

ONIONS

LAYERS OF NUTRITION AND FLAVOR

.....
A COMPLETE RESOURCE FOR DIETITIANS





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TO: Retail Dietitians

FROM: The National Onion Association

RE: Onions – Layers of Nutrition and Flavor – Retail Dietitian Kit

Consumers are beginning to understand the benefits associated with preparing meals and eating at home; however, these busy shoppers also need easy, delicious, affordable and healthy meals. This is where onions come into play. Yes, the humble onion, with its layers of flavor and health, is full of nutritional benefits that add taste and versatility to many dishes.

To meet your shopper's need for easy meals and a healthy family the National Onion Association (NOA) developed 'Onions – Layers of Nutrition & Flavor' with turnkey resources for you to easily integrate into a variety of health promotion activities.

The kit includes the following resources:

SECTION 1: Onions for All Seasons - Types, colors and sizes

SECTION 2: Onions from the Ground Up - Onion farming and production practices

SECTION 3: Onion Nutrition and Health Benefits

SECTION 4: Onion Selection, Home Storage and Handling

SECTION 5: Healthy Cooking with Onions

SECTION 6: Seasonal Promotional Tools

- Family Meals – blog article; cooking class outline; weekly dinner menu & shopping list; media segment; social media posts
 - Tailgating – Media segment; social media posts
 - Diabetes Month – Blog article/media segment; social media posts
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SECTION 7: National Onion Association resources and contacts

To support your efforts this kit provides the educational selling tools to promote onions and drive incremental sales for your retailer.

We look forward to partnering with you as an advocate for onions and to advance wellness solutions and business success. If you have any questions about these materials, contact Shari Steinbach, MS RDN, NOA Consultant at shari@sharisteinbach.com.

How to Use the Onion Toolkit:

This toolkit is designed to help you and your customers understand the nutritional benefits and versatility of onions to create easy, seasonal meals that are nutritious and delicious. You'll also be able to answer important questions regarding onion production on the farm, selection in the store and home storage tips. The resources can be used in all aspects of your work: demonstrations, social media, television segments, classes and counseling.

Materials to answer consumer questions and provide guidance

- Interviews with two onion growers
 - Safe growing and handling practices
 - Types and flavors of onions
 - Preparation methods
 - Nutrition and health benefits of onions
 - How to select, store, and cut onions
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Resources to make your work as a dietitian easier

As a retail dietitian, we aim to you provide “layers” of consumer communication through many channels with credible, shopper-friendly resources that will plug into your existing areas of accountability.

Seasonal tools are presented in a format to allow you to customize the recipes and information with your stores logo. You can also simply copy and paste the information into your own template.

Seasonal layers of information include:

- Blog articles
- Social media posts
- Media segments
- Recipes and Menu Planner
- Cooking class outline

Kindly credit all information, resources, recipes, and photos to the National Onion Association / www.onions-usa.org as they were made possible through the generous donations of U.S. onion producers.

Section 1

Onions for All Seasons - Types, Colors and Sizes

Consumers should understand the traits and seasonal differences of onions. This knowledge will help them have the best possible eating and cooking experiences, and help them select and store onions to avoid waste.

In this section:

- Types of Onions (seasonal differences)
- U.S. Onion Availability
- Colors of Onions (with flavors & best uses)
- Sizes of Onions & Packaging Options
- Activity: Onion Identification to show the type and size varieties for an in-store demo or cooking class.
- Glossary of Allium Terms



Types of Onions

Onions of all colors – yellow, red, and white are grown in the U.S. and available year-round. Seasonal differences like flavor and texture are noticeable and highlighted as follows.



SPRING/SUMMER ONION TRAITS*

AVAILABILITY

March - August

SKIN

One or two thin layers, often transparent and lighter in color, especially yellow varieties

WATER CONTENT

High, which leads to a shorter shelf-life (30-60 days) and easier bruising

FLAVOR

Sweet to mild

BEST USES

Raw, pickled, lightly-cooked or grilled

FALL/WINTER ONION TRAITS

AVAILABILITY

August - May

SKIN

Multiple, thick, paper-like layers, darker in color, especially yellow varieties

WATER CONTENT

Lower than Spring/Summer, which leads to longer shelf-life (30-180 days)

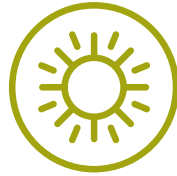
FLAVOR

Mild to pungent

BEST USES

Caramelized, roasted, fried or any dish with a longer cook time

*Many specialty sweet onions are part of this category and are sold under a specific trade name or label. All imported and some domestic onions with these traits are offered other times of the year.



SPRING/SUMMER U.S. ONION AVAILABILITY

ARIZONA

May - June

CALIFORNIA, GEORGIA

April - September

COLORADO

July - September

FLORIDA, SOUTH CAROLINA, NORTH CAROLINA

Limited Production

HAWAII

Year Round, limited mainland availability

NEW MEXICO

June - September

NEW YORK

July - August

TEXAS

March - June

WASHINGTON

June - August, Walla Walla Sweet Onions only

FALL/WINTER U.S. ONION AVAILABILITY

CALIFORNIA, NEVADA

September - April

COLORADO

September - March

IDAHO, EASTERN OREGON

July - May

ILLINOIS, INDIANA, IOWA, OHIO

September - March

MASSACHUSETTS, PENNSYLVANIA

Limited Production

MICHIGAN, MINNESOTA, NORTH DAKOTA, WISCONSIN

August - March

NEW YORK

August - May

UTAH

August - March

WASHINGTON, WEST/CENTRAL OREGON

July - June

Colors of Onions – with Flavors & Best Uses

The information below can serve as a guide to help consumers choose the color of onion to use in a recipe. Everyone has their own tastes and preferences; let them use the chart to guide their own decision. The most important thing to remember is “bring on the onions” and enjoy!

Note: Crop size shown is approximate.

Yellow



From sweet to mild to full-flavored, yellow onions are all-purpose and can be used for any recipe. Sweet and mild types are best raw, marinated or lightly cooked. Full-flavored and Spanish types are ideal for grilling, roasting, and caramelizing. When caramelized, they turn a rich, dark brown – they give French onion soup its famous color and flavor.

**Percentage of the U.S. onion crop:
Approximately 85%**

Red



Mild red onions are often eaten raw or pickled; they can be spicy, or pungent depending on the variety and time of year. Their color and texture lends well to grilling, char-broiling, and roasting. Red onions are commonly used on salads and sandwiches.

**Percentage of the U.S. onion crop:
Approximately 8-10%**

White



Crisp when raw, white onions have a distinct onion flavor with little to no after-taste. When sautéed, they have a mellow flavor and turn a golden color. White onions are popular in Latin and Italian cuisines, stirfrys, deli-style salads, and sandwiches.

**Percentage of the U.S. onion crop:
Approximately 5%**

Activity



ADDITIONAL LAYER: Onion Tasting by Color

Cut a yellow, red and white onion into large dices and place in individual containers.

