



Growing Herbs for the Health of It!

Jennifer Parlin, Parker Filer, Daniel McDonald, Jacqui Stork, and Jada Parker

Do your salivary glands kick into action when you think about a juicy hamburger or a salty snack? Do sugary treats draw you like metal to a magnet? Well then, you're human! Our desire for fatty, salty, and sugary foods is the result of humans evolving over many millennia. Our bodies need fat, salt, and sugar to function—only we may not need as much as we are consuming. The latest Dietary Guidelines for Americans (U.S. Department of Health and Human Services, 2015) recommend cutting down on fat, added sugars, and sodium (see box 1 below). Cutting back doesn't mean we need to take all the fun and flavor out of enjoying our favorite foods. The purpose of this publication is to describe how herbs can be used as a substitute for less healthy taste enhancers such as salt, sugar, and fat.

Luckily, there are ways to eat less salt, sugar, and fat without sacrificing flavor. Herbs are fragrant and flavorful plant leaves, seeds, and even stem parts that are low in calories and a good substitute for the foods that may contribute to weight gain and other potentially harmful health effects (Duyff, 2006). Herbs contain essential oils that add flavor and nutrition to our food. Variation in fragrance and flavor is due to the herbs containing different essential oils (Nickoll and O'Hara, 2010). To activate and release these oils, herbs can be gently crushed, cooked, or cut and added to a variety of



Oregano

Some key recommendations from the 2015-2020 Dietary Guidelines*

- Consume less than 10 percent of calories per day from added sugars.
- Consume less than 10 percent of calories per day from saturated fats.
- Consume less than 2,300 milligrams (mg) per day of sodium.

*The 2020-2025 Dietary Guidelines are in the process of being updated.

dishes. Using herbs to reduce salt, sugar, and fat is easy! You can start by gradually incorporating them into your diet. By gradually cutting down and replacing salt, sugar, and fat with herbs, you can train your taste buds to prefer these foods over less healthy alternatives (Nutrition Action, 2015).

A great place to start is by making homemade salad dressings that feature fresh or dried herbs for flavor. Store-bought salad dressings are often high in calories and sodium. By making your own, you can choose to include some healthier alternatives. When adding herbs to salad dressings, it is best to start with a small amount and taste as you go – it's much easier to add herbs to your dressing than to remove them! For more information, check out The Garden Kitchen's Balsamic Vinaigrette recipe at the end of this article.

Herbs can also be used in cooked foods to add flavor. Hardier herbs, like thyme, rosemary, and oregano, hold up well to heat and can be added early in the cooking process. In fact, cooking helps to enhance the flavor of herbs and allows



Spearmint in glazed pot

those flavors to meld with other ingredients. More delicate herbs, like basil and mint, should be added towards the end of cooking or as a garnish. Cooking causes the leaves of more delicate herbs to become damaged and wilted, taking away from their flavor and even making them bitter (Nutrition Action, 2015). Dried herbs can be used at any point in the cooking process, but for maximum flavor, add them at the beginning or middle of a recipe. Remember to proceed with caution: dried herbs are more concentrated in flavor than fresh herbs (Farr, Nakagomi, & Hongu, 2015). So, reduce the quantity by about two-thirds when adding dried herbs in place of fresh herbs. Also try pairing herbs with roasted or steamed vegetables to enhance the flavor.

Water and unsweetened homemade iced tea infused with fresh herbs is a way to cut down on sugary beverages. Try adding chopped mint leaves to a quart of water or tea and letting it sit overnight in the refrigerator. This makes a refreshing, thirst quenching drink for hot summer days. Other combinations are tasty as well such as cilantro and lime (for a half gallon of water add one cup chopped cilantro and a quarter wedge of lime). You can also use edible flowers such as hibiscus, rose, lavender, and citrus blossoms to make a cold tea, but make sure whatever you use is 100% pesticide free!

Health benefits

In addition to helping reduce dietary salt, sugar, and fat, herbs can provide some of their own health benefits. Most herbs contain antioxidants. Antioxidants are compounds that prevent oxidation in the body and may have protective effects against inflammation and some chronic illnesses (Antioxidants: Beyond the Hype, 2016). Studies have suggested that eating foods high in antioxidants, like herbs, help support the immune system by reducing inflammation

and preventing “over-response,” which can damage cells (Antioxidants: Beyond the Hype, 2016). Phytonutrients, also called phytochemicals, are another class of plant compounds thought to have protective effects in the body. Phytonutrients work in various ways to protect plants from damage. You might think of them as “fighting” to defend against things that might harm the plant like germs and bugs. Those same nutrients may provide benefits to your body as well (Heneman and Zidenburg-Cher, 2008).

