	—	—	200 ea
Eggplant	1 - 2 plants	100	190	250	75 lbs
Fennel	3 - 5 feet	—	—	—	—
Garlic	—	40	130	160	—
Kale and collards	5 - 10 feet	100	—	—	75 lbs
Kohlrabi	3 - 5 feet	75	—	—	50 lbs
Leeks	2 - 5 feet	—	—	—	150 ea
Lettuce	10 feet	50	280	400	50 lbs
Mustard	5 - 10 feet	100	—	—	100 lbs
Okra	3 - 10 feet	—	—	150	—
Onions, bunch	3 - 5 feet	—	—	—	100 lbs
Onions, dry	3 - 5 feet	100	340	500	100 lbs
Parsley	1 - 2 plants	30	—	—	30 lbs
Parsnips	10 feet	100	—	—	75 lbs
Peas, sugar	10 - 20 feet	20	40	60	20 lbs
Peppers, sweet	3 - 5 plants	60	100	200	—
Peppers, hot	—	—	40 (dried)	60 (dried)	—
Potatoes	10 - 50 feet	100	290	400	—
Pumpkins	1 - 2 plants	100	—	400	300 lbs

*These yield data
are a starting
point — but no
substitute for
measuring the
production of
your own farm.*

CROP	GROWING YOUR OWN VEGETABLES		KNOTT'S (PAGES 334-335)		JOHNNY'S SELECTED SEEDS 1995 COMM. CATALOGUE	
	PLANTING/ PERSON	YIELD/SEASON- 100' ROW (#)	US YIELD, CWT/ACRE*	AVERAGE	GOOD	AVG YIELD/100'
Radishes	2 - 5 feet	100 bun	-	-	-	100 bun
Rutabagas	3 - 5 feet	-	-	400	400	150 lbs
Spinach	5 - 10 feet	40 - 50	80	150	150	40 lbs
Squash, summer	2 - 3 plants	150	-	300	300	200 lbs
Squash, winter	1 - 3 plants	100	-	400	400	200 lbs
Strawberries	-	-	225	400	400	-
Sweet potatoes	5 - 10 plants	100	125	250	250	-
Tomatoes, slice and salad	3 - 5 plants	100	230	270	270	150 lbs
Turnips	5 - 10 feet	50 - 100	-	300	300	100 lbs gr/ 50 lbs roots
Watermelons	2 - 6 plants	40 ea	125	300	300	70 ea

COLUMNS 2 AND 3 FROM:

Growing Your Own Vegetables. USDA, Agriculture Information Bulletin 409, Part 2, Home Garden Vegetables, 1977; and
Pittenger, Dennis R. *Home Vegetable Gardening.* University of California Cooperative Extension, Division of Agriculture and Natural Resources, 1992.

COLUMNS 4 AND 5 ARE FROM:

Lorenz, Oscar A. and Donald M. Maynard. *Knott's Handbook for Vegetable Growers, 3rd edition.* John Wiley & Sons, Inc., New York, 1988.

COLUMN 6 IS FROM:

Johnny's Selected Seeds, *1995 Commercial Edition* catalogue.

***CONVERSION FACTOR FOR ESTIMATING
PLANTINGS**

[To change cwt/acre into lbs/100', divide the amount in column 4 or 5 by the appropriate value from the spacings table below]

ROW SPACING (INCHES)	CONVERSION FACTOR
12	4.4
15	3.5
18	2.9
20	2.6
21	2.5
24	2.2
30	1.7
36	1.5
40	1.3
42	1.2
48	1.1

(Adapted from *Knott's Handbook for Vegetable Growers*)

*Useful
techniques:*

*Don't grow
uniform varieties*

*Grow bolt
resistant varieties*

*Choose different
maturity times*

*Use succession
planting*

*Extend the
harvest seasons*

Store crops

TECHNIQUES FOR A CONSISTENT SUPPLY

CSA members want to receive a steady supply of produce throughout the season. It is difficult if their shares have ten pounds of broccoli one week, and then no more for two months. The exception to this is the members who are canning, drying or freezing fruits and vegetables. You can make arrangements to supply large amounts for preservation for those who want it.

