



# WHOLESALE PACKING RESOURCE GUIDE

A Plain Language Guide from the New Entry Sustainable Farming Project



IN THIS GUIDE, YOU WILL LEARN ABOUT:

Wholesale marketing requirements

# NEW ENTRY SUSTAINABLE FARMING PROJECT IN COLLABORATION WITH WORLD PEAS COOPERATIVE

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# PURPOSE OF THIS GUIDE

## Who should read this guide?

This guide is written for people who want to learn about selling to supermarkets, produce distributors, restaurants and institutions. This guide explains wholesale packing requirements and is a tool to help farmers decide if it makes sense to enter the wholesale market. The marketplace requires a number of skills including post-harvest handling, cooling, packing and buyer-seller relations. Wholesale marketing may also imply certain insurance and food safety certification requirements. The information in this guide concerns packing requirements, but provides information about other resources for additional wholesale information. In order to apply the information to your farm and crops, the guide includes crop-specific packing guidelines, many of which include ethnic crops. By investing time in properly packing fruits and vegetables, you will be rewarded by better sales of your products.

You will benefit from this guide if you:

- Are a farm operator who has produce to sell
- Would like to sell larger volumes of products to wholesale outlets
- Need to know basic packing requirements for sales to buyers such as restaurants, institutions, high-end supermarkets, and distributors
- Would like to learn more about packing requirements for selling in wholesale markets

It may be helpful for you to use this workbook with someone who can guide you to more packing and wholesale information, such as an experienced farmer or technical advisor.

## 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.



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# INTRODUCTION

If you are a farmer who has products to market locally, learning about your marketing options and putting together a plan are the most important tasks to accomplish prior to planting. Many farmers agree that it is a lot easier to produce food than it is to market it. But there is good news for farmers that want to sell their products in a local market: the local food movement is gaining popularity because people are more concerned with:

- 1) Environmental consequences of producing food
- 2) Freshness and quality of food
- 3) Health and nutrition
- 4) Knowing where their food comes from.

There are many opportunities for farmers to sell their products locally, in ways that can keep the farmers' identities connected to their products. The demand for fresh, local fruits and vegetables means opportunities for farmers to sell to grocery stores, co-ops, local distributors, restaurants, and institutions in their communities.

One way to sell locally is through direct marketing.



Farmers' markets, farm stands and Community Supported Agriculture (CSA), are a very important part of the local food movement. Direct marketing can give the farmers a larger share of the food dollar and possibly a good profit for each unit sold. They can connect directly with consumers, allowing a direct relationship to their food.

## Direct Marketing

### Farmers' Markets

Taking your products to farmers' markets is one of the most well known ways that farmers sell their products. Certain regulations exist at every market, but they vary by locality. Farmers' markets offer several benefits because farmers can

- 1) Set their own prices
- 2) Build a good reputation and better connect customers to their farm
- 3) Develop a relationship with customers and learn about their preferences
- 4) Bring what is available each week to the market

### Farm Stands

Farm stands are a way to generate direct sales and lower transportation costs. Location is one of the most important factors for a successful farm stand to attract both regular and drive by customers. People want easy roadside access and the ease of a shopping experience.

### Community Supported Agriculture

CSAs provide the most direct relationship between farmers and their communities. Interested consumers usually purchase a share from the farmer and in return receive a box of seasonal produce weekly, biweekly, or monthly during the farming season. This arrangement allows the farmer to market the food early in the year and receive payment early in the season. When CSA members make this commitment, they are sharing the costs and risks of growing the food along with the farmer.

## Wholesale Marketing

While direct markets can be a great way to sell produce, farmers may want to look for other local marketing channels. This guide includes general information on wholesale to help you decide if entering the wholesale market is right for you. It also explains standardized packing requirements and includes standards for a variety of fruits and vegetables, organized in a table. This guide helps to make sure that your production and packing practices are in line with wholesale market requirements so that you can be successful in selling to wholesale customers.



# WHOLESALE MARKETING

Wholesale marketing includes selling to produce distributors and retail buyers like grocery stores. Selling to local restaurants or institutions like universities or hospitals can also be considered a form of wholesale.



