



SEASON FOR HEALTH

A Guide For Using Herbs and Spices For Your Home Cooking

▶▶▶ **KIAH J. FARR**, Undergraduate Research Assistant, Department of Nutritional Sciences, Physiology, College of Medicine, University of Arizona
YURI NAKAGOMI, M.S., Research Scientist, Chiba University, Chiba, Japan S&B FOODS, INC. Tokyo, Japan
NOBUKO HONGU, PH.D., M.ED., R.D., Associate Professor, Nutrition & Physical Activity Extension Specialist, Department of Nutritional Sciences, University of Arizona

Herbs and spices create flavorful meals and popular chefs. They have also played a significant role in culture, society, and economics throughout history. Europeans greatly valued spices and sent explorers to navigate routes for the spice trade. Additionally, spices have long been used in culinary preparation for their ability to keep food from spoiling and herbal medicines are famous for their natural healing powers, having played key roles in many ceremonies throughout numerous cultures. Both herbs and spices are celebrated for their taste, smell and color, and many cultures have recognized their healing powers, as well.

As science is now proving, the benefits of cooking with herbs and spices go beyond adding taste, flavor and color to foods. Recent studies have presented information about the healthy properties of some herbs and spices, and we are learning more about how these spices can help us. For example, recent studies show that garlic has medicinal properties similar to some drugs prescribed by a doctor.¹ Eating about one clove of garlic per day has been shown to lower cholesterol, blood pressure, and possibly have cancer-fighting properties.^{1,2} Additionally, spices like turmeric have been noted for their healing properties and great taste. A recent study investigated how turmeric works, and demonstrated the benefits of turmeric for treatment of rheumatoid arthritis.³ Another similar study on turmeric reported the anti-breast cancer effects of the powerful yellow spice.⁴

This article introduces common herbs and spices that can be found in grocery stores or gardens, explains their health benefits used in cooking and provides tips on how to incorporate them into a balanced diet

SPICES AND HERBS

What makes an ingredient an herb and not a spice? In any grocery store you can find both herbs and spices. In general, herbs tend to be more leafy and plant-like (Figure 1) and spices are more likely dried and ground (roots, buds, seeds, berries or fruits of plants and trees), and are commonly found in grocery stores as powders in small jars. However, there is no clear definition between herbs and spices. According to the American Spice Trade Association, spices are defined as any plant vegetable substance in the whole, broken, or ground form for seasoning purposes.⁵ This broadens the definition of spices to include herbs, dehydrated vegetables (examples, garlic and onion), spice blends and spice seeds. Besides these definitions, some plants yield both an herb and a spice. For example, dill weed (an herb) and dill seed (a spice) come from the same plant, but the American Spice Trade Association defines both as spices.⁵

HERBS

More than just leafy greens, these plants are perhaps the longest-used flavoring ingredients. Again, herbs tend to be fresh-looking, small plants (or roots) (Figures 1). However, ground and dried versions of herbs are also commonly sold, and are sometimes more potent than their leafy green (or whole root) counterparts. (Figure 2) Fresh herbs are available at most grocery stores in the produce section, and are usually sold by the small bundle. When purchasing herbs, choose plants without any

wilted or brown leaves or stems. Store fresh herbs in a cup or a vase with water (Figure 1) or wrapped in a damp paper towel in the refrigerator. To keep unused fresh herbs longer, they can be packed and frozen in plastic bags for later use. Another way to preserve these tasty ingredients is to briefly sauté fresh herbs in extra virgin olive oil, and then freeze the herbs and oil in an ice cube tray. The blocks of extra virgin olive oil can then be used for a quick method to start a healthy and flavorful meal, simply by unthawing a block in a saucepan over low heat. Growing container herbs at home is also an easy way to have fresh herbs year-round, anytime you want to use them.⁶

With different flavor profiles and appetizing aromas, herbs are a delicious component of cooking, but the benefits extend beyond taste. Research is beginning to demonstrate just how great the protective health benefits may be. Herbs, along with many fruits, vegetables, and edible plants, contain antioxidants, and have anti-inflammatory properties.^{1,2,4,7,8}

Antioxidants are substances found in foods which inhibit (“anti”) oxidation in the body’s cells. Oxidation is a chemical reaction that produces free radicals. Free radicals cause destruction of our body’s cells and antioxidants stop them. Recent studies have shown antioxidants reduce the risk of heart disease and cancer. Antioxidants can be found in vegetables, fruits, plants, herbs, and spices.

