



SNAP-Ed

WASHINGTON STATE UNIVERSITY
EXTENSION

Energize Your Life

Gardening for a Healthier You

Nutrition education for adults in a garden setting.

Participant Workbook



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***Energize Your Life –
Gardening for a Healthier You!***

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Energize Your Life

Gardening for a Healthier You



Welcome to Gardening for a Healthier You!

Dear Participant,

Welcome to *Gardening for a Healthier You!* This series of lessons teach nutrition education in the context of learning gardening skills. We know that growing food gardens promotes health as it provides more fruits and vegetables for your access; and also provides moderate physical activity – both are goals for all Americans. This workbook will provide you with the information you need to develop and grow a food garden. The charts and tables will help you:

- Discover which edible plants you want to grow
- Plan the dollar and nutritional value of your garden
- Design your space for the best variety and yield of food
- Learn what grows well in your area and how to seed, feed and water your crops
- Harvest and store your produce safely
- Manage your soil for healthy plants

This Workbook is divided into three sections: gardening resources, nutrition resources that include lesson recipes; and community resources. You will refer to some of them several times throughout the five lessons.

You will need to bring your workbook to every lesson. It is recommended you keep handouts together and maintain a log of planting and physical activity. This will ensure you have the information you need for each lesson, help you track the growth of your plants, and the time and effort you spend managing your garden.

We hope this gardening reference booklet will continue to serve you as your personal gardening knowledge and experience expands. Should you decide to grow a greater variety of fruits and vegetables than those chosen during the series, you will find that these resources will provide you enough information to support your garden expansion from seed to harvest.

We hope that your experience in this series inspires you to continue food gardening that will help sustain your health. May your gardening experience continue to blossom and grow.

Linda O. Mathews
Kathleen Manenica

My garden is my favorite teacher.

Betsy Canas Garmon

Gardening allows us to experience the seasons: a spring shower, summer warmth, first bite of fall frost, and the chill of winter. It is more than the sweet taste of berries, the snap of beans or the crunch of a carrot. It is a connection to nature and a pathway to health. Gardening is a chance to learn and grow. It is your opportunity to share.

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Section 1 Gardening Resources

Figure 1. Washington climate factors affecting vegetable production: length of growing season (frost-free days) (A); average last killing frost date in spring (B); and average first killing frost date in fall (C) (adapted from Antonelli et al. 2004, 4).

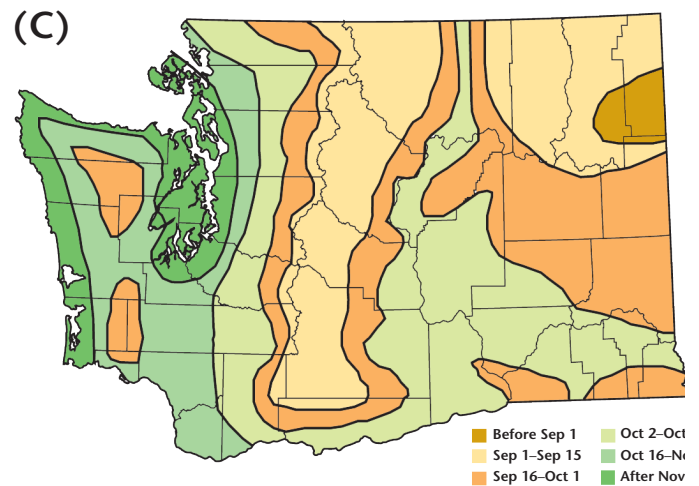
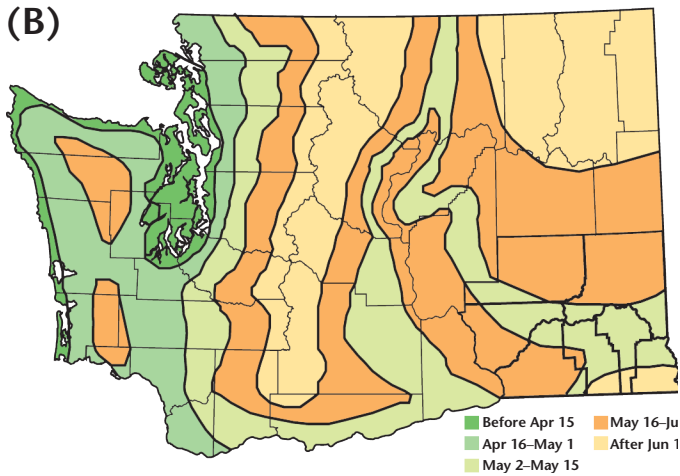
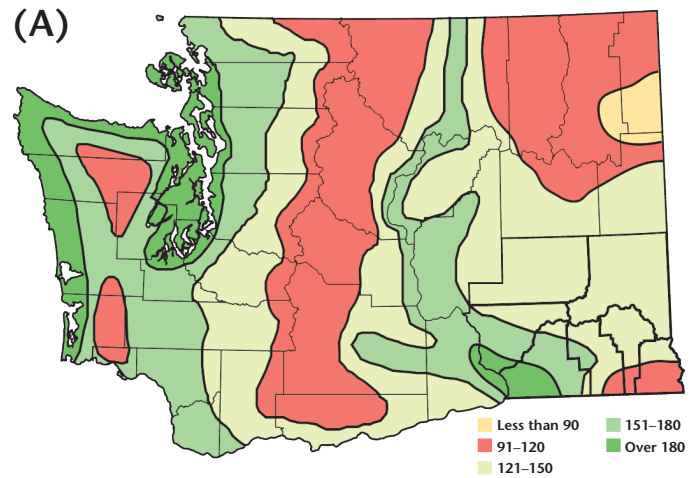


Table 1. Crops well-suited to warm and cool temperatures in Washington (adapted from Maynard and Hochmuth 1997, 89).

| Warm-Temperature Crops | Cool-Temperature Crops | | |
|------------------------|------------------------|---------------|-----------|
| Bean | Artichoke** | Collards | Rhubarb** |
| Corn, Sweet | Artichoke, Globe** | Garlic | Salsify |
| Cucumber | Asparagus** | Horseradish** | Spinach |
| Edamame | Bean, Broad | Kale | Turnip |
| Eggplant* | Beet | Kohlrabi | |
| Melon | Broccoli | Leek | |
| New Zealand Spinach | Brussels Sprout | Lettuce | |
| Okra* | Cabbage | Mustard | |
| Pepper | Carrot | Onion | |
| Pumpkin | Cauliflower | Parsley | |
| Squash, Summer | Celery | Parsnip | |
| Squash, Winter | Chard, Swiss | Pea | |
| Sweet Potato* | Chicory (Endive) | Potato | |
| Tomato | Chive | Radish | |

*These crops require the most warmth to be productive; in cooler areas they will need to be grown in plastic covered tunnels or greenhouses.
 **These crops are perennial.

Table 2. Differences in quality, production, and value between common home-grown and store-bought vegetables in Washington (adapted from Antonelli et al. 2004, 3).

| Vegetable | Quality of Garden-Grown vs. Store-Bought | Value of Garden-Grown vs. Store-Bought | Relative Yield per Square Foot |
|------------------------|--|--|--------------------------------|
| Asparagus | much better | much better | medium |
| Bean, Green | better | better | high |
| Beet | better | better | high |
| Bok Choy | same | better | medium |
| Broccoli | better | much better | high |
| Brussels Sprout | better | much better | low |
| Cabbage | same | same | low |
| Carrot | better | better | high |
| Cauliflower | same | much better | medium |
| Celery | same | better | medium |
| Chard, Swiss | much better | better | high |
| Collards | better | much better | medium |
| Corn, Sweet | better | same | low |
| Cucumber | better | much better | medium |
| Edamame | better | much better | medium |
| Eggplant | better | much better | low |
| Kale | better | much better | medium |
| Kohlrabi | same | better | high |
| Leek | better | much better | medium |
| Lettuce, Leaf | better | much better | medium |
| Lettuce, Head | same | better | medium |
| Muskmelon (Cantaloupe) | same | better | low |
| Onion, Bulb | same | same | low |
| Onion, Green | much better | much better | medium |
| Parsnip | same | better | high |
| Pea | much better | much better | medium |
| Pepper | better | much better | medium |
| Potato | same | same | low |
| Pumpkin | same | same | medium |
| Radish | same | better | low |
| Rhubarb | better | much better | high |
| Spinach | better | better | high |
| Squash, Summer | much better | much better | medium |
| Squash, Winter | same | same | high |
| Tomato | much better | much better | medium |
| Turnip | better | better | medium |
| Watermelon | better | same | high |

Adapted from Miles, C. 2013. Home Vegetable Gardening in Washington. *WSU Extension Publication EM057E*.