Therefore, you as the farmer need to grow your produce so that it is ready for harvest a little at a time. Several techniques and choices help with this, and are even more effective when used together:

DON'T GROW UNIFORM VARIETIES

Commercial varieties of tomatoes, beans and other crops are often bred to be uniform. All the fruits on the plant are ready for harvest at the same time, to make harvesting by machine or picking crews efficient.

However, there are other varieties, which produce and mature fruits over a period of time. If you are harvesting by hand, you can choose the ripe ones, then return later when more are ready. You only need to plant once for a harvest which extends over several weeks.

You can find this information in the variety descriptions in seed catalogues.

GROW VARIETIES WHICH ARE SLOW TO BOLT

Varieties have different tendencies to **bolt**, in response to their environment. Choose ones that are **slow to bolt** for your climate and for the time you are growing them. You can leave the crop in the field and harvest a little at a time as you need it. This is especially true of lettuce, brassicas (*cole crops*), onions, and greens.

Seed catalogues will tell you if a variety is slow to bolt or bolt-resistant.

*In most of
Placer County,
you can harvest
12 months of
the year.*

CHOOSE VARIETIES WITH DIFFERENT TIMES TO MATURITY

Varieties also vary by how long they take to reach maturity. Choose **several varieties with different maturity dates**. You can plant them all on the same day, so you only have to get the seeds and seeder out once. However, they will be ready at different times, giving you an extended harvest.

Seed catalogues give information on dates to maturity for their varieties. Dates to maturity may well vary, however, according to climate and weather. The information on *relative* time frames is still useful.

USE SUCCESSION PLANTING

Most crops have a fairly long planting season in California. By **planting several times during that season**, you can have a continual harvest.

The number of times to plant varies by crop. Greens, for example, allow you to harvest several times from the same stand, so they only need to be planted once a month. Radishes, on the other hand, have a short window of maturity, and you can only pick each plant once. Therefore, they need to be planted more often, every two weeks. The **Harvest Information** table in this section gives a range of weeks to maturity, and tips for succession planting.

EXTEND YOUR SEASONS

Season extension is using strategies, techniques and equipment to harvest earlier in the spring and later in the fall than usual. Two major elements of season extension can help the CSA farmer. The first is **soil and climatic factors**, and the second is **plant and soil covers**.

Soil and climatic factors are often overlooked in efforts to extend harvests. You can use your knowledge of your farm to choose the best places for early and late crops.

Soils which drain quickly and well are better for the first planting of the season or for overwintering crops. Sandy soils and soils on slopes drain more quickly than clay soils and

bottom lands. They are accessible for groundwork and planting early in the spring.

Temperature (*microclimate*) differences can be significant on most foothill farms. Differences of 10°F or more are not uncommon between high and low ground, especially where slope or North-South orientation differs.

Plant and soil covers, such as mulches, row covers, cloches, cold frames and greenhouses, change the soil and air temperatures around the plant. Some are expensive, some are not, and they also vary in their effectiveness. They can, however, help you protect plants from cold and frost, exclude pest insects, suppress weeds, and promote growth of out-of-season plants.

HAVE STORAGE CAPABILITIES

Finally, you can extend the length of time you supply your members with shares not just by growing well, but also by storing well. You can offer them winter shares from stored fruits and vegetables, and extend the number of weeks in your CSA significantly.

First of all, in most of Placer County, crops can be "stored" in the field during the winter. Plant growth may slow or stop, but freezes and frosts don't come along to kill the plants. Therefore, you can keep them in the field until you are ready to harvest. This works especially well with roots crops, such as carrots, beets, turnips, etc.

Second, you can build storage facilities. However, crops vary in their optimum storage environments.

I You will find information on **POST HARVEST HANDLING and SMALL-SCALE COLD ROOMS FOR PERISHABLE COMMODITIES** in the appendix.

Community Supported Agriculture

**The Vegetable Club CSA in Colfax plants these vegetables only once or twice for a full-season continual harvest.*

A

Each plant is harvested once. Plants in the same planting may not be ready at the same time, however, so that you can pick continuously from the same planting as plants mature to desired size. Also, note that harvest time lengthens in winter and shortens in spring.

