HARVESTING CROPS FOR MARKET

A Plain Language Guide from the New Entry Sustainable Farming Project

IN THIS GUIDE, YOU WILL LEARN ABOUT:

When to harvest fresh vegetables
Post-harvest handling and food safety
Preparing produce for market
**Purpose of this Guide**

**Who should read this guide?**

This guide is written for people who want to learn about produce handling that takes place after harvest. If you would like to improve the look and feel of your produce at the market, it is a good idea to read through this guide. By investing time in properly handling vegetables in the field and during packing, you will be rewarded by better sales of your products.

You will benefit from this guide if you:

- Have never farmed before and wish to learn how to obtain the best outcome for your harvest.
- Have been gardening for a long time and want to expand and sell your crops to make money.
- Have sold your crops at farmers markets, restaurants and wholesale outlets, but wish to sell produce that looks better and lasts longer. That is, produce that has a greater ‘shelf life.’
- Need to know how to bunch and weigh specific crops.
- Would like to learn food safety tips to keep your customers healthy when eating your products.

It may be helpful for you to use this workbook with someone who can guide you to more farming information, such as an experienced farmer, staff member of a farm service organization, or other service provider.

**What is Plain Language?**

This guide is presented in a format called Plain Language. Plain Language provides clear, simple, and accessible text for readers in order to reduce misunderstandings, errors, and lack of comprehension. It also helps guide you through action steps to practice what you learn, and gives examples of other people using the information. We present this guide in Plain Language in order to make the topic accessible to everyone.
Harvesting Crops For Market
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As a farmer, you want the vegetables you grow to be fresh and high-quality. You also want to harvest them at the proper time, knowing how to be efficient with your time and how to handle each kind of vegetable properly. Your customers may not know exactly when and how you harvested your produce, but they will be able to see and appreciate clean, fresh vegetables! This Guide can help you make sure your produce gets to your customers at the right time, in the right amounts, and at top quality.

The keys to harvesting produce are:

- Picking vegetables when they reach the right size.
- Picking vegetables at the right time of day.
- Handling the vegetables as little as possible.
- Bunching or packaging the vegetables in recommended sizes and quantities.
- Selecting the right package or container to store vegetables.
- Storing the vegetables properly and at the right temperature.

Remember, you can spend months and months growing a crop, but if it is not clean, fresh, and beautiful when it gets to market, customers will not buy it! So it is important to harvest, handle, and store your vegetables properly. Take the extra time at first to learn about harvest and post-harvest handling. Soon you will be faster, more efficient, and your customers will keep coming back!
Harvesting tips by crop type:

This guide is organized by crop type and will include general information on:

• When to harvest
• Best time of day to harvest
• Harvest and post harvest handling instructions
• Bunch or unit sizes
• Storage suggestions
• Tips and tricks for packaging and keeping produce fresh
The majority of farm fresh foods are wholesome and safe to eat raw. However, as a farmer, it is necessary that you take steps to reduce the risk of contamination to protect your customers and your business. There are some key practices you should follow to ensure the safety of your food and workers, called Good Agricultural Practices (GAP). Below are a sample of GAP practices. Your farm can be ‘GAP Certified’ by an auditor. See the Appendix.

**Soil**
- Know the history of the land. Have chemicals or manure been applied to the land in the past?
- Select fields that are uphill or are located far from animal housing and grazing areas to avoid contamination from animal manure or animals’ walking on or near crops.
- Use composted manure instead of fresh manure on fields when possible.
- Maximize the time between manure application and crop harvest.
- Document all manure applications to your fields.

**Water**
- Be familiar with the source of your water. Where does it come from? Are there any operations upstream that may affect its quality?
- Be sure that your water wells are designed and maintained properly.
- Have your well water tested at least annually to be sure it is safe to drink and wash vegetables.

**Workers**
- Encourage workers to wear clean, protective clothing in the field.
- Provide toilet facilities to all workers in the field and in the packing house.
- Require workers to wash hands with hot, soapy water after using the bathroom.

**Chemicals**
- Follow instructions when using pesticides. Always follow days-to-harvest instructions on the label.
- Store chemicals properly.
- Clean and rinse spray equipment to keep it in good working condition.