Wholesale usually involves larger quantities than direct marketing and there is an intermediary (“middleman”) between the farmer and the end consumer. Working with a middleman often results in lower prices paid to the farmer, but it may save the farmer time on marketing and distributing directly to consumers. Selling in the local wholesale market can be an attractive option for many farmers who want to sell their products locally. Having a direct relationship with the buyer helps the farmer understand certain industry requirements and the time the product spends traveling to the consumer may be significantly less.

## Benefits of selling wholesale

- You can often sell larger quantities of product at once than possible with direct marketing
- You are able to concentrate more on production than on marketing efforts
- You can arrange consistent orders with a buyer to guarantee sales of crops
- It is still possible for your food to retain your farm’s identity in this type of marketing

Large or small, any farming operation needs to be aware that selling wholesale presents new opportunities and challenges compared to direct marketing. Post-harvest and packing requirements are significantly different and require careful attention to buyer preferences. Also, wholesale buyers may have insurance or certification requirements for farms.

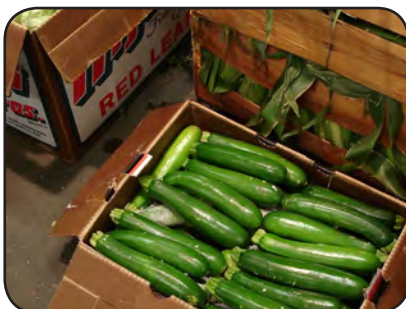


## Key Considerations When Selling Wholesale

- **Products:** You will be responsible for meeting the buyer's requirements for quality and consistency.
- **Volume:** Wholesale usually involves selling large volumes of produce at once.
- **Prices:** Prices are usually lower than by direct sales. You may or may not be responsible for price setting.
- **Post-harvest handling:** It is important that your product is handled, packed, and stored properly after it is harvested, especially if it sits in storage before being sold. As with most markets, field heat must be removed with proper cooling, and must be maintained with refrigerated storage if the produce is not being sold locally.
- **Packing:** Farmers are responsible for meeting certain standards of packing.
- **On-Farm Storage:** Farmers may be asked to hold their products until the buyer needs them.
- **Transportation:** Farmers may need to arrange for delivering their product. This may involve hiring a truck, purchasing a truck, or coordinating delivery with a buyer-owned truck.
- **Buyer Requirements:** Wholesale buyers may require liability insurance, Good Agricultural Practices (GAP) certification, or other requirements.

## WHOLESALE PACKING

Packing fresh fruits and vegetables is one of the more important steps in the journey from grower to consumer. Bags, crates, baskets, cartons, and bulk bins are convenient containers for handling, transporting, and marketing fresh produce. A good produce container should contain, protect, and identify the produce. It is important that farmers know the proper packaging for their products so that they can be successful in selling to local wholesale markets. This manual will provide you with information on appropriate packing materials and methods. Another good way of finding out about packing information is to talk to other farmers who are already doing this kind of marketing.



## Key Steps to Success in Wholesale Packing

- Try to pack in the field as much as possible to avoid handling produce too much. Some containers will allow you to rinse packed vegetables directly in the container.
- The produce should fit well inside the container, with little wasted space.
- Size, color, maturity and shape should be as uniform as possible within a package.
- The package must protect the produce from rolling around or bruising.
- Produce containers must be sturdy, easy to work with, and allow air circulation.
- The package should identify useful information about the produce like the name, variety, net weight, count, and grower.
- Put small containers into a larger box.
- Communication with the buyer is essential: ask the buyer what package and other characteristics they prefer.



ITEMS	NET/WT
CHINESE BITTERMELON	30
INDIAN BITTERMELON	30
CHINESE EGGPLANT	30
INDIAN EGGPLANT	35
THAI EGGPLANT	40
JAPANESE EGGPLANT	30
CHINESE OKRA	25
THAI OKRA	30
LONG SQUASH	40
FUZZY SQUASH	40
SNAKE GOURD	30
CHIVE FLOWER	30
CHINESE CHIVE	20
BANANA FLOWER	30

## Labeling Packages

Labeling packages helps handlers to keep track of the produce as it moves through the system, from farm to wholesaler or retailer. Labels can be preprinted on containers or glued or stamped on. Labels can contain some or all of the following information:

- \*Common name of the product
- \*Net weight, count and/or volume
- \*Name and address of producer, packer, or distributor
- \*Country or region of origin
- Size and grade
- Recommended storage temperature
- Special handling instructions

\*Labeling of this information on the packing container is mandatory under FDA regulations.