The following is a list of commonly used herbs.

Basil

Sweet, warm, and aromatic. Although sweet basil (or Italian basil) is more common, Thai basil also has a distinct flavor. Thai basil has a purple stem, instead of green like sweet or Italian basil, and is closer to the flavor and aroma of mint than other basil. Use with meats, seafood, and vegetables. Sweet basil complements the flavor of tomatoes very well. Basil has a strong and delicious flavor, especially in sauces like pesto. This is one of the easiest herbs to grow in a home garden.⁹

Cilantro

Fresh and earthy. Cilantro refers to the leaves of the coriander plant. Use with traditional Mexican-style dishes, meats, salads, and sauces. Cilantro adds a great brightness of fresh flavor to foods.

Chives

Delicate onion flavor (not as potent as yellow or red onion). Use chives fresh to maintain color and flavor. Chives are commonly added to baked potatoes, soups, and egg dishes.

Dill

Sweet and aromatic. Use with seafood, egg dishes, soups, potato salad, or vegetables. Add to vinegar and oil to make an herb salad dressing.

Mint

Sweet and aromatic. Use with salads, sauces, and stir-fry dishes. Mint is also commonly used in baking. Adding a few mint leaves and fruits like lemon, pineapple, orange or berries to water (also called infusing flavors) is a fun way to create a healthy, refreshing drink.

Oregano

Savory and earthy. Use with meats and vegetables. Oregano is a basic ingredient in Italian and Mexican cooking. It complements the flavor of tomatoes in pizza and soups.

Parsley

Savory, aromatic, and subtle. High in vitamin K. Not only is parsley a garnish for any dish, it goes wonderfully with grilled meats and vegetables, and in salads.

Rosemary

Strong and fragrant. Use with meats and hearty vegetables. Place a few leaves on top of roasts or baked chicken and potatoes.

Sage

Strong and aromatic, tastes best cooked. Sage pairs well with roasted poultry, stews, and casseroles. As a possible health benefit, sage may improve mood and cognitive functions.¹⁰

Thyme

Fragrant and fresh tasting. Thyme complements other herbs, such as rosemary and oregano. Use with chicken, meat, seafood and hearty vegetable stews/soups. It is a key herb used to make Cajun gumbo.

Prices of herbs from various stores range from less than \$1.00 to upwards of \$3.00 per bundle, and can usually be used for 2-3 servings of recipes. The average price for fresh herbs is \$1.50 (about \$0.75-\$0.50 per recipe). This makes them an affordable part of any recipe. The prices of all herbs listed here were collected at local grocery stores (high-end stores, megastores, and supermarkets) twice during spring/summer and fall/winter near the University campus area. All price data was compiled and averaged.

SPICES

Spices come in incredibly diverse varieties, flavors, and colors—almost as distinct as the array of tasteful dishes they can be used to flavor. Not only do these powerful spices pack a punch on the taste buds, but also possibly for your health and wellness. Just like herbs, many spices contain antioxidants.^{1,2,8} Additionally, the American Institute for Cancer Research referenced turmeric, black pepper, and garlic for their possible cancer-fighting benefits.⁷



Figure 1. Common leafy herbs (left to right: Italian parsley, rosemary, basil, thyme, oregano)

What is Italian Seasoning?

Over the years, Italian seasoning has gained popularity in grocery stores and recipes, alike. This blend of spices usually includes dried basil, parsley, rosemary, oregano, thyme, and marjoram. Italian seasoning is a great way to flavor vegetables and meats, while providing a healthy alternative to salt.



Figure 2. Fresh and Dried Basil (Left) and Dill (Right)



The following is a list of commonly used spices.