Provide consumers with toothpicks and a tasting sheet. Have people taste each color and discuss the nuances of flavor and texture. Is there a distinct difference? Consider cutting a yellow onion several hours in advance and then compare to freshly cut pieces. How does flavor vary based on time?

Ask why one color of onion might be desired over another.



ADDITIONAL LAYER: Onion by Season

Discuss how onions will vary depending upon the season.

Which onion will have higher water content?

Which onion will take longer to cook? Why?



Side Bar

Preparation Tips

1. Cut onions as close to cooking or serving time as possible. Onion flavor deteriorates and its aroma intensifies over time.
2. High heat makes onions taste bitter. When sautéing onions, always use low or medium heat.
3. Chopped or sliced onions can be refrigerated for up to 7 days in sealed containers.

Sizes and Packaging Options

What are the common onion sizes?

Onions range in size from less than one-inch in diameter to more than 4.5-inches. The most common sizes sold in the United States are Medium and Large/Jumbo.

See below for sizing chart.



ONION SIZING

ONION TYPE	SIZE	COLOR
Super Colossal	4-1/2" and Up	Yellow, Red & White
Colossal	3-3/4" and Up	Yellow, Red & White
Large/Jumbo	3" and Up	Yellow, Red & White
Medium	2" to 3-1/4"	Yellow, Red & White
Pre-Pack	1-3/4" to 3"	Yellow, Red & White
Small	1" to 2-1/4"	Yellow, Red & White
Boiler	1" to 1-7/8"	Yellow, Red & White
Creamer	Under 1"	Yellow, Red & White

Packaging Trends

Advances in packaging technology continue to give producers and retailers new ways to market produce. From convenient pack sizes and unique formats, to environmentally friendly materials, to high-impact graphic floor bins, retailers and producers can partner in creative ways to boost value, movement and profit. Packaging trends are different from place to place around the country, but some of the most common trends for onions are:

- Loose, with small stickers on each bulb.
- Smaller mesh bags with a header label or wine glass label and carry-fresh bags.
- Packaging that showcases a product's quality and/or has space for product tips or recipes.

Quick Response (QR) codes are on the latest packaging elements to offer consumers a way to get additional information immediately. QR codes are scanned by a consumer with their Smartphone which links them to the producer or supermarket's website.

Common Dry Bulb Onion Packaging Options:

Mesh Bags - 2lb, 3lb, 5lb pre-packs, 10lb, 25lb, and 50 lb. Cartons - 40lb or 50 lb.

Fresh Cut/Value Added Onion Options:

Whole peeled, Diced, and Slivered.

Most retailers have a value-added section in their produce department where diced and sliced onions can be found. In addition, onions may be combined and packaged with other vegetables for easy meal ideas – stir-fries, fajitas, kabobs, etc. When time is short, these convenience items can help get a quick meal on the table.

Frozen:

Recipe-ready options are available in the freezer cases at supermarkets including pearl onions, diced, sliced (generally with other vegetables), and breaded onion rings.



Traditional produce netting pairs up with tags and film for attractive, convenient packaging options. Photo courtesy of Sev-Rend High Performance Packaging www.sev-rend.com

Glossary of Allium Terms

Allium

the plant genus of onion which includes chive, garlic, leek, scallion and shallot. Alliums belong to the lily family; it is a diverse genus with edible and ornamental species.

Allium Cepa

cepa is Latin for onion and refers to the species of allium. There are hundreds of Allium species and even more cultivars or specific varieties. Allium cepa is the third largest fresh vegetable crop in the United States, the second most diversely consumed vegetable in the world, and the most widely traded raw vegetable on the globe.

Bermuda

a cultivar of onion in its original form that no longer exists in the United States. Many hybrid varieties have Bermuda genetics. Bermuda as a term is still used in USDA Grade Standards.

Cipollini

(pronounced chip-oh-lee-knee) small, flat onion with a sweet, yet developed allium flavor without being sharp. Cipollinis store well and can be used as a side dish, in stews or as a flavoring in sauces. Meant to be eaten whole, they are most often pickled or marinated in balsamic vinegar.

Fresh Onion

synonymous for spring/summer onions harvested in the United States. Availability is March through August. Fresh onions have one to two thin layers of skin, often transparent and lighter colored, especially the yellow varieties. They have a shorter shelf life and higher water content (lower dry matter) than varieties available at other times of the year.

Green Onion

plant with straight, hollow green leaves, a white shaft with no bulb. Produced from Allium fistulosum or cepa cultivars, both green and white parts are edible. They have a mild onion flavor and are usually eaten raw or used for garnish. (Often called scallions and bunching onions.)

Onion Powder

finely ground dehydrated onion.

Onion Salt

onion powder combined with salt.

Pearl Onion

onions measuring less than one-inch in diameter, they often have a mild flavor and are served as a side dish or pickled. (Also called Creamer Onion.)

Scallion

see Green Onion.

Sweet Spanish

large, globe-shaped onion with genetic origins in Spain. These varieties have fewer papery layers, store well, and tend to be mild, yet offer classic onion flavor.

Spring Onion or Mexican Green Onion

green onions with a small immature bulb typically used for grilling, but suited for long simmering. Like a green onion, both green and white parts are edible. (Also called a BBQ Onion.)

Storage Onion

synonymous for fall/winter onions harvested in the United States and available August through May. Storage onions have multiple layers of thick, paper-like skin that can be darker in color, especially the yellow varieties. They have a longer shelf life and lower water content (higher dry matter) than varieties available at other times of the year. (Also referred to as a cooking onion.)

Sweet

term used to describe the mildest varieties of onions. Many specialty onions are grown for this characteristic. A few U.S. trade names include Maui, Vidalia and Walla Walla.



Section 2

In this section:

- PowerPoint (pdf) ‘From the Ground-Up’ <https://www.onions-usa.org/all-about-onions/where-how-onions-are-grown>
- Harvest Video <https://youtu.be/B1WEzdonO90>
- Interviews with two onion producers

Onion Growing Practices – A Round of Questions & Answers from two U.S. Onion Growers

The following interviews highlight the growing practices of two onion producers located in different growing areas.

Interview with a Spring/Summer onion grower



**Brett Williams, Owner
B G Williams Farms, LLC**

1. Brett, where is your farm located and what kind of crops do you grow besides onion?

Our farm is located in Uvalda, Georgia and we have been in business since 2002. We grow 400 acres of onions (mostly Vidalia), along with another 2,400 acres of sweet corn and broccoli.

2. Briefly describe the process of raising a crop of onions – seed to table.

Seeds are mechanically planted in a seed bed in the field where they will grow for 8 to 10 weeks. When the plants reach about the size of a #2 pencil, they are transplanted by hand to the production field. Transplanting is typically done in November and December.