# STANDARDIZED PACKING

Proper packing is especially important when you are planning on selling to a wholesale buyer. Selecting the right container for fresh produce is usually a matter of knowing industry standards. For most types of fruits and vegetables, the market has specific standards for packing. In many cases, buyers prefer packing according to market standards, but sometimes your buyer will ask for specific packing requirements. It is important to communicate with your buyer about their expectations and your capabilities.

In this guide you will find a list of fruits and vegetables with corresponding produce packing guidelines. Since some of the crops listed are ethnic and not as common, industry standards are less specific. By following these guidelines, and by communicating with your buyer, you will be able to more easily sell your top quality fruits and vegetables to local wholesale markets.

The term “container” will be used as a generic term to refer to bags, sacks, baskets, boxes, bulk bins, cartons, crates, flats or lugs. The specific container name will be used when it is necessary to describe packing standards.

Containers can be made of many different materials, but corrugated fiberboard is the most popular container material, which is a cardboard-like material made from layers of paperboard.



Palletization is when the containers are stacked on wooden pallets to reduce the number of times an individual container is handled, but this process is only used for large quantities of produce.

Here are two common packing terms that you might come across to describe weights and sizes:

- 1 bushel = 32 dry quarts
- 1 peck =  $\frac{1}{4}$  of a bushel or 8 dry quarts

## Common Retail Containers for Wholesale Packing

### Bag or Sack

Made of burlap, cotton, plastic mesh or plastic film; common for less fragile produce because it offers no structural support

### Basket

Usually wooden and ranges in size from ¼ peck to 1 bushel

### Box or carton

A corrugated fiberboard container that closes with top flaps. It ranges in size from ½ peck to 1 bushel and is often waxed for water resistance and to prevent containers from falling apart if they become wet or moist

### Bulk Bins

A large corrugated fiberboard container that has a wooden pallet bottom and is often used for produce that does not bruise easily like potatoes, onions, melons and winter squash.

### Crate

A wooden, wire-bound container that is usually bulk-filled to a desired weight

### Flat

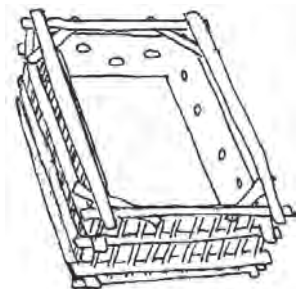
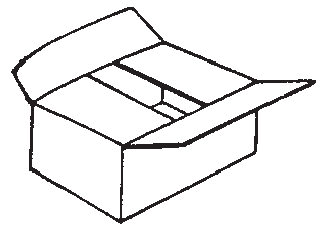
A container that is packed in 1 or 2 layers; often used to pack produce that is already packaged in consumer-ready containers, like berries

### Other points to consider:

**Cooling:** If the produce is not going straight to the point of sale, it must be precooled as quickly as possible to ensure the longest shelflife. Containers need to be vented so that the produce is kept at the correct storage temperature.

**Sizing:** An important factor in packing a crop correctly is sizing. The buyer wants a container with uniformly sized fruits and vegetables. Size can be designated as the number or count that will fit in the containers, but some crops have specific lengths or diameter to be considered a certain size.

**Packing practices:** Adding a fiberboard divider to a carton will increase stacking strength and prevent produce from vibrating against one another during handling. Using dividers is common with heavy crops such as melons.



\*Graphics courtesy of FAO:  
<http://www.fao.org/wairdocs/x5403e/x5403e06.htm>>

# PACKING STANDARDS FOR FRUITS & VEGETABLES

Note: You will notice that there are several gaps in this chart, but this is a reflection of the lack of information about standards in the marketplace. This points to the importance of communication with your buyer, who may have specific requirements or preferences that are not outlined here.