The biology of both phytonutrients and antioxidants can provide support to human health. They play a specific role in human health such as anti-inflammatory, anti-allergic, and antioxidant properties, just to name a few (Gupta and Prakash, 2014). Antioxidants suppress harmful effects of cancer-causing pollutants present in foods and beverages. They can also neutralize harmful effects of hazardous emissions and protect from harmful environmental impacts (Yashin A., Yashin Y., Xia X., and Nemzer B., 2017). Researchers are generally in agreement that eating foods high in these compounds, like herbs, is beneficial for health (Antioxidants: Beyond the Hype, 2016).

Deciding what to plant in your summer garden and how to plant it

The beauty of growing your own personal garden is that you can tailor your planting to your own tastes and cooking preferences! Herbs are great plants for new or busy gardeners since they generally require less space, can be grown indoors and don't require as much close care as annual fruits or vegetables. An easy way to grow herbs at home is to try container gardening.

Container gardening is a good choice because of its versatility and ease of managing a small pot or container, versus a large raised bed or garden plot. Another advantage



Variety of containers for garden

of container gardening is that utilizing separate containers allows you to grow various plants with different growing requirements in the same space. Additionally, managing weeds and pests are easier when plants are separated by containers (Young, 2016).

Herbs can be started from seeds or from cuttings. Annual plants like basil should be planted fresh each year from seed while hardier, perennial herbs like rosemary and mint could be started from a cutting that a friend or neighbor shares with you. Mint is notoriously vigorous and can spread to take over a garden in no time, so you may want to take precautions and confine it to a pot of its own.

Most herbs enjoy a well-draining, loam to sandy loam soil with some organic matter. Loam soil is one that is mostly composed of sand and silt particles with a smaller amount of clay, and confers an ideal mixture of aeration, drainage, water holding capacity and nutrient exchange capabilities; compared to mainly sandy or mainly clay soils. In a desert climate mulch is always a good idea to help cool the soil surface, retain moisture and suppress weeds. With containers you can work with a smaller volume of soil or growing media and exert more control over the soil mix. You can fertilize your herbs with any number of natural or conventional fertilizers, according to the label's instructions and recommended application rates for herbs. There are many products specially formulated for herbs.

You can locate your herb garden near the house, a kitchen entry, in pots on a patio or even on the kitchen counter. It's important to consider how much light your chosen location receives; for herbs, 4 to 6 hours is recommended. You can grow herbs in a south-facing window, but should take care to monitor the temperature around the plant from the "greenhouse effect" that a window can create. As long as you consider the resources available to you and the needs of the plants you plan to grow, your herb garden will thrive! You can grow various types of herbs and spices that will surely add bold flavors to your summer dishes.

Basil (*Ocimum basilicum*)

Basil has been used in culinary traditions from India to ancient Greece and Egypt. It is an annual herb, meaning that it will need to be planted from seed each year. There are over 25 commercial varieties of basil, many of which grow well in southern Arizona in the summertime, due to our Mediterranean-like climate. In higher elevations and colder parts of Arizona, be mindful of lower temperatures throughout the year as basil and other tender, herbaceous plants are susceptible to frost damage which can occur when temperatures fall below 36 degrees. Genovese, commonly known as Italian or sweet basil, has large broad leaves with a slightly sweet taste. Thai basil has more of an anise flavor (think licorice) and can tolerate higher cooking temperatures than sweet basil. It has small, pointed leaves with a purple



Thai Basil



Sweet Basil

tinted stem and purple clusters of flowers. Lemon basil has a wonderful citrus aroma and a delicate lemon flavor. Though less hardy than sweet and Thai basil, it is worth the effort in a summer garden for its bright flavor. During our Arizona summer you might consider planting the following varieties as well: holy basil, cinnamon basil, red or purple basil, and bush basil. See Schalau, 2009 for a useful guide on growing basil: <https://cals.arizona.edu/yavapai/anr/hort/byg/archive/growingbasil.html>

Basil is particularly successful during our summers because it grows well in full sun: there is no need to shade these plants. Grow basil from seed in fertile, well-draining soil. Water until the soil is damp, but not saturated, usually every day in midsummer and less often in the spring and fall. Basil can be vulnerable to a variety of diseases such as Fusarium wilt and bacterial leaf spot, in overly moist soil and humid environments, so avoid over-watering and be sure to keep the plant dry by watering at the soil and root zone. It is easy to harvest basil by "pinching" individual leaves between

your finger and thumb or by cutting sections of the stem with multiple leaves attached, as needed. Ideally you can harvest leaves from your basil plant any time after it reaches six to eight inches in height. New leaves will appear where you've cut the stem and can be harvested again. If left too long without "pruning" or harvesting, the plant will produce flowers- signaling the end of its annual life cycle- and causing the leaves to taste bitter. If you notice a flower forming, simply pinch and remove it to keep the plant producing more leaves.

