Putting Michigan Produce ON YOUR MENU

How to Buy and Use Michigan Produce in Your Institution

INTRODUCTION

Did you know that Michigan farms grow more types of fruits and vegetables than most states in the country? As interest in fresh, local products has grown, more of these fruits and vegetables are being sold in Michigan for fresh consumption instead of being processed or exported. Local foods can be harvested and served at the peak of freshness and nutritional value. Buying local products, whether through distributors or directly from farmers, also supports our local farm families and Michigan's economy, which benefits all of us. This booklet was created to help Michigan schools, hospitals, and other institutions buy and use Michigan produce on their menus year-round.

The availability window for fresh Michigan produce is getting longer through the use of greenhouses and insulated hoop houses and through improved storage methods that extend the fresh season even further. Many kitchens have also increased the use of old stand-bys such as freezing, preserving, canning and drying. This booklet includes availability guides for Michigan produce that show the extended season and storage capability of many fresh fruits and vegetables.

While not all farmers are using post-harvest storage and season extension technology, we encourage you to ask your suppliers about fresh Michigan produce beyond the traditional summer and fall harvest months and to seek out the producers who are pushing the limits of the growing season. This booklet includes additional guides to help you calculate how much to buy in a variety of measures to meet purchasing, inventory and recipe needs. We have also included tips for storing and using many of the fresh items, plus food safety reminders and resources for locating farmers in your area.

We hope you will continue to increase your use (and enjoyment!) of the bounty of fresh fruits and vegetables available in our great state.

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Resources for Connecting with Local Farmers*

STATEWIDE RESOURCES

Local Harvest
Find farmer's markets, family farms, community supported agriculture (CSA), and other sources of sustainably produced food.
http://www.localharvest.org/

Michigan MarketMaker
This interactive mapping system links producers and consumers in Michigan.
http://mimarketmaker.msu.edu/

Michigan State University Extension
County and Regional Offices
http://www.msue.msu.edu/portal/default.cfm?pageset_id=25744&page_id=25770&msue_portal_id=25643

Natural Resources Conservation Service
County/State Service Centers
http://offices.sc.egov.usda.gov/locator/app?agency=nrcs

Michigan Department of Agriculture
Food safety and regulatory resources for institutions that buy and sell local produce.
www.michigan.gov/mda and www.SelectMichigan.org

Michigan Farm Bureau
County Farm Bureaus
http://www.michfb.com/counties/

Michigan Farm Marketing and Agri-tourism Association
Farm Market and Agricultural Tourism Directory
www.michiganfarmfun.com

Michigan Organic Food and Farming Alliance (MOFFA)
"Eating Organically: A Guide to Michigan's Organic and Local Farms and Related Businesses"
http://moffa.org/f/2005_MOFFA_Farm_List.pdf

Michigan Farmer's Market Association (MIFMA)
Market Locations
http://farmersmarkets.msu.edu/2007MarketLocations/tabid/772/Default.aspx

Michigan Agricultural and Commodity Organizations
Legislatively Established Commissions
http://www.michigan.gov/mda/0,1607,7-125-1570_2468_2470---,00.html

REGIONAL MICHIGAN RESOURCES

Taste the Local Difference
Michigan Land Use Institute's Guide to Local Farm Foods in Northwest Lower Michigan
www.LocalDifference.org

Food System Economic Partnership (FSEP)
Farm Product Directory for Washtenaw County in Southeastern Michigan
http://fsepmichigan.org/news/interactive_farms_map.html

Western Michigan FRESH
Directory of western Michigan family farms and businesses that sell locally grown products
http://nacredata.info/wmi/

*From Purchasing Michigan Products: A Step by Step Guide for Michigan Farm to School, by Betty T. Izumi and Colleen Matts. Available on the Michigan Farm to School website: www.mifarmtoschool.msu.edu

FRESH FRUIT AND VEGETABLE FOOD SAFETY

Institutions strive to provide safe food to their guests and customers. Within the Michigan Food Code, fresh fruits and vegetables are not considered potentially hazardous as long as they are whole, uncut and unadulterated. Avoid items that are broken, have areas of open skin, have been trimmed so that the edible part has been cut, or show signs of deterioration. Just as with any food item you bring into your kitchen, it is important to know your supplier of fresh fruits and vegetables. If you purchase through a distributor, ask them to carry Michigan products and identify them with the name and location of the farm of origin.

