



# Connecting School Foods to Curriculum, NJ Farms, and the Kitchen Table

Lettuce is the featured item for Garden State on Your Plate!

## A Garden State on Your Plate Lettuce Tasting

Rinse all lettuces thoroughly, moving small portions vigorously through cold water to dislodge and remove any sand or soil. Lay out on clean kitchen towels to dry thoroughly.

To taste lettuces, first observe color, texture, and growth habit. Are leaves velvety smooth, or bumpy? Are they crisp and brittle, or soft and supple? Which ones would work best for shredding atop a taco? Which could be used as a wrap for savory filling? Taste leaves separately and unadorned, noting notes of sweet, bitter, sour, and salty. Now, try each lettuce with a drop of lemon, a dash of salt, a drop of olive oil, both lemon and salt, and finally, a combination of some, and then, all, of the flavorings. Are flavors enhanced by any/all of the additions? With romaine lettuce, also taste grilled. What happens to the flavor, with and without the additions. Which of these lettuces would you like to grow at home and in Edible Gardens at school, as part of class? Which of these lettuces would you like to have most as part of school meals?

## Words for Lettuce

French: laitue  
Spanish: lechuga  
Arabic: khas  
Cantonese: 生菜; saang1coi3  
Ukrainian: листя салату; lystya salatu

## Growing Lettuce at School and Home

Sow seed directly in the soil as soon as the ground can be worked. Because lettuce grows quickly, the best approach is to plant a small amount of seeds at a time, staggering the plantings. Plant seeds in rows or broadcast them across a small area. Cover with about ¼ inch fine soil. Keep evenly moist. Thin seedlings if growing head lettuce.

First salads of cut-and-come-again lettuces can be cut in about 3 weeks.



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## Lettuce and Calculations

Lettuce seeds are relatively light: 600 – 1,200 per gram.

Lettuces grow best in fertile, well-drained, moist soil with plenty of rich organic matter and a pH between 6.0 and 7.0.

Lettuces are a cool-weather crop. Lettuce grows most robustly with 5-6 hours of sun, but can benefit from afternoon shade as the season progresses and temperatures climb. "tomatl." They were introduced to the US from Europe in the 18th century.

See Garden State on Your Plate photos on Facebook at [www.facebook.com/psgcoop.org](http://www.facebook.com/psgcoop.org)

A PROJECT OF THE PRINCETON SCHOOL GARDENS COOPERATIVE, PRINCETON PUBLIC SCHOOLS, AND POMPTONIAN FOOD SERVICE  
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## **Lettuces in History and Social Studies**

Nature Genetics: DNA analysis shows that the lettuces we eat today descended from wild plants that were modified 6000 years ago in the Caucasus – a mountainous region situated between the Black Sea and the Caspian Sea, encompassing parts of Russia, Georgia, Azerbaijan, Armenia, Turkey, and Iran – so that plant oil could be harvested from the seeds.

National Geographic: Egyptian wall murals of Min, the god of fertility, show romaine-like lettuce growing circa 2700 B.C. Min consumed lettuce as a sacred food; ordinary Egyptians used the oil of the wild seeds for medicine, cooking, and mummification.

Ancient Greeks and Romans further bred the plants to use them as leafy vegetables. Romaine lettuce was perfected in Syria, where the leaves were used as handy edible scoops for tabbouleh.

Mentions of cabbage-style lettuce appeared in the Middle Ages.

In 1861, Mrs. Esabella Beeton, in “The Book of Household Management,” recommended including 15 lettuces as part of the menu for a middle-class hostess planning a picnic for 40.

In 1863, Fearing Burr Jr, market gardener and author of The Field and Garden Vegetables of America, lists 52 lettuces.

Lettuces are loaded with anthocyanins—the flavonoid compounds that give vegetables their gaudy red, purple, and blue colors. In plants, these act to protect against such environmental stresses as ultraviolet radiation, cold temperatures, and drought. In people, they reduce the risks of cancers and cardiovascular disease

Tender lettuces herald spring and sometimes are used in religious festivals, including Easter and Sham el-Nessim (smell of the breeze)

## **Lettuce as a Cash Crop**

USDA/ERS Lettuce is one of the main salad crops grown across the globe. In 2022 (the most recent year that figures are available), lettuce accounted for nearly 1/5 of the \$21.8 billion from sales of vegetables and melons. Romaine lettuce sales totaled \$1.54 billion, iceberg lettuce sales were \$1.33 billion, and leaf lettuce sales were \$1.25 billion. New Jersey is ranked in the top 10 for production of romaine lettuce, along with bok choy, spinach, escarole, kale, peaches, plums and bell peppers, among others.