Table 3. Average home-grown vegetable productivity and consumption for crops commonly grown in Washington (adapted from Antonelli et al. 2004, 5).

| Vegetable | Plants per 10-ft Row | Production per 10-ft Row | Average Pounds Consumed per Adult per Year | | |
|------------------------|----------------------|--------------------------|--|-----------|-------|
| | | | Fresh | Processed | Total |
| Asparagus | 10 | 5-8 lbs | 10 | 10 | 20 |
| Bean, Green | 35 | 6-8 lbs | 15 | 25 | 40 |
| Beet | 50 | 10-12 lbs | 3 | 4 | 7 |
| Broccoli | 10 | 10-12 lbs | 5 | 6 | 11 |
| Brussels Sprout | 10 | 6-8 lbs | 3 | 0 | 3 |
| Cabbage | 8 | 10-15 lbs | 10 | 10 | 20 |
| Carrot | 60-80 | 12 lbs | 8 | 8 | 16 |
| Cauliflower | 9 | 8-10 lbs | 6 | 9 | 15 |
| Celery | 20 | 15 lbs | 5 | 0 | 5 |
| Chard, Swiss | 20 | 30 lbs | 3 | 5 | 8 |
| Corn, Sweet | 20 | 3 dozen ears | 17 | 33 | 50 |
| Cucumber | 5 | 2-3 dozen | 6 | 12 | 18 |
| Eggplant | 5 | 15 eggplants | 2 | 3 | 5 |
| Kohlrabi | 30 | 7-8 lbs | 4 | 2 | 6 |
| Lettuce, Head | 10 | 10 lbs | 5 | 0 | 5 |
| Lettuce, Leaf | 30-60 | 5 lbs | 5 | 0 | 5 |
| Muskmelon (Cantaloupe) | 3 | 10-15 melons | 5 | 0 | 5 |
| Onion, Bulb | 40 | 10 lbs | 10 | 0 | 10 |
| Onion, Green | 60-80 | 2 lbs | 2 | 0 | 2 |
| Parsnip | 40 | 10-15 lbs | 5 | 0 | 5 |
| Pea | 60-100 | 10-12 lbs | 5 | 8 | 13 |
| Pepper | 6 | 20 lbs | 3 | 7 | 10 |
| Potato | 10 | 20 lbs | 70 | 0 | 70 |
| Pumpkin | 3 | 10 pumpkins | 10 | 10 | 20 |
| Radish | 100-120 | 3 lbs | 1 | 0 | 1 |
| Rhubarb | 3-4 | 15-20 lbs | 5 | 5 | 10 |
| Spinach | 30-40 | 5 lbs | 3 | 5 | 8 |
| Squash, Summer | 3 | 25 lbs | 7 | 10 | 17 |
| Squash, Winter | 2 | 20-30 lbs | 20 | 20 | 40 |
| Tomato | 8 | 30-50 lbs | 35 | 50 | 85 |
| Turnip | 30-40 | 20 lbs | 3 | 0 | 3 |
| Watermelon | 3 | 6-12 melons | 10 | 0 | 10 |

Adapted from Miles, C. 2013. Home Vegetable Gardening in Washington. *WSU Extension Publication EM057E*.

Table 4. Seeding recommendations for common vegetable crops grown in Washington (adapted from Kumar et al. 2009, 3-4).

| Vegetable | Seeding | | | Germination | | Growth | | |
|---------------------------------------|-----------------------|--------------------------------|------------------------------|-----------------------------|-------------------------------------|---------------------------|----------------------------------|------------------|
| | Depth to Plant (inch) | Distance Between Plants (inch) | Distance Between Rows (inch) | Number of Days to Germinate | Optimum Soil Temperature Range (°F) | Base Air Temperature (°F) | Weeks to Grow to Transplant Size | Days to Maturity |
| Artichoke | ¼-½ | 18 | 36 | 8-14 | 65-82 | 50 | 6-8 | 85-120 |
| Arugula | ¼ | 6 | 10-12 | 7-14 | 45-75 | 40-55 | DS ¹ | 30-40 |
| Asparagus, Seed | 1½ | 12 | 18-36 | 24-30 | 50-85 | 40 | 12-14 | 2-3 years |
| Asparagus, Crown | 6-9 | 12 | 18-36 | 12-20 | 60-85 | 40 | DS | 1-2 years |
| Celtuce | ¼ | 8 | 10-20 | 7-10 | 50-80 | 50-60 | 4-5 | 80 |
| Bean, Bush | 1½-2 | 2 | 18-30 | 6-14 | 60-90 | 50 | DS | 50-70 |
| Bean, Lima Bush | 1½-2 | 3 | 18-30 | 7-12 | 70-85 | 55 | DS | 75-80 |
| Bean, Lima Pole | 1½-2 | 3-4 | 24-36 | 7-12 | 75-85 | 55 | DS | 85-90 |
| Bean, Pole | 1½-2 | 3 | 24-36 | 6-14 | 60-85 | 50 | DS | 55-65 |
| Bean, Scarlet Runner | 1½-2 | 4-6 | 36-48 | 8-16 | 65-85 | 50 | DS | 60-70 |
| Bean, Yardlong | 1 | 3 | 24-36 | 6-13 | 60 | 50 | DS | 75-85 |
| Beet | ½-1 | 3 | 12-18 | 7-10 | 50-85 | 40 | DS | 45-55 |
| Belgian Endive (Witloof Chicory) | ¼-½ | 4-8 | 18-24 | 7-21 | 50-75 | 45 | 4-6 | 100-120 |
| Black-Eyed Pea (Cowpea, Southern Pea) | 1-1½ | 2-4 | 24-30 | 7-14 | 70-85 | 65 | DS | 105-125 |
| Bok Choy | ¼-½ | 4-12 | 10-18 | 5-14 | 50-80 | 45 | 4-5 | 30-50 |
| Broccoli | ¼-½ | 12-18 | 18-24 | 3-10 | 50-60 | 40 | 5-6 | 50-80 |
| Brussels Sprout | ¼-½ | 18-24 | 24-36 | 3-10 | 45-85 | 40 | 5-6 | 80-105 |
| Cabbage | ¼-½ | 12-24 | 24-36 | 4-10 | 50-90 | 50 | 5-6 | 65-95 |
| Cabbage, Chinese | ¼-½ | 10-18 | 18-30 | 4-10 | 60-85 | 50 | 4-6 | 70-90 |
| Carrot | ¼-½ | 1-2 | 12-24 | 7-21 | 50-75 | 45 | DS | 60-80 |
| Cauliflower | ¼-½ | 18 | 24-36 | 4-10 | 45-85 | 50 | 5-6 | 65-80 |
| Celeriac | ⅛ | 8 | 24-36 | 9-21 | 70-75 | 60 | 10 | 90-120 |
| Celery | ⅛ | 8 | 24-36 | 9-21 | 60-70 | 45 | 10-12 | 120-140 |
| Chard, Swiss | ½ | 4-12 | 18-24 | 7-14 | 50-85 | 40 | DS | 55-65 |

¹DS is direct-seeded.

Table 4 (continued). Seeding recommendations for common vegetable crops grown in Washington (adapted from Kumar et al. 2009, 3-4).