Mint (*Mentha* spp.)

Consider growing a few different kinds of mint to capitalize on the culinary uses of this hardy plant. Like basil, mint is a member of the Lamiaceae plant family and has long been prized by many cultures for its aromatic leaves and multiple culinary and medicinal uses. There are more than 35 varieties of mint but the most widely grown types of mint are spearmint (*Mentha spicata*), which has saw-toothed leaves and produces purple flowers that attract pollinators (Biggs, McVicar, and Flowerdew), and peppermint. Peppermint is technically a hybrid between spearmint (*M. spicata*) and water mint (*M. aquatica*) and bears the scientific name (*Mentha x 'piperita'*).

Chocolate mint is a variety of peppermint (Brenzell, 2012) that has smaller, dark green leaves. It makes an excellent addition to fresh fruit or water on hot summer days. In addition, apple mint, pineapple mint, and orange mint all grow well in Southern Arizona. Harvesting mint is easy and can be done by hand, pinching leaf by leaf as needed, or by taking stem cuttings with scissors or shears. Mint can spread quickly and take over other planted areas, so be sure to keep it in a container or in an area that allows it to grow far and wide. This herb does best in medium rich soil, in partial shade or full sun. Being a perennial plant, mint will disappear in the winter- reserving its energy in its underground portions- but is likely to come back seasonally for three years. Mint can be started from cutting of its stolons, or "runners," if you wish

to start additional plants (Brenzell, 2012). "Runners" refers to the roots of the mint plant which can be invasive to other surrounding plants. Tips for managing these runners is to routinely trim them or completely separate the mint plant from the rest of the garden utilizing container gardening.

Thyme (*Thymus vulgaris*)

Thyme can be grown for ornamental as well as for culinary purposes. In the garden, thyme makes a good ground cover and serves as a food source for the larval stage of moths and butterflies. Common thyme, also known as garden or English thyme, produces small oval green leaves and small white flowers. This type of thyme lends a beautiful earthy flavor to soups, sauces, and roasted dishes. When using this herb, be cautious in its application: a little goes a long way. Lemon thyme grows taller than common thyme and can be green and yellow or silver (Brenzell, 2012). Lemon thyme adds a nice citrus note to any dish that would benefit from lemon juice or zest. Thyme grows well in the summer, in light, well-drained soil and in partial shade in the hottest months. Instead of trying to grow thyme from seed, try starting from cuttings (Brenzell, 2012). Water until the soil is damp, usually every day in midsummer, less often in the spring and fall.

Other Herbs of Interest

Other herbs that grow well in our summer gardens include summer savory, which can be grown in full sun in light, well-drained soil (Brenzell, 2012). This herb produces narrow, tougher leaves that should be chopped fine before adding to dishes. It has a piney, spicy citrus flavor. Also consider the many different varieties of marjoram that range from slightly spicy to sweet (Brenzell, 2012). The variety most often found in this area is sweet or common marjoram (Bateman, Berton,



Three varieties of mint



Thyme



Winter Savory

and Doig, 2008). A softer leaved herb, marjoram is often used to spice Italian and grilled dishes. Grow it in partial shade during the heat of the summer in light, well-drained soil. Oregano also has many varieties that grow well in the summer such as Mexican or Greek oregano, which require well-drained soil in full sun. Rosemary is another fragrant herb that does well in our alkaline desert soil and dry heat.

Storage and preservation

Fresh herbs should be treated like cut flowers. To store them, submerge the end of stems in water and wrap the leaves in plastic wrap. Or you can wrap fresh herbs in a damp cloth and plastic wrap to preserve them. Storing fresh herbs this way reduces the amount of water lost to evaporation while stored in the refrigerator, helping to extend their shelf life.

Dried herbs begin to lose flavor almost immediately, so store them in a cool, dark, and dry place to prevent degradation. It is a good idea to label any dried herbs with the date purchased. It is best to keep dried herbs stored for no more than a year (Duyff, 2006). Not sure if your dried herbs are still good? Pour a small amount into your hand, crush lightly, and smell – if it smells musty or stale, don't use them.

For more information about growing and using herbs, visit www.thegardenkitchen.org. Another good source for information on growing herbs is The University of Illinois: <https://web.extension.illinois.edu/herbs/directory.cfm>

Involving children in growing of herbs

There are numerous studies showing that when children are involved in growing fruits and vegetables in a school or home garden, they are more likely to try the food grown and, furthermore, the experience has a positive influence on their future food consumption (Savoie-Roskos, Wengreen, & Durward, 2017). There aren't as many studies specific to consumption of herbs, however there is some research to

support the finding that young children are more likely to taste herbs and select foods containing herbs after participating in school gardening programs where they helped grow and harvest the herbs (Kos, M., & Jerman, J., 2013). Additionally, we know that when children are involved in the family meal, they are more likely to consume vegetables (Hendrie, Lease, Bowen, Baird, & Cox, 2017).

