



Go Green: Growing and Enjoying Leafy Greens Leader's Guide

Leaders: Please read through this lesson before teaching it. Teaching directions for the activities are italicized. You can choose the activities and demonstrations that are appropriate for your group.

Introduction

Ah vegetables! We all know that it is beneficial to eat more of them. Sometimes it is easy to get into a rut, eating only our favorite veggies like iceberg lettuce, tomatoes, carrots, and green beans. Adding some leafy greens like kale, chard, collards, mustard greens and others can expand the variety in our meals, and leafy greens contribute a high level of health-promoting nutritional value. This lesson will help us recognize the variety of leafy greens, share container gardening tips for growing our own greens to save money, and show us ways to incorporate greens into healthy recipes.

Nutritional Value of Leafy Greens

Although the nutritional profiles vary from green to green, leafy greens as a group tend to be excellent sources of vitamins A, C, and K, and many greens are significant sources of folate and calcium. Greens are also a great source of fiber and protein.

*[Special Note: Persons who are taking the drug warfarin (Coumadin) to avoid blood clots do **not** need to avoid foods rich in vitamin K, but should stay consistent with the amount of foods they eat each day that contain vitamin K. See the National Institutes of Health link in the resources list below for guidance.]*

The newest nutrition information about leafy greens cites their importance as a significant source of the signaling molecule Nitric Oxide (NO), a gas formed in the body that signals arteries to relax and expand, tells immune cells to kill cancer cells, and helps the brain cells to communicate. Nitric Oxide especially helps to prevent and reverse cardiovascular disease.

Ways to boost Nitric Oxide production in the body:

- Chew your greens instead of juicing – friendly bacteria on the tongue help convert nitrates to nitrites, then nitrites are converted to Nitric Oxide in the stomach. Juice and smoothies still provide other significant nutrients.

- Eat most of your greens in the raw state when possible. However, cooked greens also contribute greatly to your health.
- Pair greens with foods that are rich in polyphenols, like dark berries and red juices, even red wine and dark chocolate!
- Eat greens with a source of vitamin C like citrus juices and fruits.
- Drink plenty of water – good hydration increases Nitric Oxide production.
- Use deep breathing techniques since oxygen boosts Nitric Oxide production.
- Get regular exercise to produce more Nitric Oxide.

[To share more information about Nitric Oxide, refer to the attached brochure for leaders and the fact sheet in the participant guide.]

Types of Greens – Matching Activity

Leaders: print out a set of the photo cards and description cards. Cut them apart. Distribute the cards among the group members. Ask each person with a description card to read the description and see if the group can match the photos to the type of green leafy vegetable. Encourage discussion about who has tried a particular green, and how they prepared it.

Answer key: A-5, B-4, C-6, D-2, E-7, F-3, G-1, H-8

Optional addition to this activity: *Pass around samples of fresh greens from the grocery store, and perhaps provide cooked or raw taste samples to group members.*

How to Grow Greens in Containers

Review the tips outlined in the participant guide. If you like to garden you could bring props or even plants to show the group.

Preparing and Cooking the Greens

Washing: Greens grow close to the ground, and some commercially produced greens are grown in sandy soil, so they will need multiple rinsing. Fill a clean sink or large bowl with water and swirl the greens through. Drain and repeat. A salad spinner is a handy tool to remove the excess water for storage. Store greens in plastic bags in the refrigerator if you will not be cooking them immediately.

Cooking: Most greens can be torn into bite-size pieces and cooked in a shallow frying pan with a small amount of water. Watch them closely and taste frequently so they are not overcooked.

Recipes for Greens

Smoothies: *Using a blender, you can demonstrate making a green smoothie following the formula in the participant guide.*

Massaged Kale: *You can demonstrate how to massage kale or just read through these instructions for the group:*

It may sound like a funny idea, but massaging your kale before making a raw kale salad will break down the cell structure so that the kale is has a slightly softer texture and is easier to chew. Here's how: wash and remove the stems from a bunch of curly kale and tear or chop the leaves into bite-sized pieces. Put the kale into a bowl and add ¼ teaspoon fine salt, 1 tablespoon of fresh lemon juice and 2 teaspoons olive oil. Massage the kale using the same motion you would use to give a neck massage to someone. Massage for about 3 to 5 minutes until the leaves are sweet and tender. Now you can add any other salad ingredients, like dried or fresh fruit, chopped nuts, croutons, toasted pumpkin seeds, ground pepper, or other seasonings.

Pesto: *Using a food processor, you can make pesto following the Basic Pesto formula in the participant guide.*

Kale Chips: *Review the kale chips recipe in the participant guide. There are many different kale chip recipes online. You may want to try to make some of them before the class and bring samples for the participants.*

Closing

I hope you will explore more ways to include more green leafy vegetables in your daily meals. There is a list of recipe books in the participant guide to help you find additional recipes for these health-promoting vegetables. Many of these may be available at your local library. Thank you for your interest and for sharing your ideas today.

*****Please take a few moments to complete the evaluations. I will collect them and turn them in to the local Extension office.*****

Resources used to develop this lesson:

50 Things to Make with Pesto <http://www.foodnetwork.com/recipes-and-cooking/50-things-to-make-with-pesto/page-2.html>

Albi, J. and C. Walthers (1996) *Greens Glorious Greens!*, St. Martin's Griffin.

Atlas, N. (2012) *Wild about Greens*, Sterling Publishing.

Belsinger, S. and C. Dille (1995) *The Greens Book*, Interweave Press.