| Vegetable | Seeding | | | Germination | | Growth | | |
|--------------------------------|-----------------------|--------------------------------|------------------------------|-----------------------------|-------------------------------------|---------------------------|----------------------------------|------------------|
| | Depth to Plant (inch) | Distance Between Plants (inch) | Distance Between Rows (inch) | Number of Days to Germinate | Optimum Soil Temperature Range (°F) | Base Air Temperature (°F) | Weeks to Grow to Transplant Size | Days to Maturity |
| Chicory (Endive, Escarole) | ½ | 8-10 | 12-24 | 5-9 | 50-80 | 40 | 4-6 | 50-60 |
| Chicory, Italian Dandelion | ¼-½ | 8-10 | 12-16 | 7-14 | 50-75 | 40 | DS | 45-55 |
| Chive | ¼-½ | 2-4 | 12-18 | 7-21 | 50-70 | 45 | 4-6 | 80-90 |
| Collards | ½-¾ | 8-18 | 18-30 | 4-10 | 40-85 | 40 | 5-6 | 65-85 |
| Corn, Sweet | 2 | 6-12 | 24-36 | 6-10 | 60-90 | 48 | DS | 65-90 |
| Corn Salad (Mâche, Feldsalat) | ¼-½ | 4-6 | 6-18 | 10-14 | 50-65 | 40 | DS | 45-55 |
| Cress | ¼-½ | 4-6 | 3-4 | 4-10 | 55-75 | 45 | DS | 25-45 |
| Cucumber | 1 | 12-18 | 36-48 | 6-10 | 70-95 | 55 | 4-5 | 45-65 |
| Edamame | 1½-2 | 2-3 | 24-30 | 6-14 | 55 | 50 | DS | 85-100 |
| Eggplant | ¼-½ | 18 | 24-36 | 7-14 | 70-90 | 60 | 6-9 | 75-95 |
| Fennel (Finocchio) | ¼-½ | 10-12 | 24-36 | 12-18 | 50-75 | 30 | 6-8 | 100-120 |
| Garbanzo (Chickpea) | 1½-2½ | 3-4 | 24-30 | 6-12 | 45 | 65 | DS | 85-125 |
| Garlic | 2 | 4-6 | 12-24 | 6-10 | 35-50 | 30 | DS | 90-150 |
| Horseradish | 4 | 12-24 | 24-48 | 10-20 | 45-75 | 40 | DS | 140-160 |
| Jerusalem Artichoke (Sunchoke) | 4 | 12-18 | 36-48 | 10-20 | 65-90 | 50 | DS | 110-150 |
| Kale | ¼-½ | 8-12 | 18-24 | 3-10 | 60-90 | 40 | 5-6 | 55-80 |
| Kohlrabi | ¼-½ | 8 | 18-24 | 3-10 | 50-80 | 40 | 6-8 | 60-70 |
| Leek | ¼-½ | 4-6 | 18-24 | 7-12 | 45-90 | 35 | 10-12 | 80-90 |
| Lettuce, Head | ⅛-¼ | 12-14 | 18-24 | 4-10 | 40-80 | 40 | 4-6 | 55-80 |
| Lettuce, Leaf | ⅛-¼ | 2-4 | 4-6 | 7-10 | 50-80 | 40 | 4-6 | 45-60 |
| Muskmelon (Cantaloupe) | 1 | 24-36 | 36-48 | 4-8 | 75-95 | 50 | 3-4 | 75-95 |
| Mustard Greens | ¼-½ | 8-18 | 12-24 | 3-10 | 45-85 | 35 | 5-6 | 35-65 |

¹DS is direct-seeded.

Table 4 (continued). Seeding recommendations for common vegetable crops grown in Washington (adapted from Kumar et al. 2009, 3-4).

| Vegetable | Seeding | | | Germination | | Growth | | |
|-------------------------------------|-----------------------|--------------------------------|------------------------------|-----------------------------|-------------------------------------|---------------------------|----------------------------------|------------------|
| | Depth to Plant (inch) | Distance Between Plants (inch) | Distance Between Rows (inch) | Number of Days to Germinate | Optimum Soil Temperature Range (°F) | Base Air Temperature (°F) | Weeks to Grow to Transplant Size | Days to Maturity |
| New Zealand Spinach | ¼-½ | 6 | 24 | 5-10 | 60-75 | 50 | 4-6 | 70-80 |
| Onion, Set | 1-2 | 2-3 | 12-24 | n/a | 50-90 | 40 | DS | 90-110 |
| Onion, Seed | ¼-½ | 1-2 | 12-18 | 10-20 | 50-90 | 40 | 5-6 | 80-120 |
| Parsley | ¼-½ | 2-4 | 12-18 | 20-30 | 50-85 | 35 | 6-8 | 75-90 |
| Parsnip | ¼-½ | 2-3 | 18-24 | 20-25 | 50-85 | 45 | DS | 100-120 |
| Pea | 1-2 | 2-3 | 18-36 | 6-15 | 45-85 | 40 | DS | 65-85 |
| Pepper | ¼-½ | 18-24 | 12-24 | 10-20 | 65-95 | 50 | 6-8 | 60-80 |
| Potato | 2-3 | 12 | 30-36 | 14-21 | 40 | 40 | DS | 90-105 |
| Pumpkin | 1-1½ | 36 | 72 | 6-10 | 70-90 | 45 | 4-6 | 70-110 |
| Radicchio | ¼-½ | 8-10 | 8-18 | 7-10 | 45-85 | 40 | 4-6 | 65-90 |
| Radish | ½ | 1-2 | 6-12 | 3-10 | 50-65 | 40 | DS | 20-30 |
| Rutabaga | ½ | 6-8 | 18-24 | 3-10 | 45-85 | 40 | DS | 80-90 |
| Salsify | ½ | 3-4 | 18-24 | 14-20 | 55-75 | 40 | DS | 110-150 |
| Shallot | 1 | 4-6 | 12-18 | 18 | 45-95 | 32 | DS | 60-75 |
| Spinach | ½ | 2-4 | 12-18 | 6-14 | 45-75 | 15-20 | DS | 30-40 |
| Squash, Summer | 1-1½ | 18-24 | 36-48 | 3-12 | 70-95 | 45 | 4-6 | 45-60 |
| Squash, Winter | 1-1½ | 24-36 | 72 | 6-10 | 60-90 | 45 | 4-6 | 85-120 |
| Sweet Potato | 1-2 | 12-18 | 36-48 | 14-20 | 75-80 | 60 | DS | 150 |
| Tomatillo | ¼-½ | 18-36 | 36-48 | 6-14 | 70-85 | 51 | 5-6 | 55-90 |
| Tomato | ¼-½ | 18-36 | 36-48 | 6-14 | 70-85 | 51 | 5-6 | 55-90 |
| Tomato, Ground Cherry (Husk Tomato) | ¼-½ | 18-24 | 36 | 6-13 | 70-85 | 51 | 6-7 | 90-100 |
| Turnip | ¼-½ | 2-3 | 12-18 | 3-10 | 40-85 | 35 | DS | 40-50 |
| Watermelon | 1-1½ | 24-36 | 48-60 | 3-12 | 60-95 | 55 | 4-6 | 80-100 |

¹DS is direct-seeded.

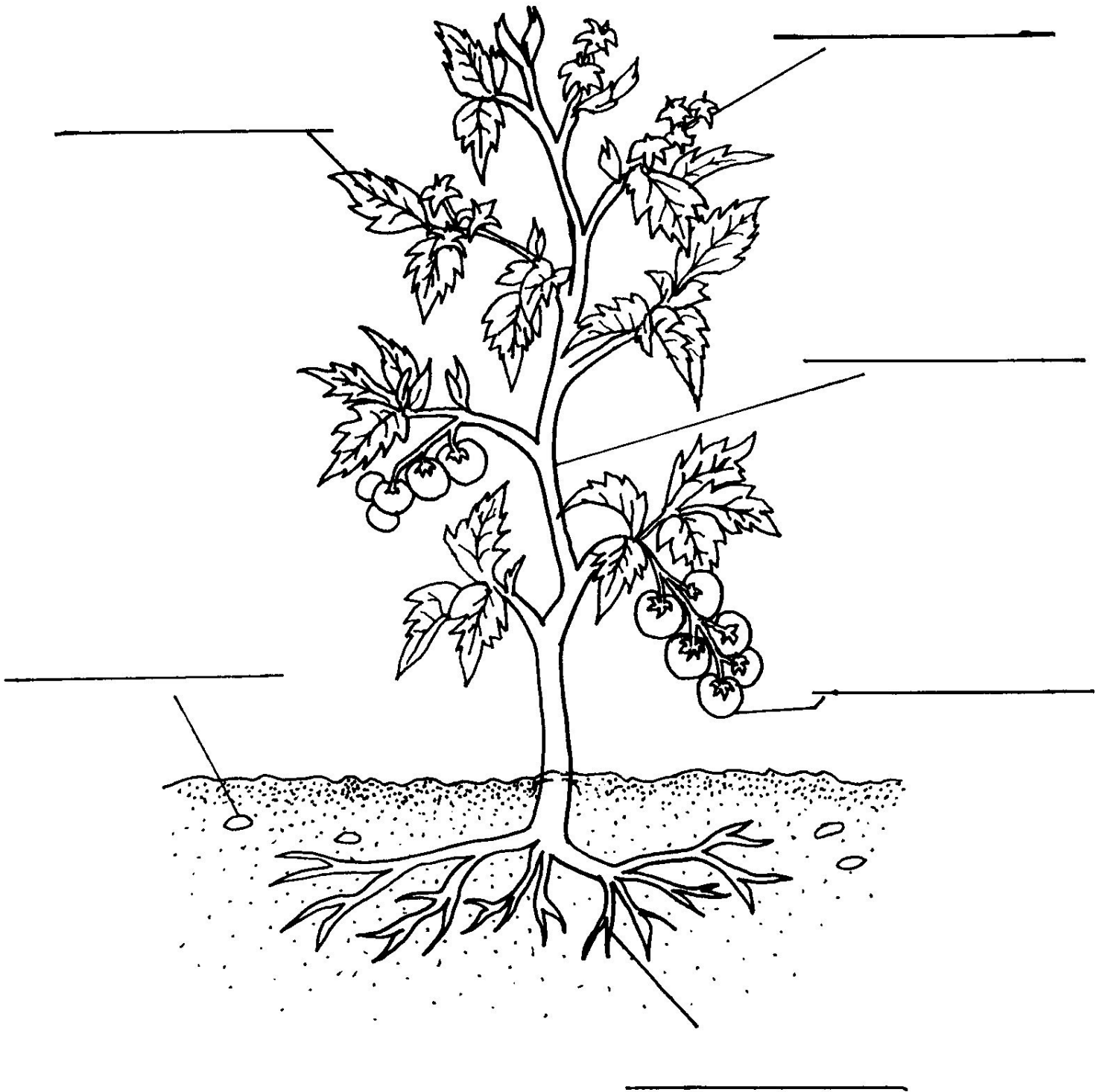
Adapted from Miles, C. 2013. Home Vegetable Gardening in Washington. *WSU Extension Publication EM057E*.