Whether you purchase directly from a distributor or farmer, here are some things to consider:

- Visit the farm or ask for information on production practices (if applicable).
- Look at the transportation vehicle for cleanliness, odors, chemicals and obvious debris.
- Inspect pallets, packages and boxed stored foods as they come off of the delivery truck and check for signs of cross-contamination.
- Inspect the produce at receiving for signs of insects, disease, bruising and damage, freshness, over-ripeness, and immaturity.
- Check proper transport temperatures for potentially hazardous foods.
- If the produce is advertised as being certified for food safety practices such as Good Agricultural Practices (GAPs), ask for documentation that references the certifying agency. This will allow you to contact the certifying agency for verification.

And always remember to use basic food safety practices throughout receiving, storage, preparation and service, including keeping foods at proper temperatures, working on clean, sanitized surfaces, maintaining good personal hygiene and preventing cross-contamination.

PURCHASE AND USE EQUIVALENCIES

VEGETABLES	AS PURCHASED 1 POUND EQUALS	PREPARED RAW 1 POUND EQUALS	FURTHER PREPARED 1 POUND EQUALS
Asparagus	1 bunch, 16 - 20 spears	3 cups, trimmed	2 1/2 cups, cooked
Beans, green or wax	5 cups whole	4 cups, cut	2 1/2 cups, cut, cooked
Beets	10 medium	3 cups, cut 2 cups, cooked, diced or sliced	
Broccoli	1 medium head	4 1/4 cups spears	3 1/4 cups, cooked spears
Brussel Sprouts		4 cups, trimmed	3 1/3 cups, cooked
Cabbage		6 cups, shredded	2 1/2 cups, cooked
Carrots	6 medium	3 1/2 cups, diced	2 cups, cooked, diced
Cauliflower	1 medium head	4 1/2 cups florets	3 1/2 cups, cooked florets
Celery	1/2 medium bunch	4 cups, diced	
Chard and Beet Greens		5 1/2 cups leaves	1 1/2 cups, cooked
Corn		2 cups kernels	1 medium ear = 1/2 cup, cooked
Cucumbers		1 3/4 - 2 cup, peeled, sliced	
Eggplant	1 small		1 1/2 cups, cooked, diced
Greens (Kale, Collards, Mustard, Turnip)		6 cups raw	1 1/4 - 1 1/2 cups cooked
Lettuce		8 cups, shredded	
Mushrooms		7 cups, sliced	
Onions	4 - 6 medium	2 1/2 - 3 cups, chopped	1 3/4 cups, cooked, sliced
Onions, green	4 bunches	2 cups, chopped	
Parsnips	3 - 4 medium	1 1/2 - 2 cups sliced	
Peas, shelling		1 cup, shelled	
Peas, snow		4 cups	
Peppers (Bell)	3 medium	2 1/2 cups, diced	2 1/2 cups, cooked, diced
Potatoes, white	3 medium		2 1/2 cups, cooked, diced
Pumpkin			2 cups, cooked
Radishes		3 3/4 cups, sliced	
Rutabagas	3 medium		2 1/2 cups, cook, diced
Salad Greens		6 1/2 cups, trimmed	

PURCHASE AND USE EQUIVALENCIES

VEGETABLES	AS PURCHASED 1 POUND EQUALS	PREPARED RAW 1 POUND EQUALS	FURTHER PREPARED 1 POUND EQUALS
Spinach		7 1/2 cups, trimmed	1 1/2 cups, cooked
Summer Squash		3 1/4 cups, sliced	2 cups, cooked
Sweet Potatoes		1 1/2 cups, cooked, mashed	
Tomatoes	3-4 medium	2 1/2 cups, diced	1 2/3 cups, cooked, diced
Turnips		2 2/3 cups, sticks	2 1/8 cups, cooked, diced
Winter Squash			1 1/2 - 2 cups, cooked, mashed