## **Seasonal Shifts**

USDA/ERS: From mid-November through early April, most lettuce sold in the United States is sourced from the irrigated desert valleys of Southern California’s Imperial County and the Yuma area of Arizona. Shipments of lettuce from Florida help fill in regional market gaps during winter and spring months. From late April through mid-November, production shifts to Central California. From spring through fall, local production in most other States serves farmers markets, regional/local retail and restaurant demand, and community-supported agriculture.

## **Prepping Lettuce for Recipes**

To wash thoroughly, add small amounts of lettuce to a big bowl of cold water. Swish vigorously and remove. Then wash twice more. Drain thoroughly. Washed lettuce will keep for a day or so in the refrigerator, wrapped loosely in a moistened paper towel.



## Tabbouleh

In "A Book of Middle Eastern Food," Claudia Roden writes: "Rich, earthy, and beautifully seasoned, this is a wonderful party dish. Bulgur gives the tabbouleh its earthy quality. This is harmoniously balanced by the light, refreshing aromas of parsley and mint, and the acid tang of lemon."

8-10 servings

½ pound fine bulgur (cracked wheat)  
4 tablespoons finely chopped scallions  
1 large onion, finely chopped  
Salt and black pepper  
¾ cup finely chopped parsley  
4 tablespoons finely chopped fresh mint or 2 ½  
tablespoons dried crushed mint (or to taste)  
5 tablespoons olive oil, or more  
5 tablespoons lemon juice

### Garnish

Black olives  
Grape tomatoes, halved  
Cucumber slices  
Green and red peppers, sliced

### Serving

Romaine lettuce leaves

1. Soak the bulgur in water for about ½ hour. Drain and squeeze out as much moisture as possible. Spread out to dry further on a cloth.
2. Mix the bulgur with the onions, squeezing with your hands to crush the onions so the juices penetrate the bulgur. Season to taste with salt and pepper.
3. Add parsley, mint, olive oil, and lemon juice and mix well. Taste and adjust seasonings. The salad should be distinctly lemony.
4. To serve, pile salad onto a large platter and decorate with garnishes. Use romaine lettuce leaves as edible forks.

## Chop Chop Salad

This Bon Appetit recipe by Julie Mayfield and Charles Mayfield is easily adapted to ingredients on hand. Add cheese, but reduce the amount of dressing for balance. To make ahead of time, assemble everything except the avocado and dressing. Then stir in the avocado at the last minute and toss with the dressing.

6-8 servings

### Salad

2 romaine lettuce hearts, washed and chopped into bite-size pieces (about 8 cups)  
1 cup cherry tomatoes, quartered  
¼ pound bacon, cooked until crispy and chopped into small pieces  
1 ½ pounds cooked chicken, chopped  
2 avocados, pitted and diced

### Caesar-ish Dressing

1 avocado, pitted and peeled  
4 anchovy fillets, rinsed, if desired  
Juice of ½ lemon  
1 clove garlic, peeled and smashed  
2 tablespoons extra-virgin olive oil or avocado oil  
1 teaspoon Dijon mustard (optional)

1. In a food processor or blender combine all the dressing ingredients and puree. Add more oil if you want a thinner consistency.
2. Place all the chopped salad ingredients in a large bowl and toss with the dressing.

## Pickled Beet, Arugula & Herbed Goat Cheese Sandwich

Carolyn Casner, of Eating Well, writes: This pickled beet, arugula and goat cheese sandwich is peppery with creamy notes from the goat cheese and sweet and tangy undertones from the pickled beets. Chopped walnuts add nuttiness and crunch to this easy sandwich." Variation: Buy whole beets. Wash and place on baking sheet; pierce each one with the tip of a knife. Roast beets at 350 degrees until tender. Cool, then store in the refrigerator.

1 serving

2 ounces goat cheese, softened  
1 tablespoon snipped chives  
1 tablespoon chopped fresh dill  
1 teaspoon extra-virgin olive oil  
Pinch of salt

Ground pepper to taste  
2 slices whole-wheat sandwich bread, lightly toasted  
1 tablespoon chopped walnuts, toasted  
2 ounces sliced pickled beets  
1 cup arugula

1. Mash goat cheese, chives, dill, oil, salt and pepper together in a small bowl.
2. Spread the goat cheese mixture on one side of each toast slice.
3. Sprinkle walnuts over one slice then layer on beets and arugula.
4. Top with the second slice of toast, cheese-side down, and cut the sandwich in half.