Name	Container	Weight	Notes
AMARANTH GREENS	Bushel crates or cartons	20 to 25 lbs	12-24 bunches per crate or carton (can also be loose)
APPLES	By count or weight in bushel box	About 40 lbs	Count is the number of apples of a certain size that will fit in a bushel container
ARUGULA	1/2 bushel box or crate	8 to 10 lbs	12-18 bunches per box or crate
BABY BOK CHOY	Box or crate	10 lbs	
BABY SALAD GREENS	1/2 bushel box or crate	8 to 10 lbs	
BASIL	Box		12 or 24 bunches per box
BEANS, BUSH (GREEN)	1/2 bushel box OR bushel crate, basket or box	15 lbs (1/2 bushel) or 28 to 32 lbs (bushel container)	
BEANS, LONG	1/2 bushel box OR bushel crate, basket or box	15 lbs (1/2 bushel) or 30 lbs (bushel container)	
BEETS	1/2 bushel box OR bag (topped and loose) OR 1 1/9 bushel box or crate (bunched with tops)	25 lbs (bag)	12-24 bunches per box with tops attached; topped beets cannot be more than 1/2 inch in length.
BELL PEPPER	1 1/9 bushel box		75 to 85 medium-sized per box
BITTERMELON	Carton	35 lbs	
BLUEBERRIES	By volume in half-pints, pints and quarts in a single layer crate, flat or box		12 or 24 to a single layer crate, flat or box
BOK CHOY	Carton or crate	30 lbs	
BROCCOLI	1 1/9 bushel box	20 to 24 lbs	14-18 individual heads or bunches of uniform size

<b>Name</b>	<b>Container</b>	<b>Weight</b>	<b>Notes</b>
BROCCOLI, CHINESE	1 1/9 bushel box or carton	10 or 20 lbs	
BROCCOLI, RAAB	Box or case	10 or 20 lbs	
BRUSSELS SPROUTS	Bulk pack cartons (loose)	25 lbs	Should be greater than 1 inch and no more than 2 3/4 inches in diameter.
CABBAGE	Bag, box, or carton OR by count	50 lbs	24 heads per container
CABBAGE, SPEY	Box or carton	30 or 50 lbs	
CANTALOUPE	Carton OR in bins by count	25 to 40 lbs (carton)	6, 9 or 15 count
CARROTS	Bag (loose) or 1 1/9 bushel box (bunched)	50 lbs (bag)	Bunches must weight more than 1 pound (about 6-8 per bunch)
CAULIFLOWER	Cauliflower box, flat or layer carton (trimmed) OR bulk (untrimmed)		12 or 24 trimmed heads per box (leaves trimmed just above top of the head); size is designated by number per container.
CELERIAC (CELERY ROOT)	Carton	20 lbs	
CELERY	1 1/9 bushel box		24, 30, 36 or 48 heads per box
CILANTRO	1/2 bushel box		12 or 24 bunches per box
COLLARD GREENS	Bushel crate or carton	25 lbs	24 bunches per crate or carton
CORN, SWEET	Crate or box		5 dozen per container
CUCUMBER, ASIAN	24 count cucumber box OR 1/2 bushel box		
CUCUMBER, SLICING	24 count cucumber box OR 1/2 bushel box OR 1 1/9 bushel box		
DILL	1/2 bushel box		12 or 24 bunches per box
EGGPLANT, ASIAN	1/2 bushel box	15 lbs	
EGGPLANT, CLASSIC	1/2 bushel or 1 1/9 bushel box	15 lbs (1/2 bushel) or 30 to 35 lbs (1 1/9 bushel)	20 to 28 count in 1 1/9 bushel box; size is designated by number per container.
EGGPLANT, JILÓ	1/2 bushel box	15 lbs	
EGGPLANT, KERMIT	1/2 bushel box	15 lbs	
FENNEL	Box		24 count per box
GARLIC	Carton OR in bulk	10 lbs (carton)	
GARLIC CHIVES	1/2 bushel box or crate		12 or 24 bunches per box