Table 6. General rooting depths of some common vegetable crops grown in Washington (adapted from Maynard and Hochmuth 1997, 221).

| Shallow-Rooting (18-36 inches) | | Medium-Rooting (36-48 inches) | | Deep-Rooting (48+ inches) |
|-----------------------------------|---------|----------------------------------|----------------|------------------------------|
| Broccoli | Garlic | Bean, Snap | Rutabaga | Artichoke |
| Brussels Sprout | Leek | Beet | Squash, Summer | Asparagus |
| Cabbage | Lettuce | Carrot | Turnip | Bean, Lima |
| Cabbage, Chinese | Onion | Chard, Swiss | | Parsnip |
| Cauliflower | Parsley | Cucumber | | Squash, Winter |
| Celery | Potato | Eggplant | | Sweet Potato |
| Chicory (Endive) | Radish | Mustard | | Tomato |
| Corn | Spinach | Pea | | |
| | | Pepper | | |

Plant Parts Diagram

Label the plant parts





Garden Planting Log

| DATE PLANTED | CROP | MEASUREMENTS PROGRESS | PHYSICAL ACITIVITY | HARVEST DATES |
|--------------|------|--------------------------|--------------------|---------------|
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Table 7. Herb Harvest Schedule
Puget Sound Region-Western Washington

| | | | | | | | |
|----------|-----|-----|-----|-----|------|-----|-----|
| Basil | | | Jul | Aug | Sept | Oct | |
| Chives | May | Jun | Jul | Aug | Sept | | |
| Cilantro | | Jun | Jul | Aug | Sept | Oct | |
| Dill | | Jun | Jul | Aug | Sept | | |
| Lavender | | | Jul | Aug | Sept | | |
| Parsley | | Jun | Jul | Aug | Sept | Oct | Nov |
| Rosemary | | Jun | Jul | Aug | Sept | Oct | Nov |
| Sage | | Jun | Jul | Aug | Sept | Oct | Nov |
| Tarragon | | Jun | Jul | Aug | Sept | | |
| Thyme | | Jun | Jul | Aug | Sept | Oct | |

For more information about specific farm products, farms, farmers markets and other places to buy locally grown food, visit www.pugetsoundfresh.org

Table 8. COMMON HERBS

A= Annual B=Biennial P=Perennial

| Name (Common/Scientific) | A B P | Height | Propagation | Soil and Exposure | Uses | Comments |
|--|-------|---------|--|---|--|---|
| Anise <i>Pimpinella anisum</i> | A | 18"-24" | Sow seed directly in May. | Dry, well-drained soil. Full sun. | Oil extract and seeds used in flavoring pastries. | Has licorice-like flavor, use fresh seed. |
| Basil (sweet) <i>Ocimum basilicum</i> | A | 18"-24" | Sow seed directly in May or seed indoors early spring and transplant in early May. | Moist, well-drained soil. Full sun, part shade. | Fresh leaves to flavor cheese, fish, and tomato dishes. | Purple leaf basil "Dark Opal" excellent in vinegar. Many other varieties available. |
| Bee Balm <i>Monarda didyma</i> | P | 18"-30" | Sow seed directly in May. Root divisions in spring, cuttings in spring or fall. | Moist, fairly rich soil. Full sun, part shade. | Leaves and flowers to flavor jellies, fruit salads, or as tea. | Grows wild in many areas; attractive to bees. Can be invasive. |
| Borage <i>Borago officinalis</i> | A | 18"-24" | Sow seed directly in May or seed indoors early spring and transplant in early May. | Dry, poor, light soil. Full sun. | Flowers candied as garnish; young stems have cucumber flavor. | Seed, if self-sown from plant; comes up in following spring. |
| Calendula (pot marigold) <i>Calendula officinalis</i> | A | 6"-12" | Sow seed indoors in March. Transplant to garden in mid-May. | Dry, light, sandy soil. Full sun. | Petals and buds used fresh in salads and soups. | Self-sows readily. |
| Chamomile (German) <i>Matricaria recutita</i> | A | 18"-24" | Self-sows readily. | Dry, light, sandy soil. Full sun. | Flowers dried and used in tea oil used in soups and perfume. | Often confused with other Chamomiles. |
| Chervil <i>Anthriscus cerefolium</i> | A | 6"-12" | Seed directly every 2 weeks mid-March thru mid-July for continuous harvest. | Light, well-drained soil. Part shade. | Leaves fresh or dried, salads and potato and corn soup. | Can sow directly in fall for crop in following spring. |
| Chives <i>Allium schoenoprasum</i> | P | 12"-18" | Direct seed in early spring or bulb divisions. | Moist, well-drained, moderately rich soil. Full sun. | Leaves are used fresh and added to cottage cheese, salads or potatoes. | Good ornamental qualities. Will readily self-sow. |

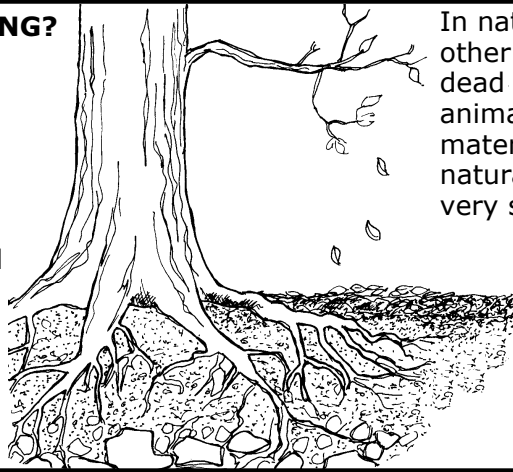
C060 A=Annual B=Biennial P=Perennial

| Name (Common/Scientific) | A B P | Height | Propagation | Soil and Exposure | Uses | Comments |
|--|-------|---------|--|---|--|---|
| Dill <i>Anethum graveolens</i> | A | 24"-36" | Seed directly in early spring or allow plant to go to seed in fall for spring germination. | Light, well-drained moderately rich soil. Full sun. | Soups, salads, pickles, dried used in meats and vegetables. | Self-sows readily and might become invasive. |
| Fennel <i>Foeniculum vulgare</i> | A | 24"-36" | Seed directly in early spring. | Light, well-drained soil. Full sun. | All parts of leaves, stem and seeds are aromatic; used for fish seasoning and sauces. | Harvest flower stalks just before bloom to eat like celery, use leaves fresh. |
| Garlic <i>Allium sativum</i> | A | 12"-18" | Divide a bulb into individual cloves and plant in fall for harvest following summer. | Rich, moist, well-drained soil. Full sun. | Whole or minced used in salads, meat dishes or butters. | Harvest whole bulb in late summer and hang to dry. |
| Geranium <i>Pelargonium</i> spp. | A | 12"-18" | Rooted cuttings transplanted in garden after risk of frost, or overwinter plants indoors. | Rich, moist, well-drained soil. Full sun, part shade. | Leaves for flavoring teas, biscuits, jelly and sugar. Dried leaves for potpourri. | Many scented geraniums, including apple, rose, mint, lemon, pineapple |
| Horseradish <i>Armoracia rusticana</i> | P | 30"-48" | Root division in fall. | Medium to heavy soil. Full sun. | Roots crushed in sauces, as condiment in meat dishes. | Very invasive. |
| Marjoram <i>Origanum majorana</i> | A | 10"-12" | Seed indoors early spring and transplant in early May. | Light, medium rich, well-drained soil. Full sun. | Leaves used in herb vinegar, soups and poultry stuffing; oils for perfumes. | Also useful in potpourri. |
| Oregano <i>Origanum vulgare</i> | P | 12"-18" | Self-sows readily. Root divisions in spring or fall. | Tolerates poor soil and dry conditions. Full sun, part shade. | Often blended with other herbs, used to flavor Italian foods. | Attractive flowers. Many forms available. Can be invasive. |
| Parsley <i>Petroselinum crispum</i> | B | 12"-18" | Seed directly in early spring. Very slow germination rate. | Medium rich, moist soil. Full sun, part shade. | Leaves as flavor in stews and soups. | Thick root varieties can be cooked as a vegetable. |
| Sage <i>Salvia officinalis</i> | P | 18"-24" | Seed directly in early spring. Root divisions in spring. | Well-drained soil. Tolerates dry conditions. Full sun. | Leaves and tender shoots used dried in poultry stuffing and meat dishes. | Several leaf color variations, golden, tri-color. |
| Summer Savory <i>Satureja hortensis</i> | A | 8"-12" | Sow directly in May or seed indoors early spring and transplant in early May. | Semi-dry, well-drained soil. Full sun. | Leaves used fresh or dry for meat and poultry stuffing, popular in bean-lentil dishes. | Leaves are high in vitamin C. |
| Winter Savory <i>Satureja montana</i> | P | 8"-12" | Sow seed directly in May. Root divisions in spring. | Semi-dry, well-drained soil. Full sun. | Leaves used fresh or dry for meat and poultry stuffing. | Leaves are high in vitamin C. Short-lived perennial. |
| Thyme <i>Thymus vulgaris</i> | P | 6"-8" | Direct seed in May or use a layering technique for rooting. | Moist, rich soil. Full sun, part shade. | Leaves used in soups and stews | Delicate flavor with steamed vegetables. Woody stems. |