Black pepper

Pungent, strong and aromatic. Black pepper, or peppercorn, is the dried berry of the *Piper nigrum* vine.⁵ Use with any dish as a flavoring agent.

Bay leaves (dried)

Savory and earthy. Use with meats, vegetables, soups, and stews.

Cayenne pepper

Spicy, aromatic, and colorful. Adds spicy, hot taste and bright red color. Try blending cayenne pepper and paprika to make a milder taste.

Chili powder/Chili peppers

Savory, strong, and pungent. A common ingredient in chili and in Mexican cuisines. Use with chicken and meats.

Cinnamon

Sweet and aromatic. Cinnamon comes from the bark of the *Cinnamomum* spp. plant and cinnamon is available as dried tubular sticks or ground powder.⁵ Use with baked goods and fruits. Cinnamon complements the flavor of apple in apple pie. A stick of cinnamon can be placed in coffee, tea, or warm apple cider.

Cumin

Strong and aromatic. Ground cumin comes from the seeds of the *Cuminum cyminum* plant.⁵ It is an important ingredient for traditional Mexican and Indian dish flavoring. Use with meats, stews, and vegetables.

Paprika

Savory, earthy, and colorful. High in vitamin A. Use with meats and other dishes for a red coloring. Paprika can be used to flavor rice or season vegetables and salads. It can also liven up soups with a bright, red color.

Turmeric

Aromatic, warm, and bitter taste. Curcumin, chemical compound with antioxidant properties in turmeric.^{3,4} Research is ongoing.⁸ Turmeric is a staple ingredient in curry powder. Use in curried dishes. Add turmeric to egg salad to give an extra yellow color. Turmeric complements lentil recipes. Mix rice with raisins, cashews and season with turmeric and cumin.

Jars and containers of spices are sold in most grocery stores, and usually range from \$1.00-\$7.00. On average, spices cost about \$0.14 per serving (one teaspoon) making spices another affordable way to flavor foods. The

prices of a jar or bottle of spices listed here were collected at local grocery stores (high end stores, megastores, and supermarkets) twice during spring/summer and fall/winter near the University campus area. All price data was compiled and averaged.

VEGETABLES USED AS SPICES OR HERBS

Some vegetables are strong and pungent, making them great ingredients to flavor foods. In addition to herbs and spices, vegetables offer incredibly healthy flavor options for cooking. Garlic and onion are two popular ingredients used in almost every culture and style of cooking. Using vegetables for taste reaps the same benefits of herbs and spices (less salt and fats), but with the added benefits of the nutrients in vegetables. The USDA recommends eating 2-3 cups of vegetables a day for a healthy and balanced diet.¹¹

The following is a list of common vegetables used as spices or herbs.

Celery

Strong, aromatic, and fresh. Celery is a great ingredient for flavoring soups. Instead of adding a lot of salt to stews or soups, add celery to enhance the flavor.

Garlic

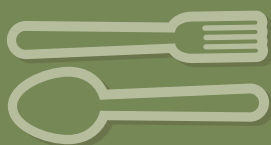
Strong and aromatic. The garlic commonly sold in grocery stores is the bulb of the *Allium sativum* plant. Use with a wide variety of dishes. Since garlic has such a versatile flavor, it is a great ingredient to use for almost any dish. The strong, appetizing flavor of garlic also means less salt, oils, butter, and fat are needed to make meals taste great.

Onion

Strong, sweet, and savory. Use with almost any dish. Similar to garlic, onions commonly sold in grocery stores are the bulbs of the *Allium cepa* plant. There are several common varieties of onions sold in stores including yellow, sweet, and red onion. Yellow onion has a very versatile flavor, and can be used for any style of cooking. Onions are also very affordable, and are usually sold for under \$1. Use caution when cutting onions, as the vegetable releases strong and pungent fumes, which may cause watery eyes and blurred vision.