The onions will be hand harvested in mid to late April through May. Harvest is done by hand. We trim off the roots and tops with onion shears in the field, place them in large bins and bring them to our storage shed. The onions are cured (dried) with 90 to 95 degree forced air for 48 to 72 hours. This process helps to increase the onion’s shelf life.

The onions are then graded and sorted based on quality and size. Some onions are shipped to retail stores within 7 to 10 days, while others are placed in cold storage at 34 degrees for later shipment, typically within 4 months. We ship to stores from April to September – basically all summer long.

3. What misconceptions about growing onions would you like to let consumers know the facts about?

Consumers are worried about the use of chemicals on their food. We use the least amount possible and actually do soil tests on each individual acre. This information allows us to apply only what is needed for each specific acre to ensure a high-quality product. Every year is different, so our soil testing and application is a very dynamic process that is dependent on weather conditions. Consumers deserve the highest quality when it comes to produce. We use chemicals judiciously to ensure the quality, taste and safety of what we produce.

Many individuals also ask about GMOs. In the U.S., no genetically engineered, transgenic, or GMO onions are available for commercial production.

4. What are your biggest challenges to produce a crop of onions? (Climate, costs, pests, crop disease, workforce etc.)

Finding enough labor is a big issue since our onions are hand planted and harvested. We use the H-2A guest worker program which is an established means for participating agricultural employers with a shortage of domestic workers to bring non-immigrant foreign workers to the U.S. to perform agricultural labor or services of a temporary or seasonal nature.

The climate can also be a big challenge for us. We grow onions over the winter in Georgia which is the most humid onion production region. Extreme temperature fluctuations, too much rain, or untimely rain can be an issue. Rain can lead to a more humid growing environment which is favorable for most of the diseases that affect onions.

We also face some competition with imported onions from Peru. Their onions are similar to Vidalia's and are available from September through February. Peru gets minimal rain and has controlled drip irrigation systems to help them manage the crop with more consistency.

5. What differences or similarities exist between organic and conventional production practices with onions?

Some farmers near us do grow organic onions, and those that do, have both conventional and organic fields. We do not grow organic onions on our farm. For me, it feels like growing a crop with your hands tied behind your back. Approved pesticides for organic production are not effective and cost more. The organic fields have to be hand weeded every 7 to 10 days. Labor shortages and the cost of frequent hand weeding can be challenging and costly. In addition, weather fluctuations, which are common for us, can easily destroy a whole field of organic onions.

6. Many consumers are worried about pesticides. Are pesticides used to grow onions, and if so, how do you minimize exposure and residue?

As mentioned earlier, because of our acre by acre soil testing and crop scouting for insects, we only use what we need, keeping chemical use to a minimum. Consumers may appreciate knowing 50 to 70% of the onion bulb is not exposed to pesticides. In addition, after harvest, the outer most layer of skin dries and flakes off or is removed before eating.

7. Have you seen a difference in the types of onions consumers request or buy over the past several years?

Yes, over the past five to eight years we have noticed consumers looking for specific flavors of high quality onions which is one reason why our sweet Vidalia's are so popular.

8. What GAPs (Good Agricultural Practices) do onion growers use to protect the soil health, water quality, workers and ultimately consumers?

We talked about the grid sampling of soil by acre and we also measure the soil conductivity – heavier soil vs. sandier soil for example. This information helps us target pesticide applications to specific pests or diseases. We also factor in the weather conditions as well.

All of our spray equipment is carefully calibrated to ensure the right amount is applied (per Environmental Protection Agency regulations). Every employee goes through a mandatory safety and training program. We have safety procedures for every step of our growing and harvesting process.

9. What is the most surprising thing or two consumers may not know about growing onions?

Consumers are often surprised by how labor intensive the onion growing process is. Each plant is hand planted and hand harvested.

We have 2-1/2 million plants per acre in the seed beds. This condensed growth assists with the intense management of the seedlings. When they are moved to the production field we have 90,000 to 100,000 plants per acre.

10. What is your favorite onion recipe?

I confess. I am still trying to enjoy eating onions. I enjoy the taste, but the texture bothers me. I have however, learned to love the broccoli we grow so there is hope!

My family loves to carve the center out of whole onions and then place a pat of butter and a beef bouillon cube inside. The onions are then placed in a microwavable pan and cooked on high for 6 minutes, or until tender. Everyone loves them!

Interview with a Fall/Winter onion grower



Rodrick Gumz, Owner
Gumz Farms, LLC

1. Rodrick, where is your farm located and what kind of crops do you grow besides onions?

Our farm is located in Endeavor, Wisconsin and we grow onions along with red potatoes, carrots, mint, corn, and beans. We have a total of 6,500 acres of which 650 are onions. We produce 40% of the onions in Wisconsin – some red, but mostly yellow onions.

2. Briefly describe the process of raising a crop of onions – seed to table.

We plant onion seeds around the second week of April with a specialized planter that can handle small seeds.

They will begin to bulb around the end of June and are harvested in late August through September. We can use mechanical harvesting as the onions we grow are a harder variety (mostly yellow). Softer, sweet onions often require hand harvesting.

We do receive small onion transplants that are started in Arizona and then shipped to us in bundles. These transplants have a 3 to 4-week lead on our seeds and allow us to go to market earlier at the end of July.

After harvest, our onions are dried and put into storage at around 36 degrees °F. Our yellow “storage” onions can hold for several months and maintain their quality. We ship them out to retail stores September through the month of May.

3. What misconceptions about growing onions would you like to let consumers know the facts about?

Many people don't realize onions are planted from seed on a large scale. As mentioned we use specific equipment that deals with the very small onion seeds.

Also, a lot of people think onions grow totally underground but actually, just the base of the bulb is under ground – about 3/4 of the bulb is above ground.

4. What are your biggest challenges to produce a crop of onions? (Climate, costs, pests, crop disease, workforce etc.)

Regarding weather, wind is a big threat as the onions start to grow in the spring. Blowing sand can actually cut off the onion from the soil. We do discover that each crop year has its own characteristics and challenges when it comes to weather. It could be the wind, rain or temperatures. Onions in general require a fair amount of care and attention.

One crop insect that we occasionally have to deal with is the onion thrip. The thrip reproduces quickly so it must be kept under control from the onset. Weeds can also be an issue we have to stay on top of.

With regards to labor, we do have issues obtaining workers on occasion but the ability for us to use mechanical seed planting and harvesting methods help.

5. What differences or similarities exist between organic and conventional production practices with onions?

We do not grow organic onions but we have grown organic potatoes. Specific pesticides are approved for organic production, but the selection of these products is limited. To date, no nutrient differences can be found between organically and conventionally grown produce.

6. Many consumers are worried about pesticides. Are pesticides used to grow onions, and if so, how do you minimize exposure and residue?