FRUIT	AS PURCHASED 1 POUND EQUALS	PREPARED RAW 1 POUND EQUALS	FURTHER PREPARED 1 POUND EQUALS
Apples	2-3 medium	3 cups, sliced	1 3/4 cups, peeled, cooked
Apricots	12-14 large	3 cups, sliced	
Blackberries	2 cups		
Blueberries	2 1/2 cups		
Cantaloupe		1 1/2 cups, cubed	
Cherries	3/4 - 1 cup, with pits	1 1/2 - 2 cups, pitted, sliced	
Grapes	3 cups, seedless		
Nectarines	3 medium	2 cups, sliced	
Peaches	2 - 3 medium	2 cups, peeled, diced	
Pears	2 large or 3 medium	2 1/2 cups, sliced	
Plums	6 medium	2 1/2 cups, sliced	
Raspberries	1 1/3 pints	3 cups, whole	
Rhubarb	4 - 8 stalks		1 1/2 cups, cooked
Strawberries	12 large, 36 small	3 1/2 cups, whole	2 1/2 cups, raw, sliced
Watermelon		7, 1/2-inch wedges	1 1/2 cups, diced, no rind

HERBS	
Herbs	1 tablespoon fresh herb leaves, snipped, or minced is equivalent to 1 teaspoon dried

Sources: USDA FNS Food Buying Guide for Child Nutrition Programs, January, 2008
The Packer Produce Availability and Merchandising Guide, Vance Publishing, 2007

STORAGE TIPS*

VEGETABLES

ASPARAGUS
Fresh asparagus should be kept cold and stored in a moisture-proof cover or wrapping. For best quality, use within a few days.

BEANS
While beans can be damaged from temperatures that are too hot or too cold, they can handle warm temperatures better than most other crops. Store at 41-46º F for a shelf life of up to 12 days.

BEETS
With low potential for damage, topped beets (with greens removed) can be stored from 4-10 months at 33-36º F with good air circulation to prevent rot or mold.

BROCCOLI
Broccoli is very sensitive to ethylene exposure and has great potential for damage. Store fresh broccoli at 32º F for 2-3 weeks.

CABBAGE
Store cabbage at 32º F for up to 6 months, and maintain a controlled atmosphere to avoid molding.

CARROTS
Carrots can be stored up to 6 months if kept at temperatures close to 32º F to prevent rot.

CAULIFLOWER
Store only good quality heads of cauliflower that are free of disease in controlled temperature storage at 32º F.

CORN
Corn can be sensitive to overheating so be sure to cool quickly and maintain storage temperatures at 32º F. Use within a week for best quality.

CUCUMBERS
Sensitive to chilling, cucumbers should be stored at 50-55º F. Use within 2 weeks for best quality.

EGGPLANT
Store this chill-sensitive crop at 50-54º F and use within 14 days.

GARLIC
For curing garlic, store at 68-86º F for 1-2 months. Garlic has low damage potential and can be stored for more than 9 months with low humidity at 30-32º F.

GREENS
(Kale, Collards, Broccoli, Mustard or Turnip Greens)

Sensitive to overheating, store cooking greens at 32º F up to 2 weeks.

LETTUCE
Do not allow lettuce to overheat, and use quickly for best quality. Store at 32º F.

LEEKS
Store leeks at 32º F and with ice for a shelf life of 2-3 months.

ONIONS
Cure at temperatures of 68-86º F, and store at 32º F for up to 9 months with moderate humidity.

PARSNIPS
Store parsnips at 32-34º F for 4-6 months.

PEAS
Sensitive to overheating and ethylene exposure, store peas at 32º F and use within 2 weeks for best quality.