Borelli, L. (2013) Nutritional Value of Lettuce: Iceberg versus Romaine
<http://www.medicaldaily.com/nutritional-value-lettuce-iceberg-versus-romaine-246532>

Can Collard Greens be grown in Containers? http://www.ehow.com/info_10061177_can-collard-greens-grown-containers.html

Chai, J. (ed.) (2013) *Small-Space Edible Gardening*, Sunset Publishing Corporation

George Mateljan Foundation, What's new and beneficial about mustard greens,
<http://www.whfoods.com/genpage.php?tname=foodspice&dbid=93>

George Mateljan Foundation, What's new and beneficial about spinach,
<http://www.whfoods.com/genpage.php?tname=foodspice&dbid=43>

Herbs and Vegetables in Oil, SP 50-701, Revised September 2011. OSU Extension Service Family and Community Health Program.

National Institutes of Health Clinical Center Drug-Nutrient Interaction Task Force (2012) Important Information to Know When You Are Taking: Warfarin (Coumadin) and Vitamin K,
http://www.cc.nih.gov/cc/patient_education/drug_nutrient/coumadin1.pdf

OSU Extension Service Food Hero www.foodhero.org

Polizzi, S. (2012) Greens = NO More Disease, Wellness Ink newsletter, Family and Community Health, Coos/Curry County OSU Extension Service

Thomas, C. (2006) *Melissa's Great Book of Produce*, John Wiley and Sons.

Thomson, J. (2012) How to Massage Kale: Why A Rubdown Helps This Leafy Green
http://www.huffingtonpost.com/2012/06/18/how-to-massage-kale_n_1601200.html

This lesson was developed in December 2013 by Debra Minar Driscoll, Family and Community Health, OSU Extension Service, Polk and Yamhill Counties. Special thanks to Stephanie Polizzi, Family and Community Health, OSU Extension Service, Coos and Curry Counties, for sharing her nitric oxide publications.





A



B



C



D



E



F



G



H

1. Romaine

Romaine is a healthier alternative to iceberg lettuce for your salads. How do they compare nutritionally? A cup of Romaine lettuce provides 11 times more vitamin A than a cup of iceberg lettuce, helping your vision and immune system function well. Romaine provides nearly three times as much vitamin K which can help blood clot appropriately and regulate insulin. Lutein and zeaxanthin, carotenoids that protect the retina of your eyes, are 5-1/2 times more present in Romaine, reducing the risk of age-related macular degeneration.

2. Collards

Collards outrank broccoli, spinach, and mustard greens in nutritional value. Outside the South, few people have made these greens part of their diet, but more and more grocery stores are carrying them in Oregon. Cook them quickly in a small amount of water for best flavor. They can also be sautéed or added to soups and bean stews. They taste great when prepared with olive oil and onions or garlic. Add ginger, curry, hot sauce or hot peppers to enhance their flavor.

3. Mustard

Mustard greens originated in the Himalayan region of India and have been grown and consumed for more than 5000 years. They have a cholesterol-lowering ability similar to collards and kale. Raw mustard greens have an overwhelmingly spicy flavor. But cook them and the flavor mellows. They can also be combined with mellow greens like spinach and kale, or combine them with beans and sweet vegetables like carrots, corn, sweet potatoes and leeks. Sauté or stir fry for best flavor, adding a small amount of water to steam the leaves.

4. Beet Greens

Did you know that those beet tops you have been discarding are actually even more nutritious than the beets themselves? If you like fresh, sweet beets, you will probably like beet greens as well. They have mild, earthy flavor similar to spinach and chard, and are a great addition to soups that also contain beet roots. For a quick and easy prep, wilt them in a little water with a small amount of olive oil and garlic in a frying pan, then add a squeeze of lemon juice just before serving.

5. Arugula

Native to the Mediterranean region, arugula is one green you might have to grow yourself since it is not often found in grocery stores. It is one of the most nutritious of the salad greens and is a nice substitute for lettuce in sandwiches, adding a sharp and nutty flavor. It makes a great pesto, and combines well with milder lettuces in a salad bowl. It goes well with citrus fruits and juices, berries, potato dishes, and balsamic vinegar. Arugula is also called rocket or roquette.

6. Chard

Chard is available in a rainbow of colors and has a fairly mild, spinach-like flavor. The stems have a milder flavor than the leaves, and both the parts are edible. Some recipes call for using just the leaves; others use both, and often the stems are cooked first, then leaves are added during the last few minutes. Chard leaves can be cooked with a small amount of water, then you might want to add a little olive oil and lemon juice. Baby chard leaves can be added to any salad of mixed greens.

7. Kale

Kale has been called the “king of calcium” and is often listed among the 10 healthiest foods you can eat. It is popularly featured in smoothies and kale chips. Some recipe books suggesting boiling kale in a shallow amount of water. As with all cooked greens, save and drink the “pot likker” (cooking water) to benefit from the water soluble nutrients. Strip the raw leaves off the stalks by holding the stalk, rib side up, with one hand and stripping off the leaves with the other. If the stalks are tender, they can be chopped and used as well. Massaged kale makes a tasty salad.

8. Spinach

Lettuce may be the number one leafy green vegetable eaten in North America, but spinach is a close second. Popeye had the right idea! Raw spinach is a handy nutrition booster to keep in your refrigerator and use anywhere you might have used lettuce. Spinach is thought to have originated in Persia (Iran) and didn't make it to Europe until the 11th century when the Moors introduced it in Spain. The light in grocery stores has been found to actually *increase* overall nutritional value in baby spinach in “ready to eat” clear containers