**Handling**
- Develop daily cleaning schedules for work surfaces, restrooms, and keep maintenance logs.
- Remove excess soil from produce in field.
- Protect produce from direct sun exposure.
- Wash harvest bins regularly to reduce sources of contamination.
- Keep pest from contaminating packaging materials.
GREENS

When to Harvest/Maturity Guidelines:
• Harvest before the plant flowers or sends up a flower spike.
• Leaves should be tender, not tough.
• For arugula and salad mix, cut when leaves are small and very tender (3-4 inches high); be sure weeds or grasses have been removed from harvest area.
• For pea tendrils, snap off tips of plants where stem is still succulent and soft; harvest before stems turn stiff or woody.

Time of Day to Harvest:
• Early morning is the best time to harvest most greens, since that is the coolest time of day.
• If morning is not possible, try to harvest in the evening after the heat of the day has passed.

6:00am-9:00am OR 5:00pm-9:00pm

Harvesting and Post-Harvest Handling Instructions:
• Dunk greens in cold water and keep moist in a shaded basket or bin while in the field.
• Remove any weeds or grasses from the crops.
• To keep greens from wilting, they must be cooled as soon as possible after harvest.
• Discard any bruised, torn or otherwise damaged leaves.
Tie the following greens in **bunches**:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Bunch Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amaranth</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Cilantro</td>
<td>0.2 - 0.25 lbs</td>
</tr>
<tr>
<td>Collard Greens</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Fenugreek Leaves</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Jute Greens</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Kale</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Mustard Greens</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Pumpkin Vines</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Sweet Potato Greens</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Swiss Chard</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Water Spinach</td>
<td>0.5 lbs</td>
</tr>
</tbody>
</table>

**Tip:**
- Use rubber bands or twist ties to hold the greens together in bunches.
- Trim the ends to even them out if necessary.

The following greens should be **bagged**:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Bag Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arugula</td>
<td>0.3 - 0.5 lbs</td>
</tr>
<tr>
<td>Lettuce</td>
<td>1 large head or 2-4 small heads per bag</td>
</tr>
<tr>
<td>Pea Tendrils</td>
<td>0.2-0.3 lbs</td>
</tr>
<tr>
<td>Salad Mix</td>
<td>0.3-0.5 lbs</td>
</tr>
</tbody>
</table>

**Tips:**
- Be careful not to bag greens without removing ‘field heat’ or cooling first!
- If greens do not cool first, they may ‘sweat’ or wilt in the bag.
- Allow adequate air space in the bag and either leave open or close loosely if on display at a market.
- Keep bagged greens out of sunlight.
Greens Must Be:

1. Picked

2. Washed

3. Bunched or Bagged and Weighed

4. Stored in covered boxes in the shade or in a cooler

Tips:
Greens will droop and wilt (lose their moisture) very quickly if they are left out in the sun.

- Keep greens moist and cool at all times.
- When you first put a tote of greens in the cooler, leave the top flap open so the greens can release the heat from the field.
- Do not seal bags of greens. Let air flow in so the greens can cool off.
- Mist or sprinkle water over loose greens to keep them wet.
A Note on Bunch Sizes:

Many people from Asia, Africa, and other countries use large amounts of greens when they cook. They want to see BIG bunches at the market. Most Americans do not use as many greens in their cooking. They usually like SMALLER bunches.

When you harvest and bunch your greens, think about where you will sell them. Will you go to a flea market or farmers market where many people from different countries will be shopping? You might make your bunches a little bit larger to attract more customers.

If you are selling the greens through World Peas Co-op or CSA, make smaller bunches according to the guidelines given in this book. Most bunches of large leafy greens should weigh about 0.75 pounds. Smaller baby greens that you put in bags should only weigh between 0.3-0.5 pounds.