PEPPERS
Store at temperatures of 45º F or higher to avoid chilling injury. Use within 2-3 weeks.

POTATOES
Sensitive to chilling and light, potatoes can be stored up to 12 months in a dark space at 45-50°F.

RUTABAGA
Store rutabaga up to 6 months at 32° F.

*Based on information from Wholesale Success: A Farmer's Guide to Selling, Postharvest Handling and Packing Produce by Sustain and FamilyFarmed.org.

STORAGE TIPS*

SALAD GREENS
Consistent cold temperatures of 32-36° F must be maintained for proper storage. Use within 2 weeks.

SPINACH
Very sensitive to bruising and overheating, handle spinach with care and store at 32° F. Use within 2 weeks.

SUMMER SQUASH
Handle summer squash with care to prevent bruises or scratches. To prevent injury from chilling, store at 41-50° F for less than 2 weeks.

SWEET POTATOES
Store at 55-59º F at 90 percent humidity for up to 1 year, but avoid exposure to ethylene in storage.

TOMATOES
Very sensitive to chilling, store tomatoes at 66-70º F to ripen. Ripe, red, tomatoes can be stored at temperatures less than 55º F, but taste may be negatively affected. Shelf life depends on ripeness when picked.

TURNIPS
Store turnips at 32º F for 4-5 months.

WINTER SQUASH
Store winter squash up to 3 months at 50-55º F.

FRUIT

APPLES
Store apples at 32-34º F for a shelf life up to 8 months.

BLUEBERRIES
Store blueberries at 32-37º F for 2-4 weeks. Avoid exposure to ethylene.

CANTALOUPE/ MUSKMELON
Melons are easily injured so handle with care. Store at 36-40º F for up to 2 weeks.

CHERRIES
For a 2-4 week shelf life, maintain low temperature storage (32-36º F).

GRAPES
Store grapes unwashed at 32º F for 4-7 weeks. Avoid ethylene exposure to prevent mold.

PEACHES
Store peaches at temperatures between 32-38º F for use within 1-3 weeks.

PEARS
Depending on variety, pears can be stored from 4-7 months around 30-31º F.

RASPBERRIES
Store around 32º F. Even with ideal storage conditions, use raspberries quickly (within 5 days) for best quality.

RHUBARB
With low damage potential, rhubarb can be stored at 32º F for 2-4 weeks.

STRAWBERRIES
Store strawberries up to 7 days at 32º F.

WATERMELON
Sensitive to chilling, store watermelon at 50-59º F for 2-3 weeks.

