

Tahoe Fruit & Vegetable Workshop Series

Lettuce & Kale



passingbird.com image



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Agriculture and Natural Resources

Master Gardener Program

Tahoe Fruit & Vegetable Workshop Series

Lettuce & Kale

- Project overview
- Phenology
- Scientific Classification & Plant Lifecycle
- Varieties
- Nutrition
- History and Culinary Aspects
- Planting and care
- Workshop Plans & Supplier information
- Distribution of Plant Materials



Wikipedia image



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- **Master Gardeners** are **community members** who have been trained under the direction of the University of California (Davis) Cooperative Extension. **50 hours of formal classroom training**
- We assist the UC Cooperative Extension by providing practical, scientific gardening information to the home gardeners in the Lake Tahoe Basin.
- The Lake Tahoe Master Gardeners offer research-based information by:
 - ✓ **Answering questions** via email hotlines, farmers markets and at community events.
 - ✓ Offering **workshops and classes**



123RF Image



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Master Gardeners engage in the Community

School Gardens



Community Gardens



Workshops



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Master Gardeners
engage in the Community

Plant Sales

**Farmers
Markets**



Phenology

- General **Phenology** looks at growth and development of plant that are due to weather and climate
- **Varietal Comparative Phenology** (VCP) compares growth and development among **several** plant varieties that are due to weather and climate
- Tahoe phenology

Merriam-Webster on-line Dictionary



Why grown lettuce and kale in the Tahoe Basin?

- Popular food: lettuce ranks second only to potatoes in number of servings per person
- Kale has grown in popularity
- Both are very Nutritious
- Fairly easy to grow in summer at high altitudes



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Lettuce & Kale



BrownBoxSoil image

SALAD Fixings



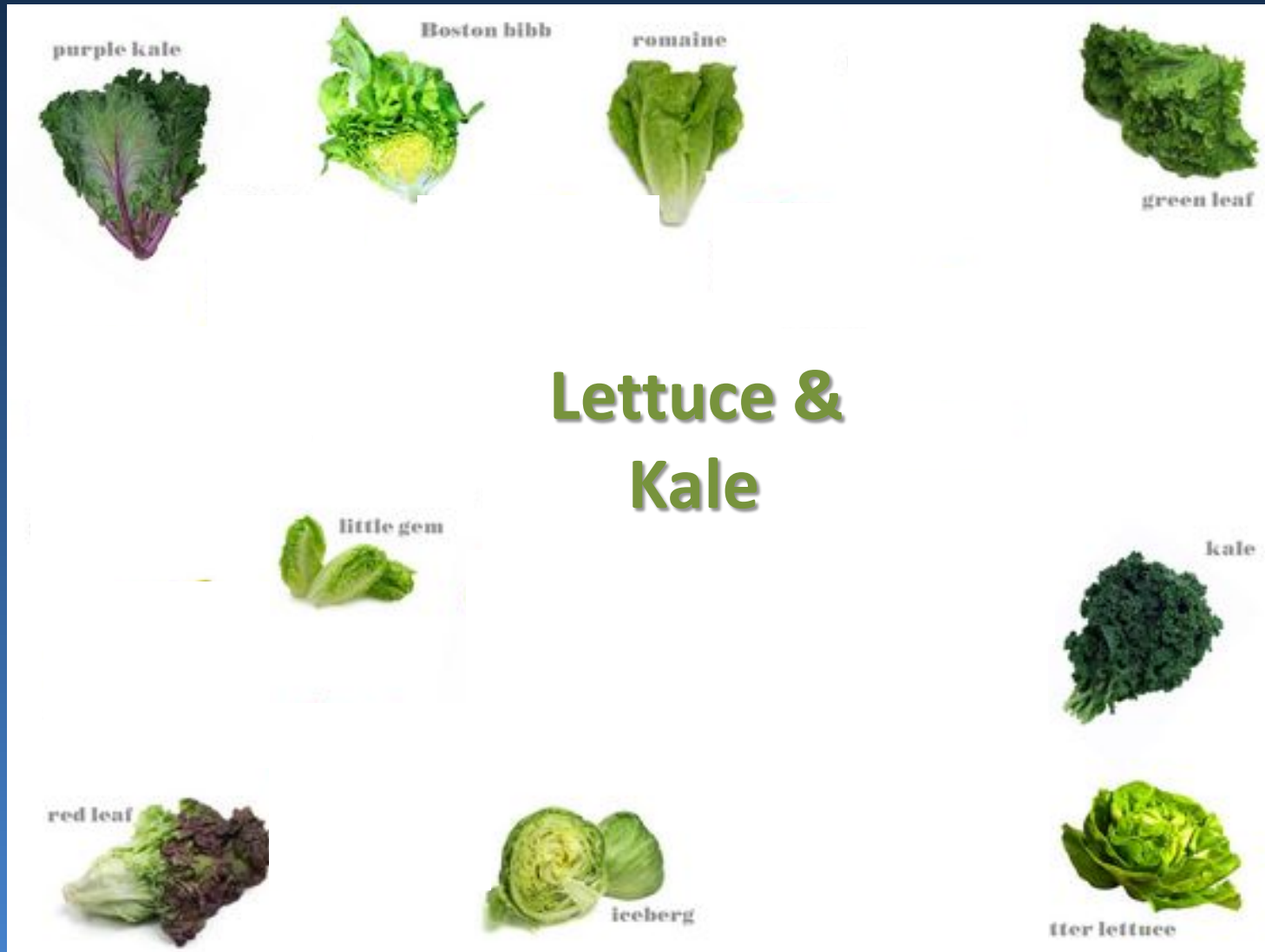
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Lettuce & Kale