B

The number of ears on a corn plant varies by variety. You may harvest for one to three weeks from a planting, getting one, two or three ears per plant.

C

Alliums can be harvested green in the spring. Both green and dry harvest extends over several weeks or longer.

D

Lettuce and spinach may give several successive harvests from the same planting if only the leaves and not the crown (growth point or center) are harvested. Here, too, time to maturity and length of harvest are longer in the winter.

...*Making the Connection*

HARVEST INFORMATION

VEGETABLE	APPROX. WEEKS TO MATURITY	APPROX. LENGTH OF HARVEST (UP TO) IN WEEKS	SUGGESTED PLANTING CYCLE FOR CONTINUOUS HARVEST
Artichoke, Jerusalem	17 - 26	dig as needed	harvest as needed; store in ground in winter
Asparagus	2 - 3 years	-	-
Basil	12	12 - 16	2 to 4 plantings
Beans, snap (bush)	7 - 9	4 - 6	10 days to 2 week intervals
Beans, snap (pole)	8 - 10	12	10 days to 2 week intervals
Beans, shell (kidney, soy, etc.)	11 - 15	when dry	-
Beets	8 - 9	dig as needed	2 week intervals*
Bok choy	8	8	2 to 3 week intervals
Broccoli	8 - 9	4 - 6	2 to 3 week intervals
Brussels sprouts	11 - 13	12	-
Cabbage (green & red)	9 - 14	(A)	3 week intervals
Cabbage, chinese	9 - 11	(A)	3 week intervals
Cantaloupe, etc.	10 - 18	13	2 to 3 plantings
Carrots	9 - 11	dig as needed	2 to 4 week intervals*
Cauliflower	8 - 12	(A)	2 to 4 week intervals
Celery	15 - 19	(A)	-
Chard, Swiss	7 - 9	44	once per month
Chives	12	perennial	-
Collards	9 - 12	24	once per month
Corn, sweet	9 - 13	(B)	Start new crop when last planting is 6" tall (<i>see example on page 12</i>)
Cucumber	7 - 10	26	2 to 3 plantings
Eggplant	12 - 14	13	single planting
Garlic	13 - 26	(C)	-
Kale	8 - 11	17	once per month
Kohlrabi	7 - 10	(A)	once per month
Leeks	16 - 18	(A)	

HARVEST INFORMATION (CONTINUED)

VEGETABLE	APPROX. WEEKS TO MATURITY	APPROX. LENGTH OF HARVEST (UP TO) IN WEEKS	SUGGESTED PLANTING CYCLE FOR CONTINUOUS HARVEST
Lettuce, Leaf	6 – 13	(D)	10 day to 2 week intervals
Mustard	5 – 8	8	once per month
Okra	7 – 8	13	2 to 3 plantings
Onion	12 – 17	(C)	—
Parsley	10 – 13	40	2 to 3 plantings
Parsnip	15	dig as needed	2 to 4 week intervals
Peas, bush or vine	8 – 12	12	2 week intervals
Peppers	10 – 12	17	single planting
Potatoes, Irish	13 – 17	dig as needed	1 to 2 plantings
Pumpkins	14 – 17	17+	—
Radishes	3 – 9	(A)	2 week intervals
Rutabagas	13 – 14	dig as needed	2 to 4 week intervals
Salsify	17 – 22	dig as needed	2 to 4 week intervals
Shallots	17 – 26	(C)	—
Spinach	6 – 7	(D)	once per month
Squash, summer	7 – 10	17 – 26	2 to 4 plantings
Squash, winter	11 – 17	17+	2 to 3 plantings
Tomatoes, all	8 – 11	17+	1 to 2 plantings
Turnips	5 – 9	(A)	2 to 4 week intervals
Watermelon	10 – 14	13	2 to 3 plantings

A

Each plant is harvested once. Plants in the same planting may not be ready at the same time, however, so that you can pick continuously from the same planting as plants mature to desired size. Also, note that harvest time lengthens in winter and shortens in spring.