We use specific pesticides, approved for onion production, and only as needed. We also adhere to what is called pre-harvest interval. We do not use them during the prescribed designated period before harvest to ensure the onions are safe for consumption. We follow pesticide label requirements, which are approved by the EPA (Environmental Protection Agency) and are legally enforceable. Additionally, we follow recommendations

from crop scouts to ensure overall crop health. We want consumers to know how prudent we are when we have to apply pesticides. It is important for us to make sure we grow safe, healthy, and quality produce. Maintaining successful large scale production feeds our family as well as our growing population.

We are involved with many food safety programs and initiatives. Locally we support:

Wisconsin Healthy Grown® – Good for you, good for the environment. Healthy Grown® is a standard, a brand, created to convey to the market that Wisconsin Farmers are good stewards of the land and are conscientious and progressive. The Healthy Grown® program is a collaboration between Wisconsin Farmers, ecologists, conservationists, and University of Wisconsin researchers to better manage pests and invasive plants, restore ecosystems, prevent erosion, support native plants and animals, conserve quality water, improve potato and onion production (and as of 2016 onions were added to the program) and more.

We comply with government and industry regulated food safety programs.

- Food Safety Modernization Act (FSMA) - regulated by the Food and Drug Administration (FDA) and is MANDATORY, no matter what customers require.
- Global Food Safety Initiative (GSFI) - industry-driven global collaboration to advance food safety.
- Primus GFS - a GFSI approved third party audit scheme that customers require us to complete for packing shed food safety; many companies perform this audit; our auditor of choice is Primus.
- Harmonized GAP = a GFSI approved third party audit scheme that customers require us to complete for field food safety; many companies perform this audit; our auditor of choice is the USDA.



7. Have you seen a difference in the types of onions consumers request or buy over the past several years?

Red onions and sweet onions are increasing in popularity and we've also seen a growth in the demand for smaller packages of onions. Our average size bag is now 3 pounds which has dropped from larger pack configurations. Consumers are also looking for larger yellow onions – so smaller packages with larger onions is what we try to provide retailers.

8. What GAPs (Good Agricultural Practices) do onion growers use to protect the soil health, water quality, workers and ultimately consumers?

Good Agricultural Practices benefit the crop and our employees, as well as consumers. We use crop rotation and cover crop practices to protect soil health and take water samples to ensure safe water is used in all aspects of our operation. We are required to have policies in place to keep employees safe, as well as keeping our crops clean. We are audited annually, to ensure the policies in place are in compliance with the previously mentioned industry and government regulations. All of this and more allows us to produce safe, quality products.



9. What is the most surprising thing or two consumers may not know about onions?

Most people know onions are a flavorful ingredient that can enhance many recipes. What they may not know, is they deliver many nutritional benefits along with their great taste!

10. What is your favorite onion recipe?

ROASTED ROSEMARY-ONION POTATOES

4 medium red potatoes (1-1/3 pounds)

1 small onion, finely chopped (1/4 cup)

2 tablespoons olive or vegetable oil

2 tablespoons chopped fresh rosemary leaves or
2 teaspoons dried rosemary leaves

1 teaspoon chopped fresh thyme leaves or 1/4 teaspoon
dried thyme leaves

1/4 teaspoon salt

1/8 teaspoon pepper

Heat oven to 450°F.

Grease 15-1/2 x 10-1/2 x 1 inch jelly roll or sheet pan. Cut potatoes into 1-inch chunks. Mix remaining ingredients in large bowl. Add potatoes; toss to coat. Spread potatoes in single layer in pan.

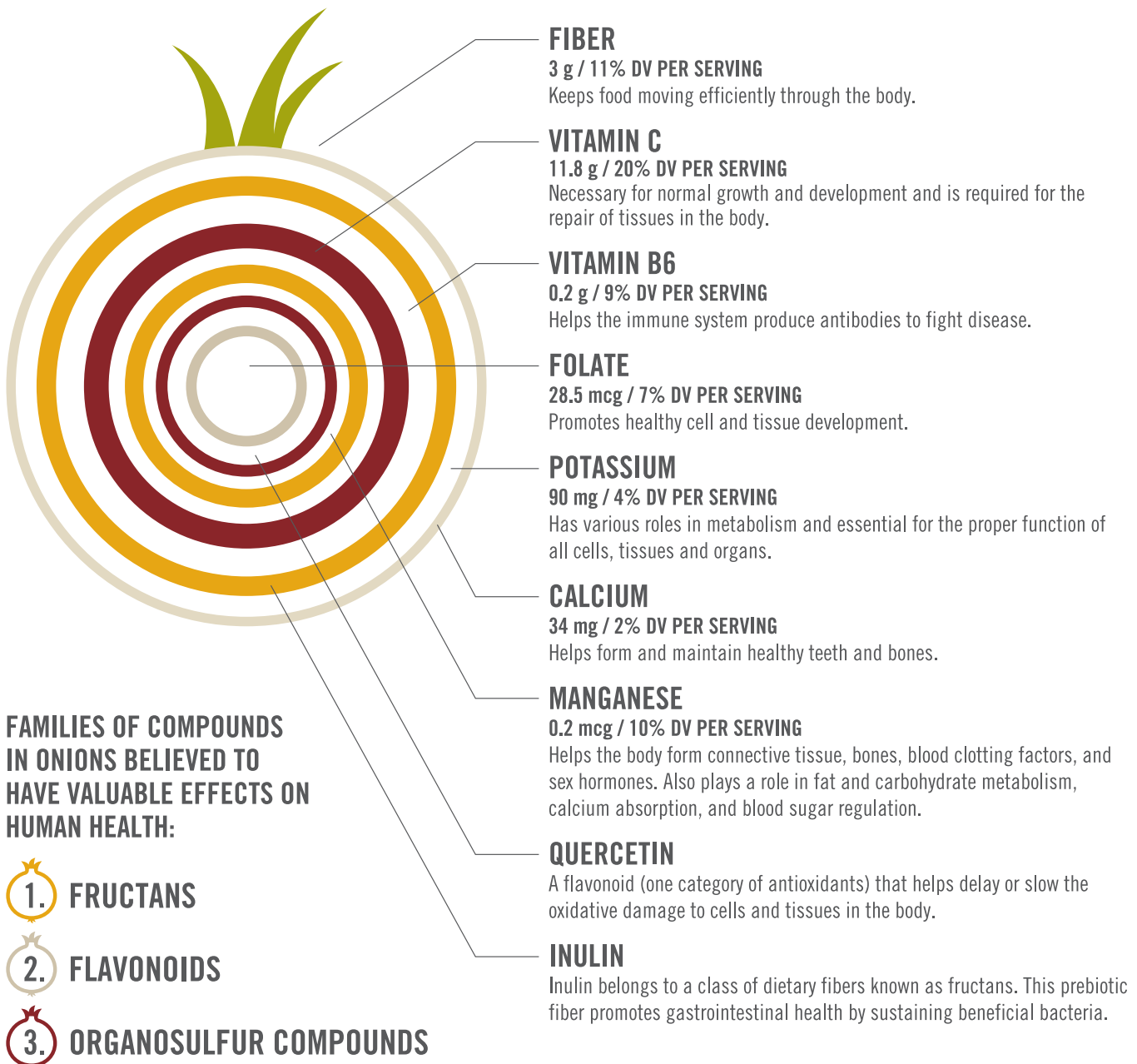
Bake uncovered 20 to 25 minutes, turning occasionally, until potatoes are light brown and tender when pierced with fork.