Remember, the smaller your bunches, the more bunches you will have, and the more money you can make. For example:

- **LARGE BUNCHES**
  - Bunch size = 0.5 lbs
  - $6 lbs / 0.5 lbs = 12 Bunches
  - $3.00/bunch = $36.00

- **SMALL BUNCHES**
  - Bunch size = 0.3 lbs
  - $6 lbs / 0.3 lbs = 20 Bunches
  - $3.00/bunch = $60.00

Look around at the market to see how big the bunches are at other tables. Experiment for a couple of weeks to figure out the best bunch size that satisfies your customers and makes you the most money. After that, be consistent each week so your customers will know what to expect.

Tips:

- Consider your customers’ demographics when deciding how big to bunch your greens.
- Scout your competition, but be sure you can make money with your size of bags or bunches.
- Be consistent with bunch or bag sizes each week so your customers will know what to expect and stay loyal to you.
FRUIT AND MELONS

Asian Cucumbers
Bitter Melon
Cucumbers
Eggplant, all varieties
Kittely

Peppers, all varieties
Summer Squash
Tomatillos
Tomatoes
Zucchini

When to Harvest/Maturity Guidelines:

• Harvest when fruit is the desirable size and/or color, and when the flesh is firm but ripe.
• For cucumbers, eggplant, melon, and squash, do not harvest too late, or fruit can become bitter and/or seedy.

Time of Day to Harvest:

• Early morning is the best time to harvest, while it is still cool but after dew has dried from the fruit.

7:00am-9:00am

Harvesting and Post-Harvest Handling Instructions:

• Cucumbers, melons, and tomatoes can be picked by turning the fruit parallel to the stem and quickly snipping it off.
• Use scissors or clippers to cut the stems of eggplant, peppers, and squash just above the fruit.
• Keep fingernails trimmed when harvesting squash to avoid punctures.
• These crops are delicate - be careful not to puncture or bruise during harvest.
• Do not stack too many fruits in one bin or those at the bottom will be crushed.
• Keep vegetables in the shade and cool as soon as possible.
• No need to rinse or wash unless dirt has adhered to the vegetables.
Do NOT put cherry tomatoes, or other fruits that bruise easily, into a large tote. The ones at the bottom will be crushed by the weight of those on top, and will be ruined.

Instead, put cherry tomatoes or other fruits into pint containers right away. This will save you time, and prevent them from being crushed.

**Tip:**
- A bread tray is a helpful way to carry stacked pints of produce.
**Storing Fruit and Melon Crops**

Fruit crops including tomatoes, cherry tomatoes, eggplant, and tomatillos should not be refrigerated below 50°F. They can be damaged if they get too cold, so do not put them inside the same cooler you use to chill greens. Instead, store them outside in the shade, under trees or in a cool spot out of the rain.

Other crops, including bitter melon, cucumbers, peppers, and squash, should be cooled and refrigerated. Place them gently in boxes or totes, then keep them in the shade until they can be put in the cooler.

**Tips:**

Many fruit and melon crops are very delicate, but they can also be very heavy.

- Trim your fingernails to make sure you don’t accidentally puncture squash, tomatoes, or eggplant while you are picking them.
- When in the field, move your basket or bin every few feet as you move down the row so you can gently place the fruits inside, rather than tossing them. This will prevent bruising.
- Pick your tomatoes directly into baskets if that is how you plan to display them at market, to avoid handling twice. This also saves time and prevents bruising.
- Harvest zucchini or summer squash daily or every other day to keep up with new ones that mature or reach market size.
- Label each variety so you can educate your customers.
- Leave room in the basket or bin when you are harvesting the vegetables. Do not fill it too full or you could hurt your back when carrying it off the field and bruise the fruits or veggies along the bottom and sides of
**ONION CROPS**

*Garlic Chives*
*Green Onions*
*Shallots*
*Bulb Onions*
*Garlic*

**When to Harvest/Maturity Guidelines:**

- Harvest garlic chives when they are 10-12 inches tall. They may be harvested before or during flowering.
- Harvest green onions when they are about 18-24 inches tall and when their stems are about as wide as a pencil or slightly larger.
- Harvest shallots in the fall, when the tops turn brown and fall over and the bulbs are 1-2 inches wide.
- Harvest onions in the fall, when the tops turn brown and fall over and the bulbs are at least 2 inches wide.
- Know the difference between fresh-eating onion varieties and storage onion varieties.
- Harvest garlic in mid-summer when 2-3 leaves turn yellow and dry down.