<b>Name</b>	<b>Container</b>	<b>Weight</b>	<b>Notes</b>
GARLIC SCAPES	bushel box or crate		Loose OR 12 or 24 bunches per box or crate
GROUND CHERRIES	Carton	25 lbs	
KALE	Bushel crate or carton (loose or in bunches)	20 to 25 lbs	12 or 24 bunches per crate or carton
KOHLRABI	Film or mesh bag OR carton	25 lbs or 50 lbs (bag) OR 24 lbs (carton)	
KOMATSUNA	Bushel crate or carton (loose or in bunches)	20 to 25 lbs	12 or 24 bunches per crate or carton
LEAF LETTUCE	1 1/9 bushel box or crate OR carton	20 to 25 lbs (box or crate)	12 to 24 count per container
LEEKS	1/2 bushel box or basket		Trim to 12-inch length and bunch 2-3 per bunch depending on diameter
MAIZE,AFRICAN	Crate or box		In bulk or 5 dozen per container
MINT	1/2 bushel box		12 or 24 bunches per box
MUSTARD GREENS	Bushel crate or carton (loose or in bunches)	20 to 25 lbs	12 or 24 bunches per crate or carton
NECTARINES	By count in bulk OR wood box or carton	18 to 25 lbs	Uniform size
OKRA	1/2 bushel or 5/9-bushel basket, crate, or carton	15 to 20 lbs	
ONIONS, GREEN	1/2 bushel box or 1 1/9 bushel box	20 lbs (1/2 bushel)	24 bunches per 1/2 bushel box or 48 bunches per 1 1/9 bushel box (6 to 9 per bunch)
ONIONS, STORAGE	Bag	25 or 50 lbs	Cure and pack dry, firm and shiny onions
OREGANO	1/2 bushel box		12 or 24 bunches per box
PARSLEY	1/2 bushel box		12 or 24 bunches per box
PARSNIP	Carton	20 lbs	
PEA TENDRILS	Bushel crate or cartons (loose or in bunches)	20 to 25 lbs	12-24 bunches per crate or carton
PEACHES	By count in bulk OR wood box or carton	24 to 39 lbs	Uniform size
PEARS	By count in bulk OR in box or tray-pack	44 to 46 lbs	Uniform size
PEAS, SHELLING	Pea box OR 1/2 bushel box OR bushel basket or crate OR 1 1/9 bushel box or basket	15 lbs (pea box) or 28 to 32 lbs (bushel container)	
PEAS, SNAP	1/2 bushel box or carton	10 lbs	



Name	Container	Weight	Notes
PEPPERS, GREEN	Bushel or 1/2 bushel box or 1 1/9 bushel crate	25 to 30 lbs (box or crate)	
PLUMS	By weight in bulk OR bushel lugs (minimum of 28 lbs)		
POTATO, BLUE CARIBE	Box or bag	50 lbs	
POTATO, FINGERLING	Box or bag	50 lbs	
POTATO, GERMAN BUTTERBALL	Box or bag	50 lbs	
POTATO, IRISH	Box or bag	50 lbs	
POTATO, NEW	Box or bag	50 lbs	
POTATO, YUKON	Box or bag	50 lbs	
PUMPKIN, JACK O' LANTERN	By count or weight in bulk bins		
PUMPKIN, SWEET (PIE)	1/2- to 5/8-bushel crate (small) OR 1 1/9 bushel crate OR by weight in crate, carton, or sack	40 to 50 lbs	
RADISH	1/2 bushel OR 1 1/9 bushel box		20 bunches per 1/2 bushel box (8-12 in a bunch of uniform size)
RASPBERRIES	By volume in half-pints, pints and quarts in a single layer crate, flat or box		Usually 12 to a single layer crate, flat or box
SPINACH		25 or 50 lbs	Cure and pack dry, firm and shiny onions
STRAWBERRIES			Usually 12 to a single layer crate, flat or box
SUMMER SQUASH, COUSA	1/2 bushel box or 5/9-bushel crate or carton	21 lbs	
SUMMER SQUASH, YELLOW	1/2 bushel box or 5/9-bushel crate or carton	21 lbs	
SUMMER SQUASH, YELLOW	1/2 bushel box or 5/9-bushel crate or carton	21 lbs	
SUMMER SQUASH, ZUCCHINI	1/2 bushel box or 5/9 bushel crate or carton	21 lbs	
SWEET POTATO	1/2 bushel or 1 1/9 bushel box	40 to 50 lbs	