B

The number of ears on a corn plant varies by variety. You may harvest for one to three weeks from a planting, getting one, two or three ears per plant.

C

Alliums can be harvested green in the spring. Both green and dry harvest extends over several weeks or longer.

D

Lettuce and spinach may give several successive harvests from the same planting if only the leaves and not the crown (growth point or center) are harvested. Here, too, time to maturity and length of harvest are longer in the winter.

ADAPTED FROM:

Vegetable Planting and Harvest Guide for the Foothills of Nevada and Placer Counties. Planting Distances and Harvest Dates. UC Cooperative Extension, Placer and Nevada Counties, Nancy Henson, Master Gardener. March 1985.

Includes information from Kimi Walsh of Garden Moon Farm, Davis Waldorf School.

Techniques for continual harvest work best when you use several of them together.

CONSISTENT SUPPLY — AN EXAMPLE

Sweet corn is a good example to demonstrate how to use several techniques together to achieve a consistent supply. This example combines *choosing varieties with different dates to maturity* with *succession planting*:

- ❶ Select varieties with different times to maturity. This example uses five varieties which mature in 67 to 84 days from planting.
- ❷ Decide how often you want a new planting to be ready. Here, a new crop of sweet corn will be ready every few days.
- ❸ Make a first planting with several different varieties with different maturity dates.
- ❹ Plan the next planting so that the earliest-maturing variety of the second planting is ready soon after the latest-maturing variety of the first planting. Here, it should be ready a few days later. Since the second planting occurs eight days after the first one, choose the 81-day variety, "Sweet Elite," to have the next crop five days after the previous one.
- ❺ Follow the same procedure for the third and subsequent plantings.

EXAMPLES OF SWEET CORN PLANTINGS

PLANTING	VARIETY	(DAYS TO MATURITY)	DAYS TO HARVEST (FROM FIRST PLANTING)	DAYS BETWEEN PLANTINGS
First	Quickie	(67)	67	8
	Comanche	(72)	72	
	Duet	(74)	74	
	Sweet Elite	(81)	81	
	Capitan	(84)	84	
Second	Sweet Elite	(81)	89	12
	Capitan	(84)	92	
Third	Duet	(74)	94	
	Sweet Elite	(81)	101	
	Capitan	(84)	104	

Adapted from *Knott's Handbook for Vegetable Growers*

In the end, your own information from your own farm is best for your purposes. Keeping detailed, accurate records on an ongoing basis does take time from present activities, but is invaluable for planning future ones. Record what and when you plant, including varieties, where you got the seed, how well it germinated, how it grew, what its problems were, what your yields were, when you harvested, and anything else important. Then use that information to create plans for next year.

POST HARVEST HANDLING

I You will find information on **POST HARVEST HANDLING and SMALL-SCALE COLD ROOMS FOR PERISHABLE COMMODITIES** in the appendix.

Poor postharvest handling practices can cause extensive loss of market quality. Fresh produce is alive, and after harvest it depends upon its own food reserves for the energy needed to remain alive. Farmers need to manipulate postharvest conditions so that product deterioration is minimized and the quality delivered to the consumer is maximized. They can do this by providing favorable:

- ✦ Harvest practices
- ✦ Packaging
- ✦ Postharvest environment

Harvest practices are the first link in maintaining quality. The best fruits and vegetables are those which mature in the field, so harvest at optimum maturity. Do so during the coolest part of the day, in the morning after the plants have dried but before the crops absorb much field heat. In addition, once they are harvested, keep them out of the sun and in the shade. Finally, handling produce gently and as little as possible minimizes abrasions and bruising which speed produce decay.

Packing shares for CSA is different than packing for other market outlets because boxes are filled with a variety of items. No standard box size or packing technique exists. However, packing sensibly is still important.

- ✓ Place items on the bottom and the fragile ones on top. If delivering packaged shares, top them with a colorful item such as a bunch of herbs, red lettuce or even flowers. Set up bulk pick-up sites so that items on the table go from heavy to light. As members move down the table they will automatically pack their shares properly.