Scientific Classification

Lettuce: *Lactuca sativa*

Is in the daisy family which includes asters and sunflowers



Kale: *Brassica oleracea* var. *viridis*

Same **species** as cabbage, broccoli cauliflower only variety differs



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Gettyimages

Life Cycle of Lettuce

- **Seed Stage**
 - Dormant
 - Germinating (5 days)
- **Vegetative**
 - Seedling (7 – 14 days)
 - Head formation (45- 90 days)
 - Bolting (30 days)
- **Reproductive**
 - Flowering (14 days)
 - Ripening (11-13 days)



Life Cycle of Kale

- **Seed Stage**
 - Dormant
 - Germinating (4-7 days)
- **Vegetative**
 - Seedling (7 – 14 days)
 - Head formation (none)
 - Bolting (2nd year)
- **Reproductive**
 - Flowering (2nd year)
 - Ripening (?)



Gettyimages



Lettuce Varieties

Romaine

- Aka Cos Lettuce
- Outer leaves removed: Hearts of Romaine
- Thick center rib gives it a real crunch
- Rib also gives this lettuce a slight bitter taste
- Caesar salad



Lettuce Varieties

Iceberg

- The most popular type in the US
- Very heat-sensitive and was originally adapted for growth in the northern US
- Ships well
- Low in flavor and nutritional content



Amazon.com image



Lettuce Varieties

Butterhead

- Aka Butter lettuce, Bib lettuce, Boston lettuce
- Leaves are soft and delicate
- Texture smooth like butter
- Sometimes sold “living”



iStock image



Live Gourmet image



Lettuce Varieties

Green Leaf

- Aka Loose Leaf lettuce
- Ruffled edges
- Mild flavor
- Hardy
- Continual harvest
- Eaten raw or sautéed or grilled



Tanimura & Antle image



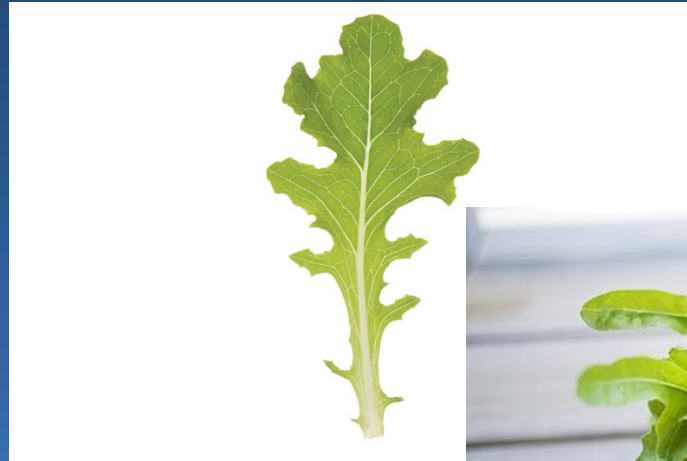
Johnny's Selected Seeds image



Lettuce Varieties

Oakleaf

- Aka Red Oakleaf, Green Oakleaf
- Shape similar to oak tree leaf
- Mistake it for leaf lettuce
 - Differences in shape and texture
 - Oakleaves are a little shorter and more squat
 - Tops of their leaves have a softer texture



Lettuce Varieties

Stem lettuce

- Aka celtuce, “celery” and “lettuce.”
- Grown for its stem
- Used in Chinese cooking
- Taste similar to hearts of palm, celery