**Harvesting and Post-Harvest Handling Instructions:**

- Pull up green onions by hand. Trim roots and pull off any yellow leaves. Spray with a hose to wash off dirt. Use rubber bands to fasten into bunches. Keep in a moist, shaded bin while in the field, and put in a cooler as soon as possible to keep fresh.
- Use scissors or a sharp blade to cut garlic chives just above the ground. Tie into bunches using rubber bands. Dunk in cold water and put in cooler as soon as possible to keep fresh.
- Pull up shallots, garlic, and onions by hand and place in single layers on screens or trays. Let sit and ‘cure’ for a few days in a warm, dry, shady place. Trim off roots and stems. Garlic and shallots will keep for several months if cured and stored properly.
- Bulb onions should be harvested when their leaves are at least half dried and yellowed. The tops will have fallen over by this time. Harvest when the weather is dry; the onions can develop diseases if they are pulled after a rainfall or in damp, humid weather.
- After harvesting, bulb onions and garlic bulbs must be cured. This means, they must be left to dry and the skins must harden.
- Curing can be done either outside in the sun, or in a greenhouse, as long as temperatures do not go above 85 degrees and onions and garlic are cured when the neck is completely dry and tight.
- After curing, trim necks to 2-3 inches above the bulb and store in a cool, shady location.
Use rubber bands to tie the following crops into bunches:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Bunch Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garlic Chives</td>
<td>0.2 - 0.3 lbs</td>
</tr>
<tr>
<td>Green Onions</td>
<td>0.2 - 0.3 lbs</td>
</tr>
</tbody>
</table>

Tips:

- You may need two rubber bands to hold together green onion bunches. Fasten the first rubber band near the bottom of the bunch, then loosely fasten another rubber band near the top to hold the stems together, but do not wrap it too tightly.
- If your green onions are very tall, you can trim the tops to an even height to make the bunch look neater.
- Storage onions should be stored in a cool, dry, and ventilated place. Warmth and moisture will cause sprouting. Store cut onion in air tight container in fridge and use quickly. If stored in a dry cool place (50 to 60 degrees F), they will keep for months.
- Store garlic in an open container in a cool, dry place away from other foods. Do not refrigerate or freeze unpeeled garlic. Properly stored garlic can keep up to three months.
Cruciferous Vegetables

Baby Bok Choy
Broccoli
Broccoli Raab

Chinese Broccoli
Cabbage
Pac Choy

When to Harvest/Maturity Guidelines:

• Harvest baby bok choy or pac choy when the leaves are about 6-10 inches high. Cut just above the root so the head stays together.

• Broccoli should be harvested when the heads are fully formed but still tight and compact - before flowering. If you leave the plant in the ground more baby broccoli heads will grow off the main stalk that you can keep harvesting.

• Broccoli raab and Chinese broccoli should be harvested when the leaves are still tender and flower heads are formed. Chinese broccoli may be starting to flower at time of harvest.

• Pick cabbage when the heads are fully formed and firm. Each head should weigh at least one pound.

Time of Day to Harvest:

• Cooler times of day, if possible (mornings & evenings)

6:00am-9:00am OR 5:00pm-9:00pm

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Harvesting and Post-Harvest Handling Instructions:

- Baby bok choy and pac choy should be cut just above the roots at ground level. Trim off any yellow leaves. Bunch 2-4 heads together and fasten with a rubber band.
- Cut broccoli raab and Chinese broccoli stems about 8 inches long.
- Cut broccoli about 4-6 inches below the head. Do not leave a very long stem. Remove large leaves from the stem.
- Cut cabbages closely below the head. Remove large outer leaves, but do not peel off too many leaves or the cabbage will spoil more quickly.