COMPOSTING Science Page

WHAT IS COMPOSTING?

Composting is the controlled decay of plant and animal matter to produce compost—a dark, rich soil-like material. Compost can be added to soil to improve its structure and nutrient content.



In nature, bacteria, fungi, worms, and other soil organisms help to break down dead plants and animals, as well as animal wastes. The decomposed organic material becomes part of the soil. This natural decay process usually takes place very slowly.

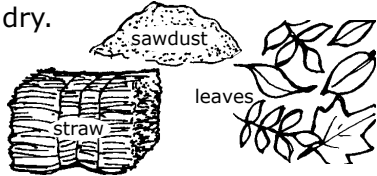
Leaves that fall to the forest floor slowly decay to form part of the organic matter in soil.

Composters create ideal growing conditions for compost organisms. This speeds up the natural decay process.

WHAT COMPOST ORGANISMS NEED

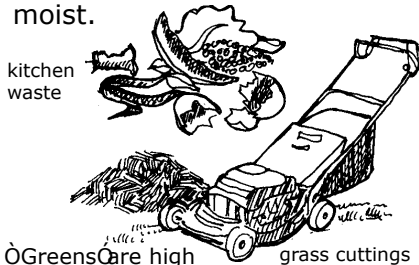
1. A balanced diet of compost materials

“Browns” are compost materials that are brown and dry.



“Browns” are high in carbon, which is energy food for microbes.

“Greens” are compost materials that are green and moist.



“Greens” are high in nitrogen, which microbes need to make proteins.

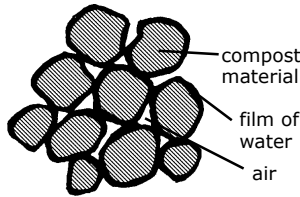
If I add about 3 parts browns to 1 part greens, then the compost organisms will have a balanced diet.



2. Just the right amount of air and water

If there’s the right amount of oxygen and moisture, microbes can rapidly grow and multiply. Too much—or too little—water, and microbes will die.

Compost materials should have a thin film of water around them, and lots of pore spaces filled with air.

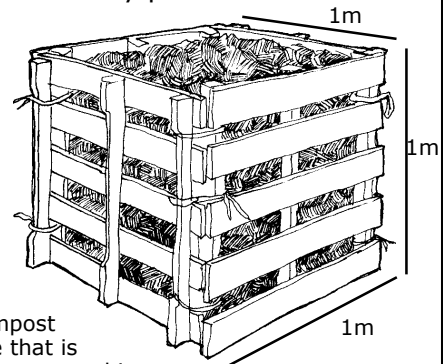


I’m mixing my compost pile so that all the compost organisms get enough air and water.

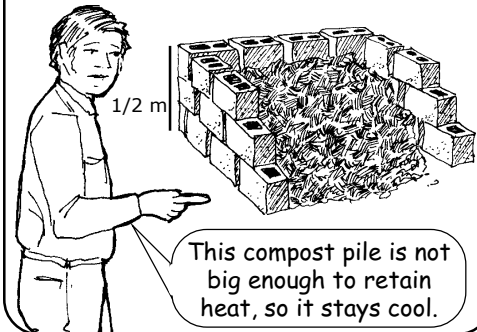


3. The right temperature

Organic materials will eventually decay, even in a cold compost pile. But the decay process is speeded up in a hot compost pile. When bacteria and fungi grow rapidly, they burn a lot of food, and give off a lot of heat. If the compost pile is big enough, the heat will build up inside the pile. Bacteria that grow well at high temperatures take over and speed up the decay process.



A compost pile that is about one cubic meter (1m x 1m x 1m) in size is big enough to hold in heat and warm up.



This compost pile is not big enough to retain heat, so it stays cool.



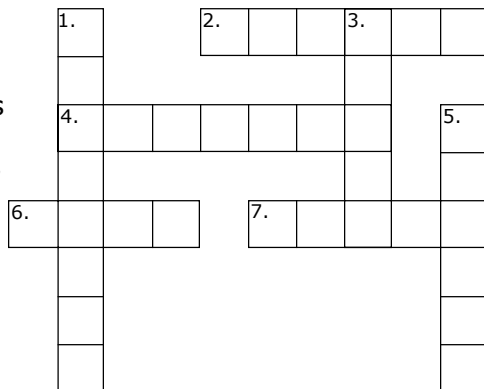
**CROSSWORD
PUZZLE**

Across

- Compost materials that are high in carbon.
- Dark, rich, soil-like material.
- A compost pile should be big enough so _____ builds up inside it.
- A balanced diet for microbes is about _____ parts browns to one part greens.

Down

- Microbes that help break down plant and animal matter.
- Compost organisms need just the right amount of _____.
- Compost materials that microbes use to make proteins.



TRY THIS

BUILD A COMPOST PILE

What you need

- * 3-meter length of wire mesh fencing
- * wire cutters
- * twist ties
- * compost materials
- * duct tape

What to do

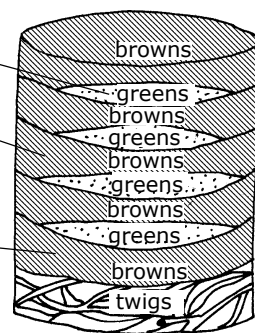
- Choose a site to set up your compost bin. Try to find a shady, well-drained, level place that is convenient.
- Snip off the fencing close to the cross wires and cover the sharp ends with duct tape to avoid getting scratched. Lap the ends of the fencing together and tie together with twist-ties to make a cylinder one meter high and one meter in diameter.
- Put a layer of twigs in the bottom of the bin to help air to reach the center of the pile.
- As you collect compost materials, layer them in the compost pile, as shown in the picture.
- Stir or turn the compost every week or so to let in more air. To reach the compost, undo the twist-ties and open the fencing.
- The length of time it takes for compost to be ready depends on many factors, such as weather conditions, the type of materials included, and the amount of turning. If you want your compost to be finished faster, keep it moist and turn it a couple of times a week. Finished compost is about one-third or

less of its original size, dark brown, and has a nice, earthy odor.

Green layers should be no more than 3-5 cm thick.

Brown layers should be 2-3 times as thick as green layers.

Start with a brown layer, then a green layer, then a brown layer, and so on. Always end with a brown layer so that wastes are covered.



**SPOTLIGHT
ON RESEARCH**

Compost Can Help Control Plant Diseases

Recent research has shown that compost not only improves soil. It can also help to control plant diseases caused by fungi. Fungi that attack plants include molds, rusts, mildews, and smuts. They over-winter in the soil and in plant debris. When the weather is warm, they produce spores, which can be splashed or blown onto wet leaves. Then the spores can germinate and infect plants.