Wikipedia image



Kale Varieties

- Dino Kale
- Purple Kale
- Curly
- Ornamental Kale



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Lettuce & Kale

Nutrition

Serving Size: 100 grams RAW

Average Daily Requirements

| | Iceberg | Romaine | Kale |
|-----------|---------|---------|--------|
| Water | 96 g | 94 g | 90 g |
| Calories | 14 Cal | 17 Cal | 35 Cal |
| Carbs | 2% | 3% | 3% |
| Fiber | 5% | 8% | 16% |
| Calcium | 2% | 3% | 25% |
| Magnesium | 2% | 4% | 10% |
| Potassium | 3% | 5% | 7% |
| Vitamin C | 4% | 5% | 112% |
| Vitamin A | 63% | 55% | 55% |

Calculated from
USDA Food Database
NIH, Dietary Reference Tables



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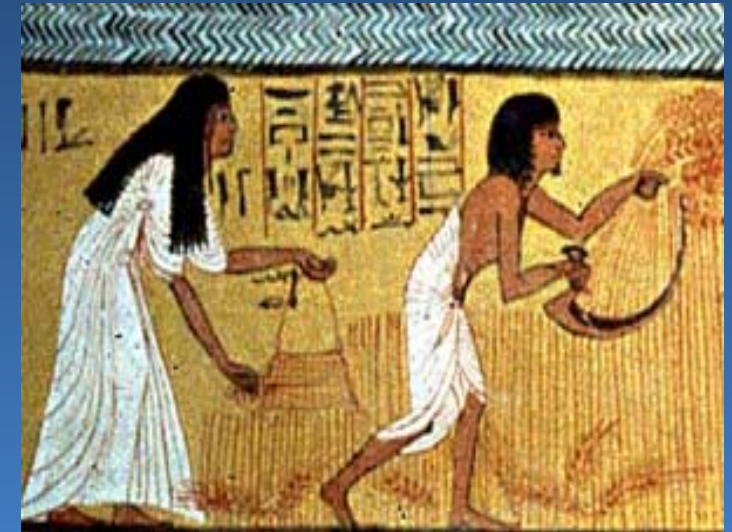
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History & Fun Facts

Lettuce

- Native to Eastern Mediterranean region & Western Asia
- Egypt 4500 BC Cultivation, Min god of Fertility
- Ancient Greeks and Romans
- China
- Americas Columbus 1493
- California 17th century
- Refrigeration and railway transportation
- Harmless white sap in homegrown lettuce gives scientific name



History & Fun Facts

Kale

- Celts to Europe in 600 BC
- Greece 400 BC
- North America in 1500s by colonists
- Canada in 1600 by Russians
- Farmer's markets, smoothies, foodies & chefs



Image by Jen Delyth



History & Fun Facts

Lettuce

Lettuce production
(millions of tonnes)

| Country | 2015 |
|---|-------------|
|  China | 14.6 |
|  United States | 3.8 |
|  India | 1.1 |
|  Spain | 0.9 |
|  Italy | 0.6 |
| World | 26.1 |

Source: UN Food & Agriculture Organization^[4]



Caesar Salad



- Olive oil
- Garlic
- Croutons
- Lemon juice
- Parmesan cheese
- anchovy paste or 1-2 anchovies
- Raw or coddled eggs
- Black pepper
- Salt
- ROMAINE Lettuce

Make the croutons

Make the dressing

Tear or cut Romaine

Mix together

Prepare the salad at the table for added drama.





Kale Chips

- Olive oil
- Seasoning of choice
- Kale leaves

- Trim away veins of kale
- Mix seasoning with olive oil
- Toss together
- Arrange kale pieces on micro-wave safe plates, do not overlap
- Cook each plateful of kale in microwave, until crispy (2-3 min), may need to turn once



Growing Lettuce



- Prefers cool temperatures
- Considered to be a spring crop

Requirements

- Humus-rich, moisture-holding, but well-drained soil
- Abundant in leaf-producing nitrogen
- manure & compost
- Soil pH 6.5 to 7.0
- Sunlight 3-8 (partial & full sun)
- Water 3-5 days



Growing Lettuce



Jungseed image

Planting

- Early spring lettuce in Tahoe, sow indoors in late winter in or cold frames
- After last chance for snow and ground is workable, plant seedlings or to extend harvest plant seeds directly in ground at weekly intervals ~ late May early June



Texas A&M AgrLife Research photo

- As weather warms, plant or seed in shadier locations, use shade cloth
- Limited space, lettuce can be intercropped with slower-growing or after harvesting other vegetables



Growing Lettuce



My-Favorite Things image



[Mad About Gardening Image](#)

Harvest

- Quality deteriorates, harvest ASAP
- Make extra plantings not extend harvest
- Pick in morning, preserves crispness acquired overnight
 - Loose-leaf can be harvested continuously
 - Head types test firmness with back of hand