Use rubber bands to tie the following crops into bunches:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Bunch Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby Bok Choy</td>
<td>0.5 - 0.75 lbs</td>
</tr>
<tr>
<td>Broccoli Raab</td>
<td>0.5 - 0.75 lbs</td>
</tr>
<tr>
<td>Chinese Broccoli</td>
<td>0.5 - 0.75 lbs</td>
</tr>
<tr>
<td>Pac Choy</td>
<td>0.5 - 0.75 lbs</td>
</tr>
</tbody>
</table>

Tips:

- Broccoli must be put on ice or refrigerated immediately after harvesting. If you are going to a market on a hot day, be sure to bring a lot of ice and keep the broccoli iced at all times.
- Keep other greens misted with cool water at the market to avoid wilting.
ROOTS AND TUBERS

When to Harvest/Maturity Guidelines:

- Harvest carrots based on the particular variety’s size guidelines (read the seed packet), usually when they are 5-10 inches long and about 1 inch wide. Lift the soil to loosen the carrots to pull them up with greens attached.
- Potatoes are usually harvested in the fall when the tops die and turn brown. Some potatoes, however, are harvested when they are small, about the size of a golf ball, and before the plant flowers. These are called ‘new’ potatoes.
- Sweet potatoes should be harvested in the fall before the first freeze.
- Radishes can be harvested when they are between 3/4 and 1 1/4 inches across. The radish should be crisp and the skin should not be cracked or split. Do not allow to grow too large or it may become hollow or “pithy” inside.
- Storage Turnips should be harvested when they are more than 1 inch across. For young turnips (salad turnips or Hakurei variety), harvest beginning when turnips are the size of a small radish up to 1 inch across. Leave the stems and edible leaves attached to the turnip.

Harvesting and Post-Harvest Handling Instructions:

- Be careful not to slice root crops if you use a shovel or fork to loosen the soil.
- Carrots and radishes should be sprayed with a hose or rinsed to remove all dirt then tied into bunches with twist ties.
- Turnips and beets can be sold with or without their edible tops. If you are leaving the tops on, remove yellow or damaged leaves. Rinse or spray with a hose to remove dirt, then tie into bunches with twist ties. You may want to sell the bunched top greens separately.
- Potatoes should be harvested and left in a cool, dry place for several days to cure. After they are cured, you can brush or wash off the dirt. Potatoes store best when not pre-washed.
- Sweet potatoes should be harvested and left in a warm, humid place for a few days to cure. After they are cured, you can brush or wash off the dirt.
Use twist ties to tie the following crops into bunches:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Bunch Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beets</td>
<td>1 - 1.5 lbs</td>
</tr>
<tr>
<td>Carrots</td>
<td>0.75 - 1 lb</td>
</tr>
<tr>
<td>Radishes</td>
<td>0.5 - .75 lbs</td>
</tr>
<tr>
<td>Rutabaga</td>
<td>0.5 lbs</td>
</tr>
<tr>
<td>Turnips, Hakurei</td>
<td>0.5 - 0.75 lbs</td>
</tr>
<tr>
<td>Turnips, Purple Top</td>
<td>0.5 lbs</td>
</tr>
</tbody>
</table>

Tips:

- Fresh market carrots are attractive with the tops on.
- Imperfect carrots or beets can be sold for juicing in large bags.
- Root vegetables store best in large bulk bins unwashed. Wash them just before you plan to sell them.
- Fresh sweet potato greens are a favorite staple crop in many African and Southeast Asian cultures. So, rather than mowing greens prior to harvesting the potatoes, bunch leaves into 0.5 - 0.75 lb bunches for sale at markets.
Beans and Peas

Green Beans (Bush Beans)
Yard Long Beans
Sugar Snap Peas
Snow Peas

When to Harvest/Maturity Guidelines:

• Harvest green beans when they are about as big around as a pencil. The pods should be fairly smooth - no big bulges from the seeds inside.
• Harvest yard long beans when they are at least 10-12 inches in length.
• Harvest sugar snap peas when the peas inside the pod have started to form, making the pod round.
• Harvest snow peas when they have reached their full length but are still fairly flat.

Harvesting and Post-Harvest Handling Instructions:

• Keep beans and peas in a shaded basket or bin while in the field. Put in the cooler as quickly as possible to keep fresh.
• Harvest beans and peas every day or every-other day to keep up with new ones that mature.