<b>Name</b>	<b>Container</b>	<b>Weight</b>	<b>Notes</b>
SWEET POTATO GREENS	Bushel crate or cartons (loose or in bunches)	20 to 25 lbs	12 or 24 bunches per crate or carton
SWISS CHARD	Bushel crates or cartons (loose or in bunches)	20 to 25 lbs	12 or 24 bunches per crate or carton
TARO LEAVES	Bushel crates or cartons (loose or in bunches)	20 to 25 lbs	12 or 24 bunches per crate or carton
TATSOI			
THYME	1/2 bushel box		12 or 24 bunches per box
TOMATO, HEIRLOOM	Tomato box OR 1/2 bushel box	25 lbs (tomato box) or 10 lbs (carton)	
TOMATO, SLICING	Tomato box OR 1/2 bushel box	25 lbs (tomato box) or 10 lbs	
TURNIP	1/2 bushel box (with tops) OR crate or bushel basket (topped)	25 lbs (1/2 bushel) or 50 to 56 lbs (bushel)	Trim tops to 1 to 1 1/2 inches
TURNIP, HAKUREI	1/2 bushel box (with tops)	25 lbs (1/2 bushel box)	
WATER SPINACH	Bushel or 1/2 bushel box or carton		12 or 24 bunches per box or carton
WATERMELON	By count or weight in bulk bins		
WINTER SQUASH, ACORN	1 1/9 bushel box OR by weight in crate	40- or 50-lb (crate)	
WINTER SQUASH, BUTTERNUT	1 1/9 bushel box OR by weight in crate	40 or 50 lbs (crate)	
WINTER SQUASH, DELICATA	1 1/9 bushel box OR by weight in crate	40 or 50 lbs (crate)	Usually 12 to a single layer crate, flat or box
WINTER SQUASH, KABOCHA	1 1/9 bushel box OR by weight in crate	40 or 50 lbs (crate)	
WINTER SQUASH, SPAGHETTI	1 1/9 bushel box OR by weight in crate	40- or 50-lb (crate)	

# INSURANCE & CERTIFICATION REQUIREMENTS

Protecting the safety of the U.S. food supply from foodborne illness requires a coordinated effort throughout the food chain, from the grower to the consumer. Many wholesale buyers have certain expectations that must be satisfied in order for a farmer to sell to them.

Farmers selling to restaurants, grocery stores, or other wholesale buyers might be required to have **product liability insurance** if they do not already have it. This form of liability insurance is designed to protect you if someone becomes sick from your food. The amount of insurance you need depends on the products you are selling and whether you are selling your products to a public or private institution. Fresh, whole fruits and vegetables are low risk and insurance for those products is usually less than for higher risk products like dairy and meats. Some farm property insurance policies already include coverage for products sold from the farm. Farmers should ask their insurance agents if their insurance covers product liability issues.

**Good Agricultural Practices (GAPs)** is a nationwide guidance system of developing plans, training, and documentation of best practices on the farm to minimize food safety issues. They were developed by the U.S. Department of Agriculture (USDA) and the Food & Drug Administration (FDA) and unlike regulations, the recommendations are not mandatory of all farmers. However, in recent years, wholesale buyers have been requiring GAPs certification, making GAPs mandatory for farmers who want to continue to sell to those buyers. It is a good idea for farmers to develop on-farm food safety plans, even if GAP certification is not required by the buyer.

By law, farmers who supply food processing companies are required to meet GAP standards. Food processors also need another system in place: an approved **Hazard Analysis and Critical Control Points (HACCP)** plan. HACCP is a tool for the evaluation of food processing methods and looks for specific points in production that can reduce risk. The HACCP system is verified through a third party audit or a government food safety officer.