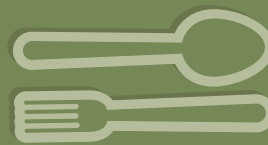
Complete references available at

<https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1686-2015.pdf>



RECIPES

HOW TO USE SPICES & HERBS



When cooking with fresh or dry herbs, use the following general rule for conversion: 1 part dried herb is equal to 3 parts fresh herbs. For example, if a recipe calls for 1 tablespoon of fresh basil, use only 1 teaspoon of dried, since 3 teaspoons is equal 1 tablespoon. The reason for this conversion is that dried herbs are generally more concentrated than fresh herbs, thus, you'll need less -- typically three times the amount of fresh herbs as dry. Adjust the amount of herbs, as you like.

When doubling a recipe, do not double spices and herbs. Increase amounts by 1½ times, and add more or less, as you like.

Below are recipes and ideas for how to bring more herbs and spices into your daily diet. Try herbs and spices in salads, soups, and sauces or on chicken, meats, and seafood. Use them in your favorite home-cooked meals.

USE COMBINATIONS OF THESE HERB AND SPICE FLAVOR PROFILES TO LIVEN UP YOUR NEXT MEAL!

WITH CHICKEN

Mediterranean

Basil
Black pepper
Garlic
Oregano
Parsley
Rosemary
Thyme

Use with: olive, tomato, eggplant, squash, or peppers

Southwestern

Black pepper
Cayenne pepper
Chili powder
Cilantro
Cumin
Garlic
Paprika

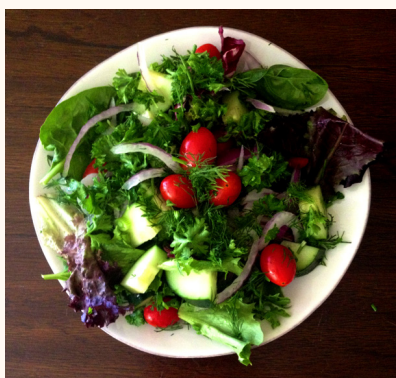
Use with: red pepper flakes, onion, corn, tomato, chilies, avocado, or peppers

Spiced citrus

Black pepper
Cilantro
Garlic
Ginger
Oregano
Parsley
Rosemary
Thyme

Use with: lemon, lemon zest, squash, carrot, asparagus, mushroom, and artichoke

Fresh Mediterranean Chopped Herbs and Greens Salad



Prep time: 10 minutes

Makes 3-4 servings

Ingredients:

4 cups fresh arugula greens, chopped
½ cup fresh parsley leaves, chopped
½ cup fresh basil leaves, chopped
½ cup fresh dill leaves, chopped
¼ cup fresh red onion, chopped
2 medium tomatoes, chopped

For the Dressing:

3 tablespoons extra virgin olive oil
2 tablespoons red wine vinegar
1 tablespoon Italian seasoning (or any combination of dried basil, parsley, rosemary, oregano, thyme, and marjoram)
1 teaspoon salt
1 teaspoon black pepper

Directions:

1. Chop all ingredients (arugula greens, parsley, basil, dill, red onion, tomatoes) and add to a large mixing bowl. Mix greens and vegetables together.
2. In a smaller bowl, combine extra virgin olive oil, red wine vinegar, Italian seasoning, salt and black pepper. Mix well.
3. Pour dressing over greens and vegetables and mix well to coat.
4. Serve immediately and enjoy.

Optional:

Add grilled/baked chicken, olives, Parmesan cheese and different vegetables for a more filling dish.

Per serving:

121 calories, Carbohydrates: 5g, Fat: 11g, Protein: 2g

Total cost:

\$10.90, about \$2.73 per serving

With Red Meat

Barbeque

Black pepper
Cayenne pepper
Chili powder
Cumin
Garlic
Mustard powder
Onion powder
Paprika
Use with: Onion, corn, zucchini, squash, eggplant, mushroom, tomato, sweet potato, or peppers

Savory

Basil
Black pepper
Garlic
Oregano
Parsley
Rosemary
Sage
Thyme
Use with: Onion, mushroom, broccoli, tomato, carrot, peas, green beans, or sweet potato

Asian-inspired

Black pepper
Cilantro
Garlic
Ginger
Onion powder
Use with: Sesame (seed, oil), soy sauce, vinegar, lemon, red pepper flakes, scallion, onion, mushroom, snap peas, carrot, peppers, or cabbage