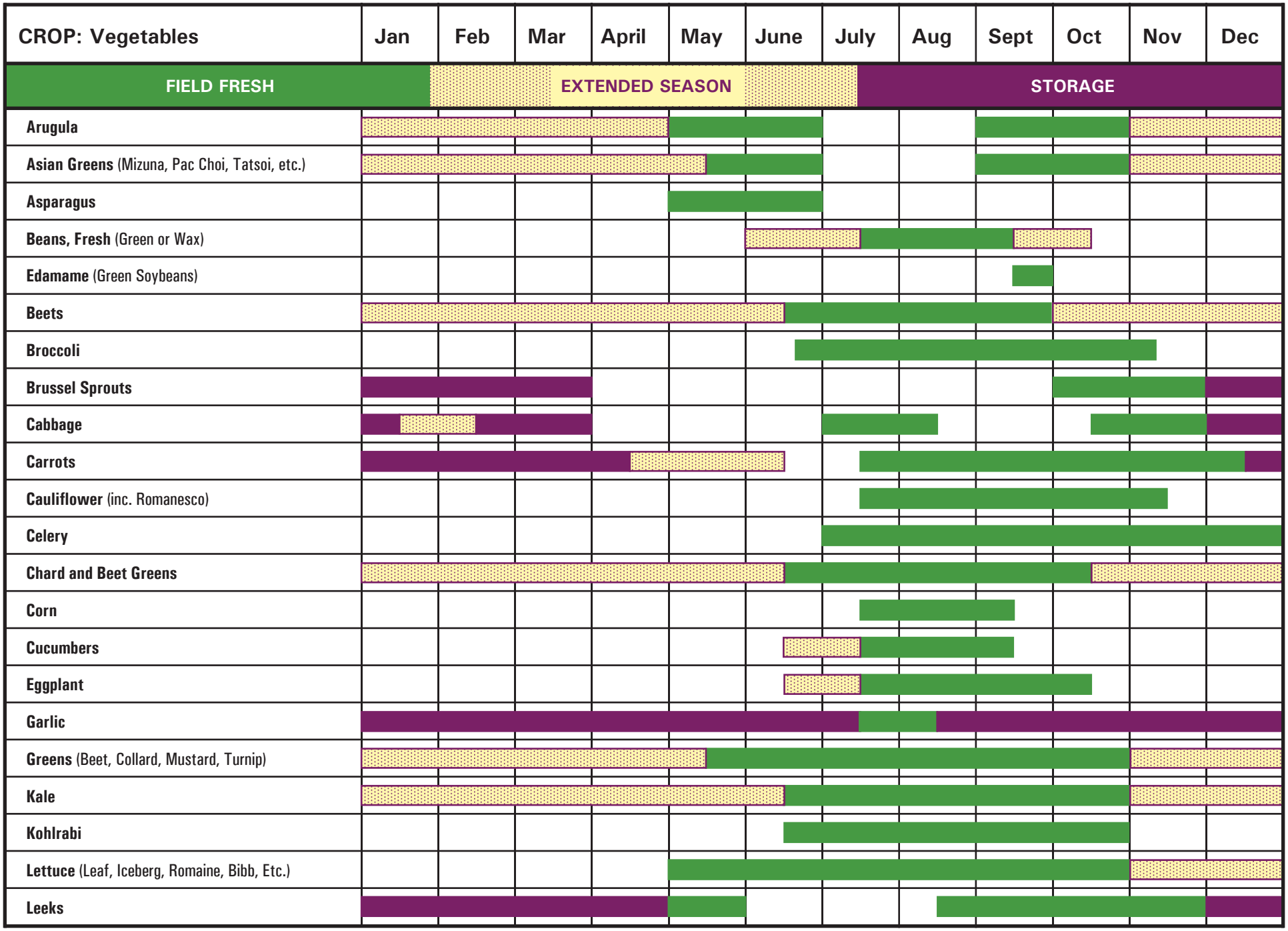
HERBS

BASIL
As basil can be easily damaged from chilling, store at a temperature no lower than of 54º F.

OTHER HERBS
Most herbs can be stored for 1-3 weeks, depending upon variety, at 32º F.

MICHIGAN PRODUCE AVAILABILITY*

*Availability may vary by variety and with weather conditions.



MICHIGAN PRODUCE AVAILABILITY*

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CROP: Vegetables Cont. / Herbs	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
	FIELD FRESH		EXTENDED SEASON					STORAGE				
Mushrooms, Fresh												
Onions, Spring												
Onions, Mature												
Parsnips												
Peas, Peapods & Shelling												
Peppers, Hot & Sweet												
Potatoes												
Pumpkins												
Radishes												
Rutabaga												
Salad Greens (Mesclun, Baby Greens, Etc.)												
Scallions/Green Onions												
Spinach												
Sprouts (Alfalfa, Bean, Etc.)												
Squash, Summer												
Squash, Winter												
Sweet Potatoes												
Tomatoes												
Turnips												
Basil												
Chives												
Cilantro												