## Grilled Romaine

Sam Sifton, of *The New York Times*, writes: *Lettuces do nicely on the grill, softening slightly at their centers and charring beautifully at their tips....Make sure to paint the dressing into the crevices between the leaves, so that while the lettuce caramelizes slightly on the exterior, there is still warm creaminess within.*"

4 servings

### Dressing

1 clove garlic, peeled and minced  
6 anchovy fillets, rinsed and minced  
2 teaspoons mayonnaise  
2 teaspoons Dijon mustard  
½ cup extra-virgin olive oil  
2 tablespoons cider vinegar  
Kosher salt and black pepper to taste

### Salad

2 tablespoons extra-virgin olive oil  
2 heads romaine lettuce, tops and bottoms trimmed neatly, the heads cut lengthwise into quarters  
½ cup grated Parmesan

1. Build a fire in your grill, leaving one side free of coals. When coals are covered with gray ash and the temperature is medium (you can hold your hand 5 inches above the coals for 5 to 7 seconds), you are ready to cook. (For a gas grill, turn all burners to high, lower cover and heat for 15 minutes, then turn burners to medium.)
2. Meanwhile, make the dressing: Put the minced garlic into a bowl, and add the minced anchovies. Using a whisk, mix and mash these ingredients together until they form a paste. Add the mayonnaise and the mustard and whisk. Add the olive oil, whisking all the while, and then the vinegar. Season to taste with salt and pepper. Set aside.
3. Make the salad: Drizzle the olive oil over the quartered heads of lettuce. Lightly grill these directly over the hot coals for 15 to 20 seconds on each side, until they are lightly golden, then remove to the cool side of the grill. Using a pastry brush or a small spoon, paint the dressing over the lettuce, making sure to get dressing between the leaves. Sprinkle the lettuce with Parmesan and cover the grill for 1 or 2 minutes to allow the cheese to melt and the lettuce to soften further. Remove lettuce to a platter and serve.

### Ingredients that Go Well with Lettuce

apples • avocado • basil • cheese • cucumber • hard-boiled eggs  
• garlic • lemon • mushrooms • Dijon mustard • nuts • olive oil  
olives • orange • parsley • pears • black pepper • raisins • salt  
sesame seeds • tarrogon • vegetables • vinaigrette • vinegar

### Words that Describe the Flavor, Color, and Texture of Lettuce

bitter • bright green • buttery • crisp • crunchy  
delicate • earthy • emerald • firm • fresh • frilly  
juicy • leafy • lime • mild • nutty • peppery  
ruffled • sweet • tender • watery • yellow-green

### GARDEN STATE ON YOUR PLATE LETTUCE FACTS

Lettuce is climate friendly only during early spring and fall, when it's in season and grown locally; out of season, it's difficult to grow, harvest, and transport – and requires significant amounts of water and energy

Generally, the darker the lettuce, the higher the nutrition. Powerhouse lettuces are romaine and arugula. Both are high in vitamins A, C, and K; several B vitamins (including folate); and potassium

Different lettuces are grouped in categories: crisphead, butterhead, romaine, and looseleaf; some lists include chicory, dandelion, endive, radicchio, frisee, escarole, spinach, and kale

Crisphead lettuce, also called iceberg, is the least nutrient-dense salad green. It's a round, tightly packed head, with sweet, pale green, crunchy leaves

Romaine has long, crisp leaves and thick white ribs. It is a classic lettuce for Caesar salads and can be sliced in half lengthwise and grilled or roasted. Egyptian wall murals show romaine-like lettuce, circa 2700 BC

Butterhead lettuces (Boston and Bibb) resemble a blossoming flower, with delicate, smooth leaves

Looseleaf lettuces generally grow along a single stalk; tear larger leaves into bite-size pieces to for salads and sandwiches

Arugula, originating from the Mediterranean, and watercress, are peppery; dandelion and escarole are bitter

It takes about two cups of greens to make the nutritional equivalent of a one-cup serving of vegetables

Mesclun is a loose mix of tender young lettuce leaves that might include arugula, baby spinach, radicchio, and other baby greens

Sources: *The Food Chronology*, *Nature Genetics*, *National Geographic*, *USDA/ERS*, *NJDA*, *The Farmer's Almanac*, *Mother Earth Gardener*, "100 Vegetables and Where They Came From," *Middle East Eye*,

# CLIMATE IMPACT OF LETTUCE

ONLY THOSE GROWN LOCALLY AND SEASONALLY

Animal-Based Foods Are More Resource-Intensive than Plant-Based Foods

PER TON PROTEIN CONSUMED



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**Garden State on Your Plate** is a series of seasonal produce tastings in the cafeterias at Princeton Public Schools. The emphasis is on a New Jersey produce item, its growth requirements, the different ways it can be prepared, and how the flavor can be altered by the chef and the students. Students learn about farming, climate, and cooking, and they gain flavor power—the ability to personalize their item using salt and citrus. The tastings illustrate and amplify curriculum in the classroom, in the cafeteria, and in the district's Edible Gardens.