- ✓ **Avoid overpacking and underpacking** your containers if possible. Improperly filled containers cause increased damage to produce.
- ✓ **Use containers that are not damaged.** Damaged containers can collapse or break open, which can harm produce.

The postharvest environment is very important for produce shelf-life. Poor handling at the farm may not affect the shares' appearance before members receive them, but can result in rapid produce decay afterward. Don't let produce heat up in the field before harvesting or in the sun after harvesting. Cool quickly to the proper temperature, around 32° for most root and leafy vegetables, 50° for potatoes, tomatoes, eggplants, peppers, and similar crops, and 70° for onions and garlic. Maintaining humid environments is important for nearly all crops, to avoid wilting and shriveling. Some vegetables are fine to store damp, while others are better kept dry. Wet floors, pans of water and humidifiers, swamp coolers and vaporizers in the storage room increase the humidity.

Another aspect of the postharvest environment is ethylene, a gas which ripens fruit and damages many vegetable crops. Ripe fruits, including tomatoes and melons, produce ethylene, and should be segregated from produce sensitive to ethylene damage if crops are to be stored for more than a day or two. If shares are harvested the same day or the day before members receive them, then ethylene is less important than temperature and humidity.

More information about postharvest handling is available in the appendix and from resources listed at the end of this handbook.

Worksheet

Crop Production for CSA

This worksheet helps you begin planning your crop production. See the end of this chapter for worksheets related to crop planning.

1. Which specific crops will you provide your members?

2. How many shares will you provide?

3. Which crops have a continual harvest?

4. Which crops can you plant several times in the season
(*succession planting*)?



Animal Products

This section
offers some
information
for:

Eggs
Milk
Meat

Some CSA projects offer shares of animal products, such as eggs, milk and even meat. These foods are more regulated than fruits and vegetables. They therefore take a little more care to arrange, and some knowledge of the applicable regulations.

As described before, you should consider offering shares of animal products separate from produce shares. Your members' diets will probably be very different, and they will appreciate the flexibility of choosing to have eggs, milk or meat in addition to their produce. Of course, your member lists will overlap.

EGGS

Eggs, an animal product often offered through CSA, are not highly regulated and are easy to produce in an integrated farming system.

Regulations regarding the appearance, quality and size of chicken eggs are fairly specific for producers and distributors of eggs for retail sale. The California Department of Food and Agriculture (CDFA) does not recognize a distinction between retail sale through a CSA and retail sale through another channel. For that reason, CDFA would expect CSA projects to follow all regulations about sizing, grading and packaging chicken eggs. For more information, call CDFA, Egg and Poultry Quality Control at (916) 654-0800.

Similar regulations do not exist for eggs of other fowl. The eggs need only to be clean, and the packing should identify the "responsible party" (*the CSA farmer*) and the species of fowl.

Animals are a useful addition to farming operations interested in sustainability and resource stewardship. Not only do they eat food scraps, cutting down on waste, but they also consume and digest things humans either can't or don't. In addition, they can help the farm with pest control. Fowl are used for insect, slug, snail and weed control. Finally, since fowl are an easy method of introducing animals into a farming operation, they are ideal for CSAs who want to educate consumers about agricultural systems and the role of animals.

*Before trying to
sell milk
through a CSA,
interested
producers
should plan
carefully.*

By providing eggs through CSA, farmers with integrated operations can make an income from animals that scavenge nutrients, improve the farm and educate CSA members.

MILK

Some of the first CSA-style projects in Japan and Switzerland centered on providing a clean supply of milk to consumers. Concerns about the milk supply in this country are increasing, especially over antibiotics and Bovine Growth Hormone (BGH). Since the Federal government is not requiring labeling of milk and milk products with information about these substances, an opportunity exists for small-scale producers to target people who want to know more about how their milk is produced.

In addition, milk from animals other than cows is less available and more expensive. Farmers may find that sufficient market demand exists for a small herd producing milk for direct sale to be profitable. Animals require more investment than annual crops, and so require more initial research to make the operation successful.