Scientists are testing different composts to find out what types are most effective at suppressing harmful fungi. In one study, a team of scientists tested different composts to see which one would be best for controlling fruit rot in pumpkins. Fruit rot is a serious problem that affects pumpkins, melon, squash, peppers, tomatoes, and eggplants. In greenhouse trials, scientists first screened composts made of several different materials. One product, made from brewery wastes, stood out as very effective. In the following year, the brewery waste compost was applied to two fields where fruit rot had been a big problem in the past. In one field, no disease occurred, and the growth and yield of pumpkins improved a great deal compared to untreated fields. In the other field, the brewery waste compost was not effective in suppressing fruit rot. Scientists think that perhaps there was just too much of the fruit rot fungi present. If brewery compost were added to this field for several more years, then the disease might be suppressed. Time will tell.

Source: Rangarajan, A., Tuttle McGrath, M., and Blomgren, T. (2001). Evaluation of two commercially available composts for managing phytophthora fruit rot of pumpkin. New York IPM Program, Cornell University, Ithaca, NY. <www.hort.cornell.edu/extension/commercial/vegetables/online/2001veg/pdfs/text/IPMfinalreportPumpkins.pdf>



RIDDLE

Why did the gardener bury money in his compost pile?

Answer: Because he wanted his soil to be rich!

Harvest Tips

To enjoy the highest quality flavor and texture from the vegetables you grow, harvest them at their prime maturity. If you are new to gardening and unsure about the best size or stage of maturity for your vegetable crops, try them at different stages and see what you prefer. The following are some general guidelines.

Pick tomatoes when they are fully colored but still firm. When picked at this stage, the tomatoes can be stored for 1–2 weeks. Overripe tomatoes quickly lose flavor as well as texture.

Snap beans are best when the bean is just beginning to develop in the pod. However, some people prefer them at a slightly more mature stage. When beans are full-size, they can be harvested and shelled.

Harvest summer squash when they are 4–7 inches long and the skin feels soft and rubbery. Once the skin begins to feel smooth or slick, they are past the best eating stage.

Harvest sweet corn as soon as the kernels are well-filled and milky. The tip of the ear within the husk should be blunt and not pointed. If in doubt, peel back the husk and examine the tip before you break off the ear. If it is not ready, just fold the husk back over the ear, and check again in a week or so.

Begin to harvest head lettuce and cabbage as soon as the heads become firm. If you have a number of plants, you may want to begin harvesting when they are immature, which will spread out the harvest over the growing season. Cabbages with firm heads can be given a quarter-turn twist to break part of the roots and slow growth. This can also help prevent splitting.

Beets, turnips, and kohlrabi are usually best at 2–2½ inches in diameter. They will grow larger if harvest is delayed, but may lose flavor and become woody.

Harvest winter squash (hubbard, acorn, butternut, etc.) when they are fully mature and the skin is hard and waxy. Winter squash can be left in the garden until cold or wet weather begins in the fall, but need to be harvested before temperatures remain below 40°F for several days at a time. Pick winter squash with the stems attached.



Section 2

Nutrition Resources

Table 9. Vegetables for Greater Nutrition

Sources: [FDA Standards of Industry \(2013\)](#); ESHA Food Processor V11.3.23 (2016)

Fruits and vegetables are good sources of vitamins, minerals, fiber. They are naturally low in calories, fat and cholesterol. When increasing fruit and vegetable intake it is important to eat a variety. The following tables help identify nutrient sources of seasonal vegetables and emphasize the benefit of eating a variety of vegetables.

½ cup serving contains 2-9% daily value (+); 10- 19% daily value (++), or ≥20% DV (*)

| Early or Cool Season Crops | | | | | | | |
|------------------------------|-----------|-----------|--------|-----------|---------|------|-------|
| Vegetable (Calories) | Vitamin A | Vitamin C | Folate | Potassium | Calcium | Iron | Fiber |
| Asparagus (15) | ++ | + | * | + | | + | + |
| Hardy Greens: | | | | | | | |
| Beet Greens ¹ (5) | * | ++ | | + | + | + | + |
| Collards (5) | ++ | ++ | + | | + | | + |
| Cress (5) | ++ | ++ | | | + | | |
| Endive/Escarole (5) | ++ | + | + | + | | | + |
| Mache (5) | * | ++ | | | + | + | + |
| Kale (15) | * | * | | | + | + | + |
| Mustards (8) | ++ | * | | + | + | + | + |
| Bok or Pak Choi (5) | * | * | + | + | + | + | |
| Tastoi (8) | * | * | ++ | + | + | + | + |
| Other Greens: | | | | | | | |
| Spinach, cooked | * | * | ++ | + | + | + | + |
| Spinach, raw(20) | * | * | ++ | + | + | ++ | + |
| Swiss Chard ¹ (6) | * | ++ | | + | + | + | + |
| Peas (60) | ++ | * | ++ | + | + | + | ++ |
| Lettuce: (5) | | | | | | | |
| Romaine | ++ | ++ | ++ | | | + | |
| Bibb | ++ | + | + | + | | + | |
| Iceberg | + | + | + | | | | + |
| Radish (10) | | ++ | + | + | | | + |
| Rhubarb (15) | | + | | + | + | | + |

¹ Cooking increases the available potassium (chard, beet greens) to 10-19% (++)

Energize Your Life

Gardening for a Healthier You 

½ cup serving contains 2-9% daily value (+); 10- 19% daily value (++), or ≥20% DV (*)

| Mid-Summer or Warm Season Crops | | | | | | | |
|--------------------------------------|-----------|-----------|--------|-----------|---------|------|-------|
| Vegetable | Vitamin A | Vitamin C | Folate | Potassium | Calcium | Iron | Fiber |
| Beans, green (16) | + | ++ | + | + | + | + | + |
| Bell Peppers[‡] (25) | * | * | + | + | | + | + |
| Cucumber (5) | | + | + | + | | | |
| Corn (60) | + | + | + | + | | + | + |
| Eggplant (10) | | + | + | + | | | + |
| Summer squash | + | + | + | + | + | | + |
| Tomatoes (15) | ++ | * | + | + | | | + |

| Late Summer or Warm Season Crops | | | | | | | |
|--------------------------------------|-----------|-----------|--------|-----------|---------|------|-------|
| Vegetable | Vitamin A | Vitamin C | Folate | Potassium | Calcium | Iron | Fiber |
| Beets (29) | | + | ++ | + | | + | + |
| Broccoli (10) | * | * | + | + | + | + | + |
| Brussels Sprouts (20) | + | * | + | + | + | + | + |
| Cabbage (11) | | * | + | + | + | | + |
| Carrots (26) | * | + | + | + | + | | + |
| Cauliflower[‡] (15) | | * | + | + | | | + |
| Kale (15) | * | * | | | + | + | + |
| Kohlrabi (35) | | * | + | ++ | + | + | ++ |
| Leeks (25) | ++ | + | + | + | + | + | + |
| Onions (30) | | ++ | + | + | + | + | + |
| Parsnips (50) | | ++ | ++ | + | + | + | + |
| Potato (60) | | + | + | + | + | + | + |
| Rutabaga (25) | | * | + | + | + | + | + |
| Sweet Potato[‡] (57) | * | + | + | + | + | + | + |
| Turnip (18) | | * | + | + | + | | + |
| Winter Squash & Pumpkin (32) | * | * | + | + | + | + | + |

‡ Harder to grow



FIVE STEPS TO FOOD SAFE FRUIT AND VEGETABLE HOME GARDENING

Food Safety and Your Garden Produce

Increasingly, foodborne illness outbreaks are being traced to lettuce, tomatoes, cantaloupe and other raw fruits and vegetables. Most foodborne illness is caused by the bacteria, viruses, molds and parasites (*or pathogens*) found on raw produce that is not carefully washed or prepared. Many of these can make you sick. ***These microorganisms are a natural part of the environment and can be a problem whether you choose to use organic or conventional gardening methods.***

It is also possible to get sick from contamination of produce with chemicals such as cleaning solutions, fertilizers, pesticides, and heavy metals (lead) and other chemicals that may be found in garden soil or well water.

FIVE STEPS TO FOOD SAFE GARDENING

Follow the five simple steps listed here and reduce the risk of someone suffering a foodborne illness after eating produce from your home garden.

STEP 1-PREPARE THE GARDEN FOR PLANTING

- Locate vegetable gardens away from manure piles, well caps, garbage cans, septic systems and areas where wildlife, farm animals, or the family pets roam.
- Use compost safely. Compost is the natural breakdown product of leaves, stems, manures and other organic materials-and also a source of pathogens. To be safe for gardening, your compost must reach a temperature of at least 130°F. Check the temperature with a compost thermometer. Do not use any animal waste, including pet waste, meat scraps or dairy product waste into your compost bin.