So, if you have young children in your home and you want to encourage them to eat healthier by reducing fat, sugar, and salt in their diets, you might consider having them help grow the herbs—maybe even have some of their own plants that they are responsible for—and help in meal preparation by selecting what herbs to use, chopping or grinding herbs as necessary, and mixing or sprinkling the herbs on the prepared dish.

Here are a couple tasty recipes from The Garden Kitchen! (<http://thegardenkitchen.org/>)

Pesto Panzanella Salad

Ingredients:

- 1) 2 cups cubed bread, cut into ¼-inch pieces
- 2) 4 tablespoons extra virgin olive oil, divided in recipe
- 3) 1 tablespoons garlic, chopped
- 4) ¼ teaspoon fresh cracked pepper
- 5) 2 cups cherry tomatoes, halved
- 6) 1 (14-ounce) can low-sodium cannellini beans, drained and rinsed
- 7) 1 medium cucumber, peeled, halved lengthwise, seeded, and cut into 1/2 -inch pieces
- 8) 1 medium shallot, finely chopped
- 9) ½ cup pesto (see Sunflower Parmesan Pesto recipe below)
- 10) 1 tablespoon red wine vinegar

Directions:

- 1) Wash hands well with soap and warm water. Wash produce thoroughly.
- 2) Place 2 oven racks 3-4 inches apart and preheat oven to 375 °F.
- 3) In a medium bowl, toss bread cubes with 2 tablespoon of olive oil, garlic and ¼ teaspoon of pepper. Spread bread cubes on pan and bake until golden brown, 12 to 15 minutes, shaking pan halfway through to prevent bread from sticking. Remove from oven and cool completely. Set aside.
- 4) Meanwhile, mix tomatoes, beans, cucumber, and shallot in large bowl.
- 5) Whisk pesto, vinegar, and remaining 1 tablespoon of oil together in small bowl, and season with salt and pepper to taste.

- 6) Drizzle pesto dressing over vegetables, toss well, and refrigerate for at least 2 hours or overnight.
- 7) Before serving, add bread cubes to vegetables and toss well.
- 8) Serve immediately.

Sunflower Parmesan Pesto

Ingredients:

- 1) ¼ cup grated parmesan or Romano cheese 3 tablespoons sunflower seeds (no shells) 2 tablespoons
- 2) olive oil
- 3) 2 tablespoons water
- 4) juice of half a lemon (about 2 tablespoons)
- 5) 1 clove fresh garlic or ½ teaspoon garlic powder pinch of salt
- 6) 2 cups fresh basil leaves

Directions:

- 1) Wash hands with soap and warm water. Wash produce well.
- 2) Combine all ingredients in blender except basil. Process until smooth.
- 3) Stop blender and remove lid. Using spatula, push half the greens into the mixture.
- 4) Pulse until chunky.
- 5) Stop the blender again and push the remainder of greens into the mixture
- 6) Process until smooth.
- 7) Served immediately. Can be stored in the refrigerator for up to three days.

Balsamic Vinaigrette Recipe Directions

Ingredients:

- 1) ½ cup balsamic vinegar
- 2) 1 tablespoon dried parsley
- 3) 2 teaspoons powdered garlic
- 4) ½ teaspoon dried oregano
- 5) ½ teaspoon dried basil
- 6) ¼ teaspoon dried thyme
- 7) ¼ teaspoon pepper
- 8) Pinch of salt
- 9) 1 tablespoon of honey
- 10) 2/3 cup olive oil

Directions:

- 1) Wash hands with warm water and soap.
- 2) In a clean 16-32 ounce jar with lid (like an old spaghetti

sauce jar), combine vinegar, parsley, garlic, oregano, basil, thyme, pepper, salt and honey. Place lid on jar and shake vigorously until ingredients are well combined.

- 3) Add olive oil to jar, shake vigorously until ingredients are well combined.
- 4) Cover and refrigerate for at least one hour to allow flavors to develop.
- 5) Serve and refrigerate unused portion for up to 3 weeks. (Note: The olive oil will clump up when refrigerated so take the jar of dressing out 30 minutes before using or run the jar under hot water for a few minutes before shaking well and serving.)

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THE UNIVERSITY OF ARIZONA

Cooperative Extension

AUTHOR

JENNIFER PARLIN

Community Outreach Manager I, The Garden Kitchen

PARKER FILER

Assistant Agent, Horticulture

DAN McDONALD

Director, Take Charge America Institute

JACQUI STORK

JADA PARKER

Undergraduate - College of Ag & Life Sciences - Nutritional Sciences

CONTACT

DAN McDONALD

mcdonald@cals.arizona.edu

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