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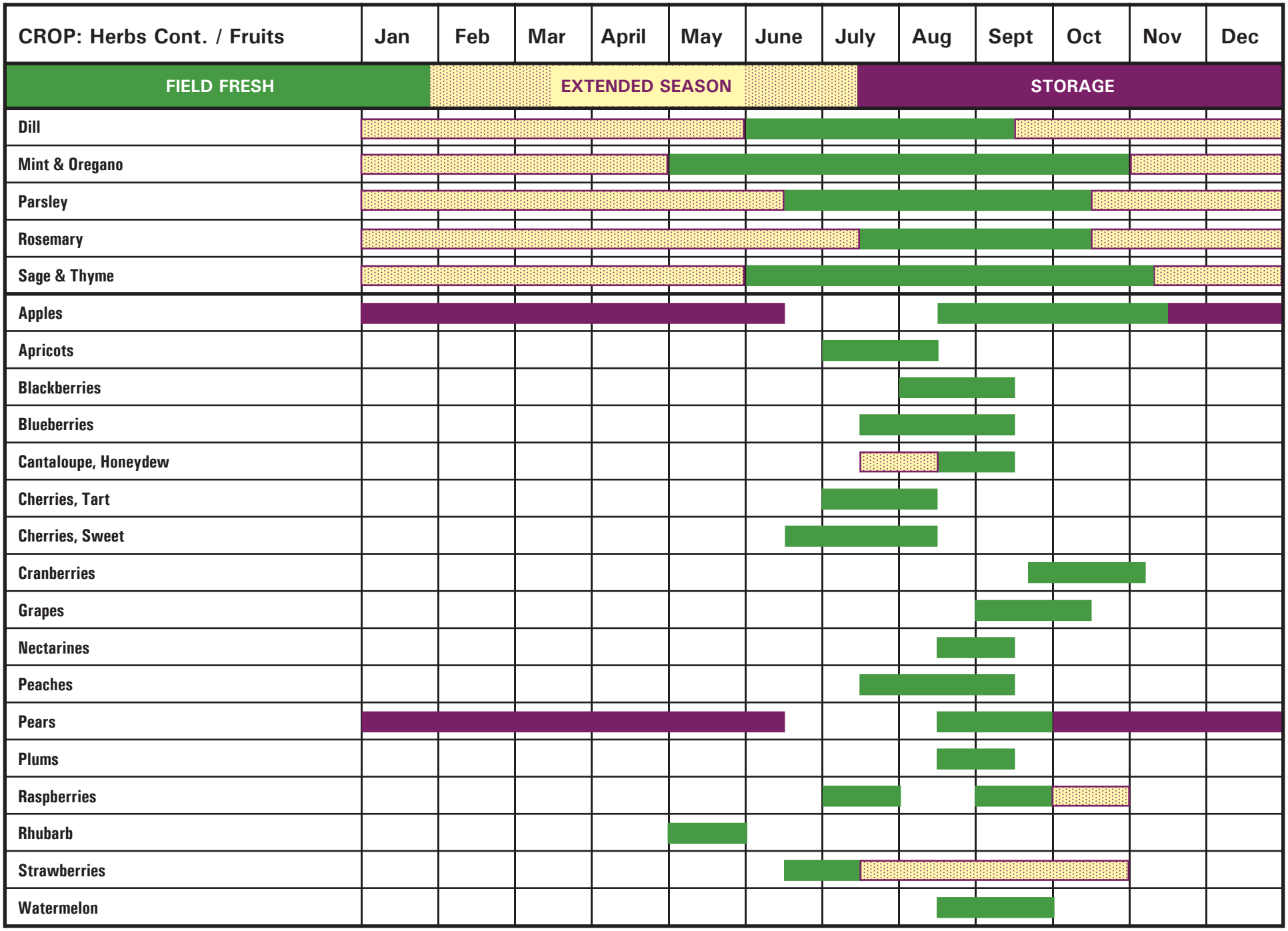

PROJECT TEAM

Michigan Department of AGRICULTURE

Michigan Food & Farming Systems-MIFFS
Bringing Farmers & Communities Together

MICHIGAN STATE UNIVERSITY

the c.s. mott group
for Sustainable Food Systems at MSU

Michigan Farmers Market ASSOCIATION

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