Before trying to sell milk through a CSA, interested producers should plan carefully. First, they need to assess demand, to find out if there are enough people willing to commit to the project. Second, they need to make an honest accounting of their facilities, start-up costs and operating costs. Third, they should decide how much they need to earn to cover costs, including returns to their own labor, and decide if demand is high enough to meet their required earnings.

Milk from cows, goats and sheep for sale in California is regulated by the CDFA, Milk and Dairy Foods Control Branch at (916) 654-0773. Other animals' milk will soon be regulated. These regulations govern milking facilities, personnel, handling, packaging, licensing and more. If you are starting a dairy operation, contact CDFA for information.

If you are planning to build dairy facilities, such as a milking barn, and will offer the milk for sale, you will need to follow certain building codes. The floor-plan, construction materials and more are all regulated.

In addition, *"every person, before engaging in the business of producing market milk [milk for sale], shall obtain a permit."* Producers' dairy farms and herds are then subject to inspection. Permits are good for a year.

Therefore, producing milk for a CSA is no different than producing milk for other market outlets, even though the way you sell and distribute it is. For exact information relevant to your farm, herd and facilities, contact CDFA.

LIVESTOCK

Most CSAs have focused on producing a wide variety of crops for their customers. Little attention has been paid to increasing diversification through livestock. This section will increase your awareness of the opportunities through incorporating livestock into your farming operation, using grass as your primary feed source for finishing livestock, and an overview of California livestock slaughter requirements. Direct marketing of livestock products is an underutilized market opportunity.

WHY USE LIVESTOCK?

Livestock can be useful to your operation in a variety of ways. The benefits of incorporating livestock include:

- ✦ **Livestock allow you to utilize areas on your farm not suitable for cropping** — Areas too steep, inaccessible, laying fallow, or lower in fertility can be utilized by livestock.
- ✦ **Livestock return nutrients to the soil** — For example, a 1,000 pound steer can return 14 pounds of nitrogen, 9 pounds of phosphorous, and almost 11 pounds of potassium to the soil.
- ✦ **Livestock can harvest a crop humans cannot digest and that can be grown for free** — The crop in question is grass. Grass grows by capturing sunlight energy through its leaves. This growth can be harvested, digested, and converted to a product that humans can digest by livestock.
- ✦ **Livestock can be a useful tool of restoration on your property** — Grazing on cropping areas adds manure to the soil, trampling of old standing forage or crops returns organic matter to the soil, and concentrating action of animal hooves assists in breaking hard, capped soils.

USING GRASS AS YOUR PRIMARY FEED SOURCE FOR FINISHING ANIMALS

If you are looking to expand into offering livestock products in your CSA, you need to maximize the use of grass. Grass is your cheapest feed source. It will also produce lean beef. There is nothing wrong with using grain in your feeding program – the only problem is the cost. Your mantra should be *“Maximize grass, Minimize grain”*. One company based in Kentucky, *Laura’s Lean Beef*, was able to receive certification on their steaks and roasts as meeting American Heart Association dietary guidelines. These guidelines include: fat, saturated fat, cholesterol, and sodium. Remember, livestock products are healthy to eat and can be environmentally friendly.

In order to maximize use of grass, you must strive to match forage supply with animal demand. Grass grows by capturing sunlight energy. You should think of grass leaves as solar panels. As long as you have enough solar panels (*leaves*), the plant is able to capture energy. If you remove all of the panels, the plant has to sacrifice nutrients from the root to generate enough top growth to capture sunlight energy. This makes plant recovery slower and causes part of the roots to die off. The key is to remove animals from an area while there still enough panels out there. You then must wait until the plant has completely recovered from defoliation before allowing the animals to regaze.

Grass grows at different rates during a year. In California, grass growth is extremely slow in winter, rapid in spring, and non-existent in summer and fall on annual dryland range pastures. On irrigated pastures, growth slows down in summer, and increases during fall. Your basic strategy should be to accumulate feed in periods of rapid growth which can be allocated out during periods of slow growth.

In California, you will probably find it necessary to have access to irrigated pasture in order to get livestock up to a slaughter weight and condition. This can be accomplished by: irrigating your own property, leasing irrigated pasture, or contracting or partnering with someone else to raise the livestock.