Source: Betty Crocker

Section 3

Onions – Layers of Nutrition and Health Benefits

Onions are prized for their flavorful addition to our meals, and their value-added health components. They bring abundant flavor to a wide variety of food, yet are low in calories. With only 64 calories in a one-cup serving, onions are naturally fat and cholesterol free. High in vitamin C, onions are a source of dietary fiber. In addition, onion bulbs have a unique combination of three families of compounds that are believed to have valuable effects on human health – fructans, flavonoids and organosulfur compounds.





Onions – Layers of Health Benefits:

Onions are becoming widely recognized for not only their flavor and versatility in worldwide cuisines, but also for their potential health benefits. Onions are part of the Allium class of vegetables and contain several compounds linked to reducing chronic diseases.

Here are 5 reasons to think of onions when looking to improve overall nutrition or help prevent chronic diseases.

1. Onion bulbs are among the richest sources of dietary flavonoids

and there are two subgroups of particular interest. The anthocyanins, which provide a red/purple color to some varieties and flavanols such as quercetin which is responsible for the yellow and brown skins of other onion varieties. Quercetin in all varieties of onions.

Flavonoids are antioxidants. They scavenge particles in the body known as free radicals which damage cell membranes. They may reduce or even help prevent some of the damage free radicals cause. A great deal of research has focused on quercetin, which is found at particularly high levels in onions. Studies have shown quercetin to protect against heart disease and several types of cancer with its antioxidant and anti-inflammatory activities.

2. Inulin is a soluble dietary fiber found in onions

Inulin is a naturally occurring oligosaccharide belonging to a group of carbohydrates known as fructans. Inulin appears to exhibit several health promoting functions including the promotion of healthy gut bacteria. Inulin is a prebiotic and helps maintain gastrointestinal health by sustaining (feeding) beneficial bacteria. Like other fibers, inulin aids digestion and prevents constipation. Inulin may also help manage blood sugar levels and is being studied in relation to improved calcium absorption.

NOTE: Although many consumers rely on fiber supplements, recommending a high-fiber diet that includes onions is best to obtain the benefits of the additional nutrients in whole foods.

3. Onions may help reduce the risk of heart disease

University of Wisconsin-Madison researchers found pungent onions exhibit strong anti-platelet activity. The organosulfur compounds, largely responsible for the taste and smell of onions (and garlic), have shown anti-inflammatory and anti-thrombotic activity. Platelet aggregation is associated with atherosclerosis, cardiovascular disease, heart attack, and stroke.

TIP: To reduce the pungency, sharpness or aftertaste of a raw onion, cut them the way you plan to use them, then place them into a bowl of ice water to stand for 1-1/2 hours before draining. If time is at a premium, place onions in a strainer or sieve. Run cold water through onions for at least a minute.

4. Allium vegetables, like onion, may contain cancer- preventive agents

The protective effect appears to be related to the presence of organosulfur compounds and mainly allyl derivatives, which inhibit carcinogenesis in the forestomach, esophagus, colon, mammary gland, and lung of experimental animals. The exact mechanisms of the cancer-preventive effects are not clear, although several hypotheses have been proposed and more research is needed.

5. And more...

Studies on the health benefits of onions and their unique nutritional properties have also shown possible links to the inhibition of gastric ulcers by scavenging free radicals and by preventing growth of the ulcer-forming microorganism, *Helicobacter pylori*. A recent study also suggests onion consumption has the potential to reduce the risk of osteoporosis by inhibiting bone resorption. And finally, the organosulfur compounds in onions appear to exhibit antimicrobial activity which may have some food safety benefits. Research will continue in order to clearly identify health benefits from onion consumption in the human diet.

https://www.onions-usa.org/img/site_specific/uploads/phytochemical_brochure.pdf



Section 4

Ten Essentials to Understanding Onions

10. What is difference between yellow, red, and white onions?

When the recipe calls for an onion, here are a few pointers.

Yellow



From sweet to mild to full-flavored, yellow onions are all-purpose and can be used for any recipe. Sweet and mild types are best raw, marinated or lightly cooked. Full-flavored and Spanish types are ideal for grilling, roasting, and caramelizing. When caramelized, they turn a rich, dark brown – they give French onion soup its famous color and flavor.

**Percentage of the U.S. onion crop:
Approximately 85%**

Red



Mild red onions are often eaten raw or pickled; they can be spicy, or pungent depending on the variety and time of year. Their color and texture lends well to grilling char-broiling, and roasting. Red onions are commonly used on salads and sandwiches.

**Percentage of the U.S. onion crop:
Approximately 8-10%**

White



Crisp when raw, white onions have a distinct onion flavor with little to no after-taste. When sautéed, they have a mellow flavor and turn a golden color. White onions are popular in Latin and Italian cuisines, stirfrys, deli-style salads, and sandwiches.

**Percentage of the U.S. onion crop:
Approximately 5%**

Note: Crop size shown is approximate.



9. How to avoid watery eyes when cutting onions.



When an onion is cut, sulfur compounds mix with alliinase enzymes, which irritates the eye and brings on the teary experience. To reduce tearing, chill onions at least 30 minutes before cutting. Refrigeration will slow down the chemical reactions. Also, be sure to use a sharp, straight-edge knife to minimize damage to the onion cells, thus creating less of the tear-producing compounds. Finally, cut the root end of the onion last, as it generally has the highest concentration of tear-producing compounds.

8. What are the health benefits of onions?

Onions add abundant flavor to a wide variety of food, yet are low in calories. Onions are a source of dietary fiber, Vitamins C and B6, potassium, folate, calcium, and iron. In addition to their nutritional value, onion bulbs have a unique combination of three families of compounds believed to have valuable effects on human health - fructans, flavonoids, and organosulfur compounds. Research indicates these compounds may support healthy aging and aid in the maintenance or prevention of chronic illnesses. For details visit: <https://www.onions-usa.org/all-about-onions/onion-health-research>



7. Can different cooking methods change the flavor of onions?



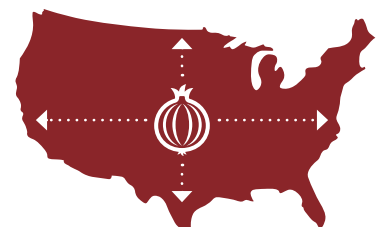
Cooking time and heat intensity both affect flavor. A short period of high heat brings out strong onion characteristics more quickly, while long cooking over low heat diminishes the strong taste, enhancing the onion's natural sweetness. Using too high a temperature (especially for a long a time) develops bitterness. Sautéing, stirfrying or caramelizing an onion over medium heat brings out the most savory flavor.