Growing Kale



- Prefers cool temperatures
- Tolerates frost and snow

Requirements

- Well-drained, light soil
- Ample nitrogen, heavy feeders
 - manure & compost
- Soil pH 5.5 -6.8
- 4-8 hours sun
- Water 3-5 days



Growing Kale



Toni Sicola image

Planting

- Early spring kale in Tahoe, sow late winter indoors or cold frames
- After last chance for snow and ground is workable, plant seedlings 12 to 18 inches apart, closer for dwarf varieties



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Growing Kale

Harvest

- Harvest leaves from bottom cutting center will stop growth
- Harvest in morning and refrigerate immediately
- Kale becomes sweeter after first frost
- Continues to grow in year 2



Dorling Kindersley



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Pests



Insect

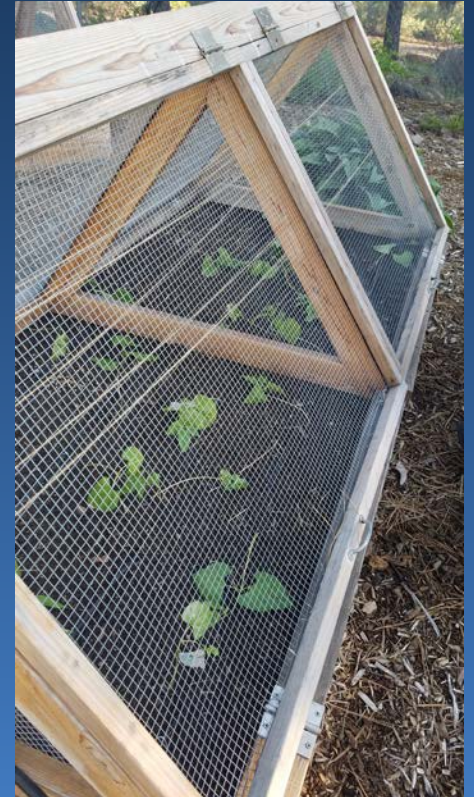
- Aphids
- Slugs
- Whiteflies
- Earwigs
- Cutworms

Diseases

- Rot

Critters

- Squirrels
- Rabbits
- Birds



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Workshop Varieties

Lettuce

Black Seeded Simpson

Freckles Romaine

Kale

Lacinato

Dwarf Blue Curled
Scotch



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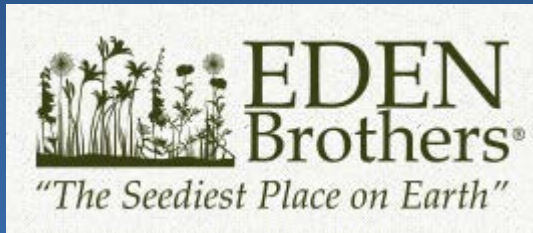
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Workshop Varieties

Black Seeded Simpson Lettuce



- Favorite
- Easy to grow
- Strong yields



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Workshop Varieties

Freckles Romaine Lettuce

Heirloom



- Splashes of brilliant crimson
- Heat resistant, low bolt
- German “specked like a trout’s back”



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Workshop Varieties

Lacinato Kale

Heirloom



- 30 days baby leaf
60 days full size
- Aka Dinosaur kale
- Fantastic Flavor
- Italian heirloom



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Workshop Varieties

Dwarf Blue Curled Scotch Kale

Heirloom



- Tasty salad or steamed
- Hardy
- Productive



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- Harden off the seedlings - adjust to sun, wind and temperature
- Dig a hole slightly larger than the pot size
- Gently remove the plants – those roots are tender

- Space to allow for mature growth
- Plant just at the crown, if not stems rot
- Fertilize with a well balanced fertilizer or compost, leafy veg need a good source of nitrogen



Lettuce plants grown by



Jeanne Fry, Volunteer the UNR High Desert Farming Initiative. The program supports small farmers in identifying and growing higher value crops in western Nevada.

The Tahoe Master Gardener vegetable growing workshops qualified for participation – Looking at high elevation issues of food production.



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Alison Toy

Kale plants grown by

The University of California, Davis, Tahoe Environmental Research Center (TERC), has monitored Lake Tahoe for over 50 years, amassing a unique record of change for one of the world's most beautiful yet vulnerable lakes.

Public tours are available at the Tahoe City Field Station in the summer and year-round at the Tahoe Science Center in Incline Village.



Bre Harris



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Distribution of Plant Materials

- 2 pony packs TOTAL, 12 plants
- 1 pack lettuce, 2 varieties
- 1 pack kale, 2 varieties



Ornamental Kale