No matter how you end you end up producing your livestock product, it needs to be something you believe in. This means you should raise a few head and eat it yourself.

Keep making adjustments in your feeding program until you like what you eat. Proper aging can make a big difference in the tenderness and flavor of meat. Once you like it — you can start to market the product to others.

Joel Salatin, a Virginia rancher and farmer, is an example of innovation in marketing livestock products. He direct markets everything off the farm including: pastured poultry, grass fattened beef, rabbits, lamb, turkey, eggs, and vegetables. Joel has a waiting list of customers — in fact, it can be difficult to meet demand. He was able to get people to buy his beef by first giving away samplers of two T-bone steaks. This was done so people could see that grass fattened beef can be tasty and tender. Once they tasted it, they became believers. Slide presentations about the farm were given to civic, youth, and other groups with cooked samples on hand. Barbecues were also put on for potential customers. All of these efforts paid off and created demand.

Joel has three basic philosophies about sales that were stated in the June, 1994 **Stockman Grass Farmer** newspaper, *"Set your prices so that no matter what your volume, your return is both emotionally and financially rewarding; steer clear of the temptation to do everything the customer wants, and; and let cash be your business byword."*

LEGAL STUFF

In California, the only way you can sell meat to sell to others is to have it slaughtered at a USDA inspected slaughterhouse. Animals raised or purchased by the owner may also be slaughtered by the owner, mobile slaughterer, or state licensed custom livestock slaughterhouse. **HOWEVER**, this meat is not legal to sell to others. The only exceptions to this is meat going to the owner, members of his/her household, employees, and/or non-paying guests. If you are in doubt about this or have any questions, contact the Meat and Poultry Inspection Branch at the phone number given in the other sources of information section.

FINAL THOUGHTS

The purpose of this section on livestock was to stimulate your thinking about potential opportunities in your agricultural operation. Before jumping in, you need to do research, attend pertinent educational trainings, and do some on-farm experimentation to finally be able to produce a product consistent with consumer desires. Make full use of the other resources section to get you headed further down the road. The key word is ACTION!

OTHER LIVESTOCK RESOURCES

GRAZING EDUCATIONAL PROGRAMS

California Grazing Academy
11477 E Ave
Auburn, CA 95603
Attn: Roger Ingram
(916) 889-7385 Phone
(916) 889-7397 FAX

LIVESTOCK SLAUGHTER REQUIREMENTS

California Department of Food and Agriculture
Meat and Poultry Inspection Branch
1220 N Street
Sacramento, CA 95814
(916) 654-0504 Phone
(916) 654-2608 FAX

GENERAL LIVESTOCK INFORMATION

Contact the local Cooperative Extension office in your area.

GENERAL GRAZING AND GRASSFED BEEF INFORMATION

Stockman Grass Farmer Newspaper
P. O. Box 9607
Jackson, MS 39286-9607
(800) 748-9808 Phone
(601) 981-8558 FAX

Crop Description Chart

Information on crops and varieties (cultivars) is readily available in seed catalogues. Having "days to maturity" for different varieties all in one place will help in planning for plantings and harvest, and also in selecting appropriate varieties for different times of year and for short- or long-season plantings.

Column 1 is for crops and varieties (cultivars). In column 2, write the days to maturity from the seed catalogue or packet.

In column 3, write when you intend to plant or transplant. From that starting date and the days to maturity, figure out when you should be able to start harvesting the crop and record that time in Column 4.

In column 5, write the approximate length of harvest. This information can come from your own experience, information in seed catalogues and farming books, or the chapter *Production for CSA*.

Finally, column 6 is for additional information, such as bolting tendencies, succession planting strategy, actual days to maturity or harvest if different than stated, uniformity of harvest, susceptibility to frost or freeze, etc.

If the crop is to be planted several times in succession, record each planting on a new line.

					Year:
1	2	3	4	5	6
CROP AND VARIETY (CULTIVAR)	DAYS TO MATURITY	WHEN TO PLANT OR TRANSPLANT	WHEN TO START HARVEST	LENGTH OF HARVEST	ADDITIONAL INFORMATION