6. Where do onions grow?

Onions grow as a commercial crop in more than 20 of the United States, border-to-border and coast-to-coast. The top production areas are California, Idaho-Eastern Oregon and, Washington.

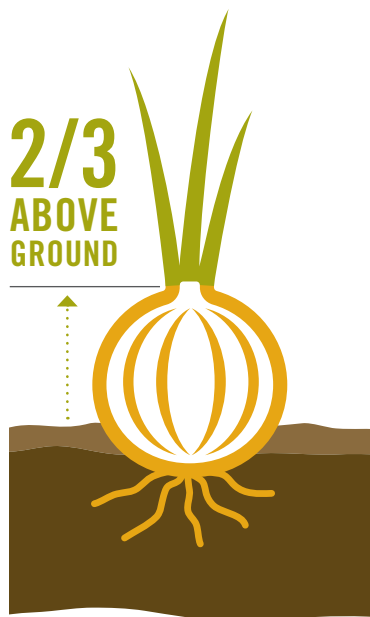
The National Onion Association estimates about 500 U.S. growers plant approximately 125,000 acres of onions each year, producing about 6.2 billion pounds annually. This includes organic production, but excludes bulb onions for dehydration. The U.S. onion industry accounts for 2.5 percent of the world onion acreage and over 7 percent of the world onion production.

20 STATES +



5. How do onions grow?

As an onion develops, nearly two-thirds of the bulb grows on top of the soil. This is unique when compared to root vegetables like beets or potatoes that grow completely underground. Onions have a 5-6 month growth cycle. Bulbing, or bulb development, is triggered by day length and latitude. The green tops naturally fall over when the onion is mature.



4. How do I store onions at home?



Keep whole bulb onions in a cool, dry, dark place, with plenty of air movement. Don't store them in plastic! Lack of ventilation will reduce their storage life. Refrigeration is only necessary when trying to extend the shelf life of sweet or mild onion varieties with high water content, but be sure to use a low humidity setting, or wrap them individually in newspaper or paper towels to keep them dry.

Whole peeled onions should be refrigerated after purchasing.

Cut onions can be stored in a sealed container for up to 7 days.

If you buy pre-cut onions, keep them refrigerated and use by the printed expiration date.

3. What are the common onion sizes?

Onions range in size from less than one-inch in diameter to more than 4.5-inches. The most common sizes sold in the United States are Medium and Large/Jumbo.

See below for sizing chart.



2. How do I select onions?

An onion bulb should be firm for its size and have little to no scent. Avoid bulbs with any cuts, bruises or blemishes. When purchasing whole peeled onions, select ones with an outside layer that does not show signs of being dehydrated.



ONION SIZING


ONION TYPE	SIZE	COLOR
Super Colossal	4-1/2" and Up	Yellow, Red & White
Colossal	3-3/4" and Up	Yellow, Red & White
Large/Jumbo	3" and Up	Yellow, Red & White
Medium	2" to 3-1/4"	Yellow, Red & White
Pre-Pack	1-3/4" to 3"	Yellow, Red & White
Small	1" to 2-1/4"	Yellow, Red & White
Boiler	1" to 1-7/8"	Yellow, Red & White
Creamer	Under 1"	Yellow, Red & White

1. In what ways can I use onions in cooking?

Onions have been cultivated as a food since at least 3000 B.C. and are the third largest fresh vegetable crop in the United States. Because of their many uses, onions are one of the most versatile vegetables, found in nearly every cuisine around the world. Prepare them any of the following ways:


Raw



 Slice or dice to use in salsas, guacamole, salads, burgers, and sandwiches.

Marinated



 Add flavor to mixed vegetable sides, bean, or pasta salads, dressed greens or grilled meat.


Pickled



 Tangy topping for fish tacos, pulled pork sandwiches, or tossed into salads.


Sautéed



 Season with spices or herbs to serve with other vegetables or mix into rice, grain, bean, or pasta sides.


Grilled



 Brush on a sauce, top with herbs or cheese for an easy side or sandwich topping. Mix into BBQ beans, salsas, or relishes.


Stuffed



 Fill with vegetables, pasta, rice, or protein and bake or roast. Or, use hollowed onions to hold a favorite dip.


Caramelized



 Savory ingredient for soup, or the perfect steak, chop, sandwich, or pizza topping.


Roasted



 Serve by themselves or with other vegetables alongside fish, poultry, or roasted meat.

Fried or Baked



 Rings, petals, or blooms are a crunchy appetizer or topping for sandwiches, soups, and salads.

Section 5

How to Cut Onions

To quote Julia Child, “It’s hard to imagine civilization without onions.”

Many a recipe starts with the chopping of an onion. When chopping, the savory and pungent onion can prickle our nose and send our tear ducts reeling.

This video demonstrates how to cut an onion, and answers the age-old question: What makes our eyes water when cutting onions? Many a wives tale suggests how to reduce the tears, but as the video will explain, technique, a sharp knife, and chilling the onion prior to cutting are the best ways to reduce tears.

HOW TO CUT AN ONION VIDEO LINK

<https://www.onions-usa.org/all-about-onions/how-to-select-cut-prepare-store-onions>

KNIFE SKILLS VIDEO FROM CUTCO – CUTTING AN ONION LINK

<https://www.cutco.com/products/video.jsp?play=onions#sm.0000012zaa0b6ye19st3bsjt11rpj>



How to cut Onions



STEP 1

Cut off the top/stem of the onion. Peel off the outer layers of skin. Dispose of skin and trim root end if necessary. Make sure not to contaminate the cutting surface and clean the knife before proceeding.



STEP 2

To dice, cut the whole peeled onion in half, from root end to stem end.



STEP 3

Lay each half cut side down on cutting board. Make multiple, evenly spaced cuts from root end to stem end of onion, being careful not to cut through the root end. Adjust the space between each cut to obtain the desired dice size.



STEP 4

Hold the onion together and make horizontal cuts parallel to the cutting surface. Again, be sure to leave the root end intact.



STEP 5

Make multiple cuts across the onion, adjusting the number of slices for desired dice size. Dispose of hard root end.



STEP 6

Separate onion pieces. Add to recipe for layers of flavor.

To Cut Slices and Rings.



For slices or wedges, cut whole peeled onion in half from stem end to root end. Make evenly spaced cuts along the grain.



For onion rings, place a whole peeled onion on its side and slice crosswise every 1/4 to 1/2-inch. Separate each slice into individual rings. Save the centers to dice for use in other recipes.

TO REDUCE TEARING:

When an onion is pierced, a chemical reaction takes place releasing organosulfur compounds. These compounds may irritate the eye and cause tearing.