Tips:

• For yard long beans, bunch the ends of the beans with a rubber band. Bunch sizes should be 0.75 - 1 lb per bunch.
• For green beans, sell by the pound or pre-package in 0.5 or 1 lb bags.
• For peas, sell in either pint containers or 0.5 lb bags.
HERBS

<table>
<thead>
<tr>
<th>Basil, all kinds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chives</td>
</tr>
<tr>
<td>Cilantro</td>
</tr>
<tr>
<td>Cutting Celery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fennel</td>
</tr>
<tr>
<td>Lemon Balm</td>
</tr>
<tr>
<td>Marjoram</td>
</tr>
<tr>
<td>Mint</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oregano</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parsley</td>
</tr>
<tr>
<td>Sage</td>
</tr>
<tr>
<td>Thyme</td>
</tr>
</tbody>
</table>

When to Harvest/Maturity Guidelines:
- Harvest herbs before they flower or get too ‘leggy’ (tall and weak).
- Don’t harvest the whole plant - only cut about 1/3 so it can grow back.

Time of Day to Harvest:
- Herbs wilt very quickly. Harvest in the early morning on the day of the market.
  6:00am - 9:00am

Harvesting and Post-Harvest Handling Instructions:
- Cut herbs and use small rubber bands to make into bunches.
- Keep herbs in a cool and shaded bin or basket.
- Put herbs in a cooler as soon as possible.
- Basil and cilantro will stay fresh longer if its stems are put in water. Do not put basil on ice or the leaves may turn black from being too cold.
- Cilantro can be pulled up and roots washed. It will keep longer if roots are collected and it is stored in water.

Bunch Size:

<table>
<thead>
<tr>
<th>0.1 lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balm</td>
</tr>
<tr>
<td>Chives</td>
</tr>
<tr>
<td>Dill</td>
</tr>
<tr>
<td>Fennel</td>
</tr>
<tr>
<td>Marjoram</td>
</tr>
<tr>
<td>Oregano</td>
</tr>
<tr>
<td>Sage</td>
</tr>
<tr>
<td>Thyme</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>0.2 - 0.25 lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basil, all kinds</td>
</tr>
<tr>
<td>Cilantro</td>
</tr>
<tr>
<td>Cutting Celery</td>
</tr>
<tr>
<td>Mint</td>
</tr>
<tr>
<td>Parsley</td>
</tr>
</tbody>
</table>

Bunches of basil at market.
Photo credit: Katie Clark
**Pumpkin & Squash Blossoms**

Male Blossoms (long stems)  
Female Blossoms (on fruits)

**When to Harvest/Maturity Guidelines:**

- Harvest male blossoms at any time.
- Harvest both male and female blossoms toward the end of the summer when it is too late for them to generate fruit, or if you have too many fruits.

**Time of Day to Harvest:**

- Squash blossoms wilt and die very quickly. Harvest first thing in the morning before the buds open, making sure no bees or other bugs are trapped inside.

  6:00am-8:00am

**Harvesting and Post-Harvest Handling Instructions:**

- Wear gloves and long sleeves when harvesting because squash and pumpkin plants can be scratchy.
- Snip blossoms from stem using scissors or clippers. If harvesting before blossoms open, there will be no chance of dirt or bugs being inside the bloom.
- Loosely cover with a damp cloth and cool as soon as possible to preserve freshness.
- Place stems of male blossoms in a cup of cool water so they stay fresh.
- Do not stack bunches high because the blossoms can bruise or fall off the stems. Try to keep them pointing upward and do not touch them more than you need to.
Pumpkins and Winter Squash

When to Harvest/Maturity Guidelines:

• Harvest pumpkins when they have turned orange on the vine, but before the first hard frost. Smaller pumpkins are usually sweeter and better for cooking. Large pumpkins are often used to make jack o’ lanterns for Halloween.
• Harvest acorn squash when they are dark green and develop an orange spot on one side.
• Harvest butternut squash when they are firm and the color has changed from light beige to dark tan.
• Check to see that the stem or closest tendril next to the mature fruit has died back.