STEP 2- MAINTAIN THE GARDEN

Water source: *Be familiar with the quality and safety of the water source(s) you use in your garden.*

- If you get your water from a *municipal or public water system*, you can be sure that it is safe and potable (drinkable).
- Surface water (lakes, ponds, rivers and streams) can be polluted by human sewage or animal waste, fertilizers and pesticides from lawns and farm fields, or chemicals from industry.
- *Ground water* (which is the source for *well water*) is less likely to have microbial contaminants than surface water. If a well is your water source, you need to take a little more care to be sure that it is providing you with safe, clean water.
- Conduct a standard water test at least once a year to determine if your well water meets the standards of the Environmental Protection Agency (EPA).

Animals: *Animal waste can be a source of bacteria, parasites and viruses.*

- During the gardening season, keep cats, dogs and other pets out of the garden.
- Curtail nesting and hiding places for rats and mice by minimizing vegetation at the edges of your fruit and vegetable garden.
- Do not feed wild animals, even birds, near your garden. Fencing or noise deterrents may help discourage other wild animals.

STEP 3-HARVEST GARDEN PRODUCE

- Use clean, food-grade containers. **Food-grade** containers are made from materials designed *specifically* to safely hold food. Garbage bags, trash cans, and any containers that originally held chemicals such as household cleaners or pesticides are not food-grade.
- Use clean gloves (that have not been used to stir compost or pull weeds) or clean hands when picking produce.
- Brush, shake or rub off any excess garden soil or debris before bringing produce into the kitchen.

STEP 4-STORE GARDEN PRODUCE

- If you choose to wash fruits and vegetables before storing, be sure to dry them **thoroughly** with a clean paper towel. (NEVER wash berries until you are ready to eat them.)
- If you choose to store without washing, shake, rub or brush off any garden dirt with a paper towel or soft brush while still outside. Store unwashed produce in plastic bags or containers.
- Keep fruit and vegetable bins clean.
- When washing produce fresh from the warm outdoors, the rinse water should not be more than 10 degrees colder than the produce. If you are washing refrigerated produce, use cold water.
- Fruits and vegetables needing refrigeration can be stored at 40° F or less.
- Fruits and vegetables stored at room temperature (onions, potatoes, tomatoes) should be in a cool, dry, pest-free, well-ventilated area separate from household chemicals.

STEP 5-PREPARING AND SERVING FRESH GARDEN PRODUCE

More often than not, we eat fresh fruit and vegetables raw so we cannot rely on the heat of cooking to destroy pathogens that might be on our lettuce or tomatoes, it is important to prepare raw produce with food safety in mind.

- Always wash your hands first.
- Rinse fresh fruits and vegetables under cool, running, clean water even if you do not plan to eat the skin or rind.
- Never use soap, detergent, or bleach solution to wash fresh fruits or vegetables. These solutions can affect flavor and may not be safe to ingest.
- Avoid cross-contamination when preparing fruits and vegetables. *Cross-contamination* occurs when a clean work surface such as a cutting board or utensil (paring knife) or uncontaminated food is contaminated by dirty work surfaces, utensils, hands or food. Be sure to wash your hands (as well as the knife and cutting surface) before preparing any ready-to-eat foods such as salad, fresh fruit or a sandwich.
- If you have leftover produce that has been cut, sliced, or cooked, store it in clean, air-tight containers in the refrigerator at 40°F or less.

PRESERVING FRESH GARDEN PRODUCE

Canning, freezing or drying fruits and vegetables allows you to enjoy the fruits (or vegetables) of your labor all winter long. Choose and follow recipes and methods that are tested by a United States Department of Agriculture (USDA) endorsed source such as Cooperative Extension.

1. The National Center for Home Food Preservation offers tested recipes and procedures. <http://www.uga.edu/nchfp/index.html>
2. The USDA complete guide to Home Canning. <http://foodsafety.cas.psu.edu/canningguide.html>;
3. Home Canning.com (Ball/Kerr). <http://www.homecanning.com/usa/>

Project of the Universities of Rhode Island, Connecticut, Maine, New Hampshire and Vermont and funded by CSREES/USDA. Project 2003-5111001713

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Table 10. Vegetable and Fruit Storage Chart

The storage times listed in the chart below are intended as useful guidelines, not set rules.

| Product | Room Temp. | Refrigerate at 35° - 40°F | Comments |
|--|------------|------------------------------|---|
| Fruits | | | |
| Berries (blackberries, blueberries, strawberries, raspberries), and cherries | | 1-2 days | Before storing berries remove any spoiled or crushed fruits. Store berries unwashed in plastic bags or plastic containers; do not remove green tops from strawberries before storing. |
| Vegetables | | | |
| Artichokes, whole | 1-2 days | 1-2 weeks | |
| Asparagus | | 3-4 days | |
| Beans, green or wax | | 1 week | |
| Beets | 1 Day | 7-10 days | |
| Bok choy | | 2-3 days | |
| Broccoli, raab, repini | | 3-5 days | |
| Brussels sprouts | | 3-5 days | |
| Cauliflower | | 3-5 days | |
| Cabbage | | 1-2 weeks | |
| Carrots, parsnips | | 3 weeks | |
| Celery | | 1-2 weeks | |
| Corn on the Cob | | 1-2 days | For the best flavor use corn immediately. |
| Cucumbers | | 4-5 days | |
| Eggplant | 1 day | 3-4 days | |
| Garlic | 1 month | 1-2 weeks | |
| Ginger root | 1-2 days | 1-2 weeks | |
| Greens | | 1-2 days | |
| Herbs Fresh | | 7-10 days | |
| Leeks | | 1-2 weeks | |
| Lettuce, Iceberg | | 1-2 weeks | Store in a bag or lettuce keeper |
| Lettuce, leaf | | 3-7 days | Store in a bag or lettuce keeper |
| Mushrooms | | 2-3 days | Do not wash before refrigerator storage |
| Okra | | 3-5 days | |

Table 10. Vegetable and Fruit Storage Chart

The storage times listed in the chart below are intended as useful guidelines, not set rules.

| Product | Room Temperature | Refrigerate at 35° - 40°F | Comments |
|---------------------------------------|---|---------------------------|--|
| Vegetables cont' | | | |
| Onions dry (red, white, yellow) green | 2-4 weeks | 1 month | Store dry onions loosely in a mesh bag in a cool, dry, well-ventilated place away from sunlight. , Store green onions unwashed. |
| Parsley, cilantro | | 1 week | |
| Peas, lima beans, unshelled | | 3-5 days | Store unshelled in refrigerator until used. |
| Peppers, bell or Chile | | 4-5 days | |
| Potatoes | 1-2 months | 1-2 weeks | Store unwashed potatoes in a cool dry, well-ventilated area away from light, which causes greening. Storing in the refrigerator reduces sprouting. However, starches will turn into sugar (causing fried potatoes to darken.) For more information see "Options for storing Potatoes at home": http://info.ag.uidaho.edu/pdf/CIS/CIS1153.pdf |
| Radishes | | 10-14 days | |
| Rutabagas | 1 week | 2 weeks | |
| Spinach | | 3-7 days | |
| Squash, summer | | 4-5 days | |
| Squash, Winter | 1 week | 2 weeks | Cured winter squash will last 2 to 6 months in cool temperatures (55-60°F). |
| Turnips | | 2 weeks | |
| Tomatoes | To ripen tomatoes, store at room temperature away from sunlight | 5-6 days | For best flavor, store unwashed at room temperature and eat immediately when ripe. Tore fully ripened tomatoes unwashed in the refrigerator. |

Table updated by Stephanie Smith, WSU Extension Consumer Food Safety Specialist, March 2017.

Table adapted from materials prepared by the Food Marketing Institute and Cornell University Institute of Food Science.

http://www.fmi.org/consumer/foodkeeper/Food_Keeper_Brochure.pdf

Storing Food for Safety and Quality; Sandra McCurdy, Joey Peutz and Grace Whittman, PNW 612, University of Idaho, Sept. 2009; pages 18-19

http://extension.oregonstate.edu/fch/sites/default/files/documents/pnw_612_storingfoodforsafetyquality.pdf

Workbook Section 2

Lesson Recipes

Lesson 1: Seed Salad

Lesson 2: Spring Greens with Vinaigrette

Lesson 3: Plant Parts Salad

Lesson 4: Spicy Panzanella

Lesson 5: Healthy Harvest Salad

Lesson 1 Recipe: Seed Salad

Makes: 20 sample portions; or 6 snack portions

SOURCE: Adapted from Oregon State University *Growing Healthy Habits* Curriculum, page 223.

This is a tasty snack that lets you experience how much energy is inside seeds.