TIPS:

- Chill onion about 30 minutes before cutting.
- Always use a sharp knife.
- Begin cutting at the top, leave root end uncut as long as possible as it contains the highest concentration of sulfur compounds.

Section 6

Healthy Cooking with Onions

When it comes to supplying a healthy dose of nutrients, onions are nothing to cry over. These flavorful bulbs are an excellent source of vitamin C, flavonoids, antioxidants, and sulfur compounds. In addition to sulfur, onions have another healthy trait going for them – quercetin. For more regarding the health benefits of onions, see section 3.

So, how should you advise customers? If they like the taste of raw onions, suggest adding sliced onion to salads, burgers or sandwiches. If someone can't stomach the pungent taste of raw onions, lightly cooked onions still provide numerous health benefits.

Leading Onion Uses

According to the National Onion Association, onions represent the third largest fresh vegetable industry in the United States. The U.S. per capita consumption of onions is about 20 pounds per year. This translates to over 450 semi-truck loads of onions used in the United States each day!

Onions are one of the most versatile vegetables. From raw to caramelized and from marinated to roasted, they can be found in a wide range of recipes from breakfast to supper and nearly every ethnic cuisine.

An estimated 20 percent of onions are fresh-cut or processed for retail or foodservice. Whole peeled or diced/sliced onions are commonly sold to consumers at retail for fresh consumption. Peeled, sliced, diced, and chunked onions go directly to the foodservice industry. Commercial food companies also use pre-cut products in prepared food items like salsa, soups, sauces, and breaded appetizers like onion rings.

Onion Preparation Tips

- Refrigerate onions 30 minutes before preparation to prevent tearing.
 - Prepare onions as close to cooking or serving time as possible. An onion's flavor deteriorates and its aroma intensifies over time.
 - Yellow onions are considered all-purpose and best for cooking.
 - Properly refrigerated, chopped or sliced onions can be stored in a sealed container for 7 to 10 days.
 - High heat makes onions turn bitter. When sautéing onions, always use low or medium heat.
 - To remove the smell of onions, rub hands and equipment with lemon juice or salt.
-

Cooking Tips

- The taste and texture of onions varies greatly depending on the preparation method.
- Sautéing will soften the texture and enriches the taste of onions. Consider using broth or wine instead of butter or oil to lower the fat content.
- Mild/sweet onions are ideal for salads and other fresh or lightly cooked dishes.
- Full flavored onions are best for savory dishes that require longer cooking times or more flavor. They often have a peppery taste, characteristic of a good cooking onion.

Onion Preparation Methods:

Onions are versatile, delicious and are present in trendy, ethnic and healthy dishes. This section briefly reviews onion preparation methods and provides a suggested recipe that demonstrates the cooking technique.



RAW ONIONS

Raw onions – sliced, diced or minced – are used in salsas, salads and as condiments for burgers and sandwiches.

Recipe Inspiration: This salad makes a quick and complete dinner and the leftovers are perfect for a brown bag lunch for school or work. <https://www.onions-usa.org/recipes/227-High-Protein-Onion-and-Quinoa-Salad>



SWEATING ONIONS

Sweating is the gentle heating of vegetables over low heat in order to soften them without browning. A little fat is used to begin the cooking process and the pan is covered during cooking so the ingredients retain some of their natural moisture. Sweating results in tender, translucent onion pieces.

Recipe Inspiration: <https://www.onions-usa.org/recipes/137-Creamy-Onion-Dip>



SAUTÉING ONIONS

Sautéing is quickly cooking an item in a small amount of hot fat over high heat. In French, the word sauté means “to jump.” Onions are often tossed in a pan to make them jump to ensure even cooking without burning them.

Recipe Inspiration: If you’re looking for an easy brunch or light supper recipe this one fits the bill! [Frittata with Onion, Tomato and Basil](https://www.onions-usa.org/recipes/137-Creamy-Onion-Dip)



CARAMELIZING ONIONS

Caramelization is the browning that occurs when the naturally present sugars of the onion are heated to the appropriate temperatures, which creates a rich, complex aroma, flavor and brown color. To caramelize, slowly cook onions in a small amount of fat. The exact time needed will vary based on water content and cut of onions as well as volume.

Recipe Inspiration: <https://www.onions-usa.org/recipes/247-Pasta-Primavera-with-Caramelized-Onions>



BROILING/GRILLING ONIONS

Broiling is a dry heat method where food is cooked directly under or over a heat source. Grilling is a dry heat cooking method where food is cooked on open grates above a direct heat source. A broiler or grill is typically scraped clean and seasoned with fat to prevent food from sticking.

Broiling and grilling are both fast methods for cooking onions. Onions may be sliced or cut into wedges for broiling or grilling. Broiled or grilled onions add a savory flavor to salsas, relishes and sandwiches.

Recipe Inspiration: This recipe is the perfect accompaniment to a grilled steak or burgers for a warm weather family meal or party. [Grilled Balsamic Onions with Bleu Cheese Crumbles](#)



MARINATING ONIONS

Marinating is the process of soaking foods in a seasoned, often acidic, liquid before cooking. Marinating adds flavor to the food.

Recipe Inspiration: [Avocado Citrus Salad with Marinated Onion](#)



PICKLING ONIONS

Pickling is the saturation of fruits or vegetables with acid, usually vinegar, in order to preserve them. Pickled onions are used in salads and as a topping for sandwiches and tacos.

Recipe Inspiration: [Pickled Ginger Onion Relish](#)



ROASTING ONIONS

Roasting is a dry-heat method where food is surrounded by hot air. Roasted onions are an easy-to-prepare side dish. Onions may also be placed beside a large cut of meat while roasting.

Recipe Inspiration: [https://www.onions-usa.org/recipes/235-Roasted Onions with Herb Butter Sauce](https://www.onions-usa.org/recipes/235-Roasted-Onions-with-Herb-Butter-Sauce)



STUFFED ONIONS

Onions may be used to hold a variety of ingredients. Hollowed out raw onion bulbs may be used to hold dips or may be stuffed and baked or roasted.

Recipe Inspiration: [Stuffed Onion – Ratatouille Style](#)

Section 7:

Stocking the Pantry for Easy Meals

A well-stocked kitchen and a meal plan can make family meals much easier – saving time, money and ensuring a simple to prepare, balanced meal is on hand.