Harvesting and Post-Harvest Handling Instructions:

• Wear gloves and long sleeves when harvesting because squash and pumpkin plants can be scratchy.
• Use clippers or a sharp knife to cut the fruits from the stem. Do not break off the stem. Leave 2-4 inches attached to the squash or pumpkin.
• Pumpkins should be stored in a cool, dry, shady place until you are ready to sell them.
• Winter squash should be cured in a warm, dry place for a few days to harden and heal any wounds. After being cured, store in a cool, dry place, where they can keep for several months.

Acorn Squash:
Orange spots mean they are ready to harvest.
<table>
<thead>
<tr>
<th>Crop</th>
<th>Bunch Size</th>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amaranth</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Arugula</td>
<td>0.3 - 0.5 lbs</td>
<td>bag</td>
</tr>
<tr>
<td>Baby Bok Choy</td>
<td>0.5 - 0.75 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Balm</td>
<td>0.1 lb</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Basil</td>
<td>0.2 - 0.25 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Beets</td>
<td>1 - 1.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Broccoli Raab</td>
<td>0.5 - 0.75 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Carrots</td>
<td>0.75 - 1 lb</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Chives</td>
<td>0.1 lb</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Cilantro</td>
<td>0.2 - 0.25 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Chinese Broccoli</td>
<td>0.5 - 0.75 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Collard Greens</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Cutting Celery</td>
<td>0.2 - 0.25 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Dill</td>
<td>0.1 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Fennel</td>
<td>0.1 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Fenugreek Leaves</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Garlic Chives</td>
<td>0.2 - 0.3 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Green Onions</td>
<td>0.2 - 0.3 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Jute Greens</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Kale</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Lettuce</td>
<td>1 large head or 2-4 small heads</td>
<td>bag</td>
</tr>
<tr>
<td>Marjoram</td>
<td>0.1 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Mint</td>
<td>0.2 - 0.25 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Mustard Greens</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Oregano</td>
<td>0.1 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Pac Choy</td>
<td>0.5 - 0.75 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Parsley</td>
<td>0.2 - 0.25 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Pea Tendrils</td>
<td>0.2 - 0.3 lbs</td>
<td>bag</td>
</tr>
<tr>
<td>Pumpkin Vines</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Radishes</td>
<td>0.5 - .75 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Rutabaga</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Sage</td>
<td>0.1 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Salad Mix</td>
<td>0.3 - 0.5 lb</td>
<td>bag</td>
</tr>
<tr>
<td>Sweet Potato Greens</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Swiss Chard</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Thyme</td>
<td>0.1 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Turnips, Hakurei</td>
<td>0.5 - .75 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Turnips, Purple Top</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
<tr>
<td>Water Spinach</td>
<td>0.5 lbs</td>
<td>tie into bunches</td>
</tr>
</tbody>
</table>
Resources

Guide to Postharvest Handling of Fruits and Vegetables
ATTRA - The National Sustainable Agriculture Information Center
Available online at http://www.attra.org/attra-pub/PDF/postharvest.pdf

Good Agriculture Practices (GAP) Food Safety Photo Story
Cornell University, Department of Food Science
Available online at http://www.gaps.cornell.edu/Educationalmaterials/Samples/FieldPhotoNovelSampleEng.pdf

UMass Extension Service (Also contact UMass Extension for a MA GAP auditor)

Production and Handling Fact Sheets
North Carolina Co-op Extension Service
Available online at http://www.ces.ncsu.edu/depts/foodsci/ext/programs/producesafety/

Produce Safety at the Farm Market: A Guide for Farmers and Sellers
Ohio State University Extension Service
Available online at http://ohioline.osu.edu/hyg-fact/pdf/Produce_Safety_Farm_Market.pdf

Post Harvest Technology Publications
University of California, Davis
Available online at http://postharvest.ucdavis.edu/Pubs/index.shtml

Postharvest Commodity Series
North Carolina State University Department of Biological and Agricultural Engineering
Available online at http://www.bae.ncsu.edu/programs/extension/publicat/postharv/

Produce Handling for Direct Marketing
Natural Resource, Agriculture and Engineering Service
Available online at http://www.nraes.org/nra_order.taf?_function=detail&pr_booknum=nraes-51