Hearty Beef and Vegetable Stew

*(Adapted from What's Cooking?
USDA Mixing Bowl™)*

Prep time: 1 hour

Makes 6-8 servings

Ingredients:

1/4 pound beef round roast, thawed and chopped
1 tablespoon vegetable oil
4 cups water
2 cups winter squash, chopped (or 2 cups cabbage, finely chopped)

1/2 cup onions, chopped
1/2 cup carrots, peeled and chopped
1/2 cup parsnips, peeled and chopped (optional)
1 celery stalk, chopped
3 cloves garlic, finely chopped (or 1 teaspoon garlic powder)
1 teaspoon dried oregano
3 bay leaves, dried and whole
1 tablespoon parsley, chopped (optional)
1/4 cup macaroni, dry
1 large tomato, chopped (or 1 can, about 15 ounces, low-sodium diced tomatoes)
1/2 cup green pepper, finely chopped
Salt, to taste
Black pepper, to taste

Directions:

1. In a large pot, brown beef in oil over medium to high heat for 8 to 10 minutes. Drain fat.
2. Add water, squash, onion, carrot, parsnips, celery, garlic, oregano, bay leaves and parsley. Mix well.
3. Bring pot to a boil. Lower heat and cook for 20 minutes.
4. Add macaroni, tomatoes, green pepper, salt and pepper.
5. Keep cooking over low heat for 20 minutes, until vegetables are soft and meat is tender. Serve hot.

Per serving:

115 calories; Carbohydrate: 15g, Fat: 4g, Protein: 6g

Total cost:

\$10.90, about \$2.73 per serving

With Fish

Asian-inspired

Black pepper
Cilantro
Garlic
Ginger
Onion powder

Use with: Sesame (seed, oil), soy sauce, teriyaki, vinegar, lemon, red pepper flakes, scallion, onion, mushroom, snap peas, carrot, peppers, and cabbage

Use with: Onion, corn, zucchini, squash, eggplant, mushroom, tomato, sweet potato, or peppers

Cajun

Basil
Black pepper
Cayenne pepper
Chili powder
Cumin
Fennel
Garlic
Mustard powder
Onion powder
Oregano
Paprika
Sage
Thyme

Use with: Lemon, red pepper flakes, tomato, peppers, okra, mushroom, onion, zucchini, squash, green beans, and corn

Savory Herbs

Basil
Black pepper
Garlic
Marjoram
Oregano
Parsley
Rosemary
Sage
Thyme

Use with: Onion, lemon, mushroom, broccoli, carrot, peas, green beans, sweet potato, tomato, and asparagus

Steamed Salmon and Veggies¹²

Prep time: 40-45 minutes

Makes 4 servings

Ingredients:

1 lb. salmon fillet
4 fresh garlic, minced
1 fresh zucchini, sliced
1 onion, chopped
1/8 head cabbage, chopped
2 carrots, sliced

1/2 lb. mushroom, sliced
1 colored bell pepper, cut into short, thin strips
1/2 lemon, cut into 4, make lemon wedges
Dill, thyme, or any kind of herb as desired
4 Tbsp. extra virgin olive oil
1/8 Tbsp. salt and 1/8 Tbsp. pepper

Directions:

1. Heat a pan and pour 2 Tbsp. olive oil over low heat.
2. Sauté garlic over low heat for about 1 minute (if garlic is turning brown, it is too long).
3. Spread cabbage, carrots, bell peppers, and mushrooms on the pan.

4. Salt and pepper the salmon, and place on top of these vegetables.
5. Add onion and zucchini on top of the salmon.
6. Put on a lid* and cook with low heat until fish is cooked (about 30 minutes).
7. Dress with dill, thyme or any herb, as you like.
8. Pour 2 Tbsp. olive oil.
9. Serve with lemon.

*if you do not have a lid, use aluminum foil to cover the vegetables and salmon.

Per serving: 360 calories, carbohydrate: 15g, Protein: 26g, Fat: 22g

Total cost: \$12-18, about \$4.50 per serving