Stocking the Kitchen

FRESH PRODUCE:

- Look for sales, but only buy what fits into your menu plan to avoid waste
 - Add colorful options to your cart – blue/purple; red; yellow/orange; green and white
 - Yellow, red, and white onions
 - Green onions
 - Salad greens
 - Potatoes
 - Peppers
 - Cucumbers and tomatoes
 - Avocados
 - Baby carrots and sugar snap peas for quick snacks
 - Bananas
 - Apples
 - Citrus
 - Berries
 - Peaches, nectarines, plums
 - Melons
 - Pineapple
 - Try something new each week for a fun family taste test
-

DAIRY:

- Milk
- Yogurt
- Cheese
- Kefir

FRESH MEAT, POULTRY AND SEAFOOD:

- Choose items from your weekly menu plan and stock up during sales
- Lean beef – ground, steaks, roast
- Pork chops and tenderloins
- Turkey – ground, tenderloins
- Chicken – breasts, tenderloins, etc.
- Fish fillets

AISLE BY AISLE

- Whole wheat pasta, quick couscous mixes, quinoa and instant brown rice
- Whole grain hot and cold cereals
- Whole grain granola bars
- Whole grain crackers
- Marinades and sauces like teriyaki, lemon pepper, garlic & herb, mesquite, and barbecue
- Canned tomatoes
- Canned vegetables (corn, mushrooms, beets, etc.)
- Canned beans such as black, kidney, garbanzo, great northern, and pinto
- Reduced sodium canned or boxed broth and recipe-ready soups
- Salsa
- Prepared spaghetti sauce
- Canned or pouch packed meats like tuna, salmon or chicken
- Balsamic or other flavored vinegars
- Canola and olive oil
- Canned fruit packed in water or its own juice like pears, pineapple, peaches
- Dried fruit such as raisins and dates
- Nuts and seeds

FREEZER:

- Frozen vegetables
- Frozen vegetable blends for stir-fry, fajitas, soups, etc.
- Frozen potatoes
- Frozen fruit for smoothies or dessert
- Meatless burgers made from soy or beans
- Fish fillets and shrimp
- Better-for-you frozen entrees
- Frozen tortellini, ravioli or perogies
- Whole grain waffles or pancakes
- Cheese pizza (add your own healthy toppings)



7-Day Menu Planner and Shopping List:

DAY 1:

High Protein Onion & Quinoa Salad

[https://www.onions-usa.org/recipes/227-High Protein Onion and Quinoa Salad](https://www.onions-usa.org/recipes/227-High-Protein-Onion-and-Quinoa-Salad)

Serve with: Whole grain baguette from the bakery, and frozen yogurt

DAY 2:

Tuscan Pizza

[https://www.onions-usa.org/recipes/234-Tuscan Pizza](https://www.onions-usa.org/recipes/234-Tuscan-Pizza)

Serve with: Fresh melon wedges

DAY 3:

Chunky Southwestern Soup

[https://www.onions-usa.org/recipes/184-Chunky Southwestern Soup](https://www.onions-usa.org/recipes/184-Chunky-Southwestern-Soup)

Serve with: Whole grain tortilla chips, low-fat milk

DAY 4:

Open Face Roast Turkey Sandwich w/Caramelized Balsamic Onions

[https://www.onions-usa.org/recipes/78-Open Face Roast Turkey Sandwich with Caramelized Balsamic Onions](https://www.onions-usa.org/recipes/78-Open-Face-Roast-Turkey-Sandwich-with-Caramelized-Balsamic-Onions)

Serve with: Fresh pear slices

DAY 5:

Baja Fish Tacos with Onion Mango Salsa

[https://www.onions-usa.org/recipes/193-Baja Fish Tacos with Onion Mango Salsa](https://www.onions-usa.org/recipes/193-Baja-Fish-Tacos-with-Onion-Mango-Salsa)

Serve with: Pineapple chunks, low-fat milk

DAY 6:

Frittata with Onion, Tomato and Basil

[https://www.onions-usa.org/recipes/240-Frittata with Onion Tomato and Basil](https://www.onions-usa.org/recipes/240-Frittata-with-Onion-Tomato-and-Basil)

Serve with: Whole grain English muffins, low-fat milk and fresh strawberries

DAY 7:

Slow Cooker Pot Roast

[https://www.onions-usa.org/recipes/104-Slow Cooker Pot Roast](https://www.onions-usa.org/recipes/104-Slow-Cooker-Pot-Roast)

Serve with: Tossed green salad, whole grain rolls

Shopping List

GROCERY:

- Red quinoa
 - Vegetable broth
 - 2 cans chicken broth
 - 1-1/2 cups low sodium beef broth
 - Horseradish sauce
 - 1 can (15 oz.) tomato sauce
 - Bottled pasta or pizza sauce
 - Prepared pizza crust (i.e.: Boboli)
 - Whole grain tortilla chips
 - Large stand and stuff taco shells
 - 1 jar mild salsa
 - Chipotle chiles in adobo sauce
 - Canned pineapple chunks
 - 2 cups tomato juice
 - Whole grain English muffins
-

PRODUCE:

- 8 large white onions
 - 1 red onion
 - 2 red pepper
 - Fresh pears
 - 1 mango
 - Lime
 - 1 green pepper
 - 1 lb. Potatoes
 - 1 lb. Red potatoes
 - 2 large carrots
 - Sliced mushrooms
 - Cherry tomatoes
 - 2 Tomatoes
 - Baby kale (3 cups)
 - Prepared green salad
 - Lettuce leaves
 - Strawberries
 - Red apple
 - Fresh melon
 - Fresh oregano
 - Fresh cilantro
 - Fresh basil
 - Fresh rosemary
 - Fresh thyme
-

MEAT/POULTRY/SEAFOOD:

- ½ lb. sweet or spicy Italian sausage
- 1 (2-1/2 pound) boneless beef sirloin tip or chuck roast

DAIRY:

- 8 oz. Shredded mixed Italian blend cheese
 - Shredded cheddar cheese
 - Grated Romano or Parmesan cheese
 - Low-fat milk
 - Light sour cream
 - Eggs (6)
-

BAKERY/DELI:

- Whole grain baguette
 - 4 Crusty whole grain sandwich rolls
 - Whole grain dinner rolls
 - Shredded rotisserie chicken (2 cups)
 - 1 lb. sliced roast turkey
-

FROZEN:

- Frozen yogurt
 - Breaded fish fillets or fish sticks
-

PANTRY STAPLES:

- Salt & Pepper
- Cider vinegar
- Balsamic or red wine vinegar
- Honey
- Lemon juice
- Dijon mustard
- Olive oil
- Canola oil
- Dried oregano
- Cumin
- Red chili flakes
- Minced garlic
- Flour



Seasonal Layer – Fall/Winter

Cooking Class Evaluation

Thank you for attending today's Family Meals cooking class.

To make sure our education programs meet your needs, please complete this brief evaluation.

We appreciate your feedback!

1. I learned new information about the importance of family meals. **Yes / No**
2. I learned new information about the nutritional benefits of onions. **Yes / No**
3. I learned new information about the cooking methods for onions. **Yes / No**
4. I will use the recipes for future meal preparation. **Yes / No / Maybe**
5. This cooking class met my expectations. **Yes / No**
6. What were the 3 most interesting things you learned in this class?
 -
 -
 -
7. Are there specific ways this class could be improved?
 -
 -
 -
8. What suggestions do you have for future class classes?
 -
 -
 -

Thank you!