Founded in 2005, Princeton School Gardens Cooperative fosters garden- and food-based education in the classroom, cafeteria and community. [PSGCOOP.ORG](http://PSGCOOP.ORG)

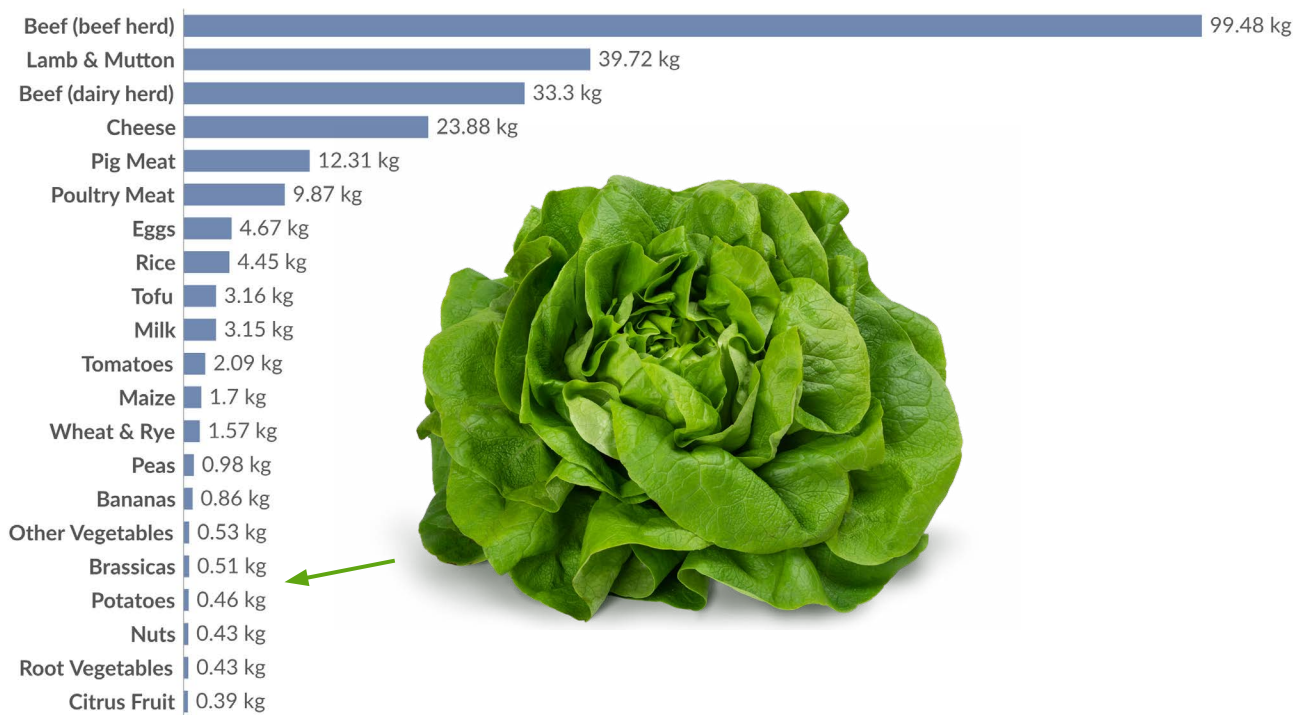
# CLIMATE IMPACT OF LETTUCE

ONLY THOSE GROWN LOCALLY AND SEASONALLY

## Greenhouse gas emissions per kilogram of food product

Our World  
in Data

Greenhouse gas emissions<sup>1</sup> are measured in kilograms of carbon dioxide-equivalents<sup>2</sup>. This means non-CO<sub>2</sub> gases are weighted by the amount of warming they cause over a 100-year timescale.



Data source: Poore and Nemecek (2018)

OurWorldinData.org/environmental-impacts-of-food | CC BY



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