## Good Agricultural Practices (GAPs)

GAPs guidelines include instructions on a variety of farm activities to minimize microbial contamination during growing, harvesting and packing fresh fruits and vegetables. GAP certification is a way to reinforce techniques that have kept our food safe. Farmers are probably already doing many of these practices, but GAP certification requires other practices such as proper documentation and employee training, which lets buyers know that the food they are purchasing is safe.

The U.S. Department of Agriculture (USDA) manages the program, and in coordination with state agriculture agencies, offers GAP training and certification services. Other organizations or university extension offices also offer classes, guides, and fact sheets on GAPs, covering everything a produce farmer would be involved in:

In the field:

- Irrigation and water quality
- Worker health and hygiene
- Manure and compost management

In the packing house:

- Sanitation during packing and storage
- Temperature control

Some states have created modest GAP certification cost-share programs or technical assistance and outreach programs to help farmers implement GAPs.

### *Where can I learn more about GAP training and certification?*

Check with your state's department of agriculture or university extension services to find out what is available for you. Some good resources available online are:

- University of Kentucky Cooperative Extension Service's GAPs handout gives a good overview of GAP.  
<http://www.uky.edu/Ag/CDBREC/gap.pdf>
- The New England Extension Food Safety Consortium's webpage has a number of fact sheets on GAPs and a voluntary downloadable audit form.  
<http://www.hort.uconn.edu/IPM/foodsafety/index.htm>
- UMass Amherst's GAPs Food Safety Manual contains step-by-step guidelines on how to develop individual farm plans and record keeping forms.  
<http://www.umassextension.org/nutrition/index.php/programs/food-safety/programs/good-agricultural-practices/gap-manual>

## SUMMARY

Demand for locally grown produce is increasing rapidly, and more farmers are considering selling wholesale to distributors, retailers, restaurants and institutions. Wholesale marketing offers new opportunities for farmers, including larger volume sales, consistent orders, and ease of marketing. However, farmers entering the wholesale marketplace must consider their capacity to meet post-harvest handling, packing, and other requirements. Carefully consider if your operation is best suited to sell wholesale by talking to potential buyers and other experienced farmers. This guide aims to be a resource to help farmers understand packing requirements and get a general picture of the wholesale market.

## RESOURCES

### **Packaging Requirements for Fresh Fruits and Vegetables North Carolina Agricultural Extension Office**

Available online at: <http://www.bae.ncsu.edu/programs/extension/publicat/postharv/ag-414-8/index.html>

### **Postharvest Management of Commercial Horticultural Crops Containers and Packaging Fruits and Vegetables Kansas State University Extension**

Available online at: [http://www.agmrc.org/media/cms/CDI\\_C07C95889B783.pdf](http://www.agmrc.org/media/cms/CDI_C07C95889B783.pdf)

### **Agricultural Marketing: Produce Packing Guidelines Penn State College of Agricultural Sciences**

Available at: <http://agmarketing.extension.psu.edu/Wholesale/ProdPkgGuide.html>

### **Wholesale Success: A Farmers' Guide to Selling, Postharvest Handling, and Packing Produce FamilyFarmed.org**

Available online at: <http://www.familyfarmed.org/WholesaleSuccesspvw.pdf>

### **Postharvest Handling of Fruits and Vegetables Appropriate Technology Transfer for Rural Areas (ATTRA)**

Available online at: <http://attra.ncat.org/attra-pub/PDF/postharvest.pdf>

### **Marketing Vegetables in Missouri University of Missouri Extension**

Available online at: <http://extension.missouri.edu/publications/DisplayPub.aspx?P=G6221>

### **Growing Michigan's Future: Chapter 3 – Intermediate Marketing Michigan Department of Agriculture**

Available online at: [http://michigan.gov/documents/mda/MDA\\_guide\\_chapter3\\_335563\\_7.pdf](http://michigan.gov/documents/mda/MDA_guide_chapter3_335563_7.pdf)

**Packing and Packing Materials**

**FAO: Agriculture and Consumer Protection Department**

Available online at: <http://www.fao.org/wairdocs/x5403e/x5403e06.htm>

**Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables**

**U.S. Food and Drug Administration**

Available online at: <http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/ProduceandPlanProducts/ucm064574.htm#intro>