Ingredients

½ cup un-popped popcorn + 2 tablespoons vegetable oil

OR

1 bag microwave unsalted popcorn

1 cup toasted sunflower seeds*

1 cup toasted pumpkin seeds

1 cup dried cranberries

*(optional) If popcorn and seeds are both unsalted, add up to ¼ teaspoon of salt.

Directions

1. Place large pot on the stove, or plug in electric skillet. If using microwave, place bag in microwave for approximately 3 minutes or until popping slows and skip to step 6.
2. Add the oil and 3 popcorn kernels and cover the pot or skillet.
3. Turn the burner on to medium high, or the skillet on to high.
4. When you hear the kernels pop, add the rest of the popcorn and replace the lid.
5. Swirl the pot as it pops. When the popping starts to slow, turn off the heat and let the pot/skillet cool, or if using a stove, place the pot on a cool flame-proof surface until the popping stops.
6. After the popcorn is popped, pour into large bowl. Mix in the sunflower seeds and cranberries.
7. If needed, add up to ¼ teaspoon of salt.
8. Serve.



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Lesson 2 Recipe: Spring Greens with Vinaigrette

Makes: Per serving

Source: WSU Extension – Pierce County Food \$ense

Ingredients

- 2 cups of greens per person
- 1-2 tablespoons of salad dressing (below)

Directions

1. Make sure greens are washed and dry.
2. Place appropriate measure of greens in mixing bowl to allow all participants to have a sample.
3. Measure appropriate amount of vinaigrette for number of samples.
4. Toss until greens and dressing well mixed.
5. Serve.



Orange Zest Vinaigrette (Makes about ¾ cup)

Ingredients

- 1/2 cup olive oil
- 2 tablespoon grated orange zest
- 1 tablespoon red wine vinegar
- 1 tablespoon balsamic vinegar
- 1 tablespoon orange juice
- Coarse salt to taste
- Freshly-ground black pepper to taste

Directions

1. Mix oil, zest, red wine vinegar, balsamic vinegar, orange juice and salt and pepper to taste in small bowl.
2. Can be made a day ahead and refrigerated. Let Vinaigrette come to room temperature before using.

Honey Dressing (Makes about ¾ cup)

Ingredients

- 2 tablespoons clear honey
- 4 tablespoons of lemon juice
- 6 tablespoons of olive oil
- 1/2 teaspoon prepared yellow mustard
- 1/2 teaspoon of salt
- 1/8 teaspoon black pepper
- Optional: chopped, fresh herbs (mint, basil, savory)

Directions

1. In a small mixing bowl, beat all the ingredients together with a fork until they are well combined **OR**
2. Put all ingredients in a screw-top jar. Cover the jar and shake it for 10 seconds.
3. Use as required.

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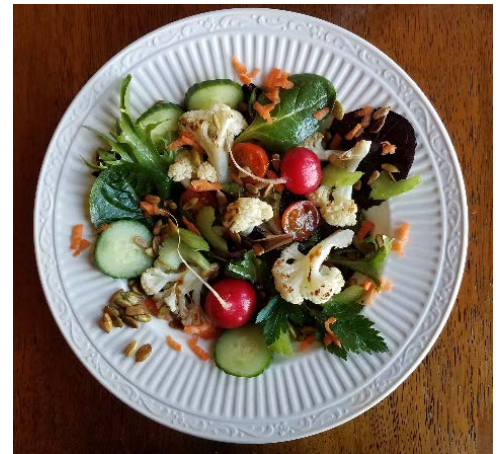
Lesson 3: Plant Parts Salad

Adapted from: *Growing Healthy Habits Curriculum* (2012), Oregon State University SNAP-Ed

Makes: 6 cups. Sample size serving: ¼ cup

Ingredients

- 3 cups **leaves** (lettuce, spinach, chard)
- ½ cup **roots** (beets, carrots, radishes)
- 2 cup **flowers** (broccoli, cauliflower)
- ½ cup **stems** (celery, broccoli stems, chard stems)
- 1 cup **fruit** (apple, tomato, cucumber)
- 2 Tablespoons **seeds** (sunflower seeds, peas, beans)



Dressing

- 2 tablespoons **fruit juice or vinegar** such as lemon, orange or apple cider vinegar
- 2 tablespoons oil
- 1 clove garlic, minced

Directions

1. Wash all fruits and vegetables.
2. Tear leaves into small pieces. Place in large bowl.
3. Cut or grate roots, stems, flowers and fruit into bite-sized pieces. Add to bowl.
4. Add seeds to bowl.
5. Make dressing by combining oil, liquid, and garlic in a small container with a secure lid. Shake until well-mixed.
6. Pour dressing over salad and toss lightly.

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Lesson 4: Spicy Panzanella

Adapted from: WA State Farmers Market Association
(www.wafarmersmarkets.com)

Makes: 4 servings; or 16 sample servings

This fun Italian salad is a great way to use old bread. The dry bread absorbs the vegetable juices and dressing. It's perfect for using summer tomatoes, cucumbers and peppers.

Ingredients

1 large English cucumber, chopped
4 slices of old bread, cut into 1-inch pieces
2 fresh tomatoes, chopped
1 jalapeno pepper, remove seeds and white ribs; finely chopped
Juice of 1 lime
2 tablespoons olive oil
Salt and pepper to taste

Directions

1. Select old bread that is slightly crusty. Old bread helps absorb the juices from the vegetables and dressing. Cut bread into 1 inch cubes. Set aside.
2. Reserve 2 tablespoons of the chopped tomatoes for use in the dressing.
3. Place chopped tomatoes and cucumber pieces into a large bowl. Sprinkle lightly with salt and pepper. This will help draw out the vegetable juices. Toss vegetables.
4. In a small saucepan on medium heat, sauté the pepper with a few drops of olive oil for about a minute. Add the reserved tomatoes and a tablespoon of water. Cook for another 2 minutes until the tomato juices release.
5. Once the water evaporates, remove from heat source and remove tomato-jalapeno mixture to a cutting board. Chop it finely and put it back into the pan with the lime juice and olive oil.
6. Mix the bread and vegetables with the dressing. Adjust salt and pepper if needed. Let the salad set at room temperature for a few minutes so that the bread can soak up the juice. It's ready to serve.



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Lesson 5 Recipe: Healthy Harvest Salad

Source: WSU Extension Food \$ense

Makes: per serving

Ingredients:

- 2 cups bite-sized pieces of Italian kale (flat leaf) or other hearty greens
- ¼ cup diced roasted butternut (or other winter type) squash
- ¼ Honeycrisp or other sweet/tart apple
- 1-2 tablespoons Apple Cider Vinaigrette (below)
- 1 tablespoon toasted sunflower or pumpkin seeds (optional)



Directions

1. Preheat oven to 425 degrees.
2. Wash hands with warm soap and water; wash vegetables under running water. Drain and pat dry.
3. Peel squash; removed seeds and strings in core. Slice cross-wise into 1/2 inch half rings; and then dice each ring into ½ inch pieces.
4. Place on baking sheet; spray lightly with nonstick cooking spray and toss. Roast diced squash 20 minutes at 425 degrees; then turn over and roast for 10-15 more minutes until roasted (turning brown).
5. Meanwhile, remove stems kale, breaking into bite-sized pieces and place in mixing bowl.
6. Cut apple in half, core, and dice into ½ inch pieces.
7. Add apples into bowl; toss with vinaigrette; top with roasted squash (great use of leftover squash) and seeds (optional)

Apple Cider Vinaigrette

(Makes: 3/4 cup)

Ingredients

- ¼ cup Apple cider/juice concentrate
- 2 tablespoons apple cider vinegar
- 4 Tablespoons vegetable oil
- ¼ teaspoon salt
- ½ teaspoon minced garlic

Directions

1. Place all ingredients into jar or container that will not leak.
2. Put the top on tightly.
3. Shake jar.
4. Shake each time before you put it on a salad.

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Section 3 Community Resources

Energize Your Life! Gardening for a Healthier You

Community Resources:

- County resources may be available for free or low cost compost composed of bio-solids. Check with your county Public Works and/or Solid Waste Division.
- Volunteers can often be found through Horticulture teachers and their students at high schools, community colleges.
- Local WSU Master Gardeners (MG) often accept special projects as part of their training. Check your local WSU Extension website to submit applications for MG assistance.
- Lowes, Home Depot and Fred Meyer often donate materials for community garden groups and/or offer small grants to support the construction of new gardens for non-profit or community organizations.
- Consider co-op gardening efforts with neighbors and community groups. This saves time, effort and money and encourages community building.

Horticulture Resources:

1. WSU CAHNRS and WSU Extension, **WSU Hortsense**
<http://hortsense.cahnrs.wsu.edu/Home/HortsenseHome.aspx>
2. WSU Master Gardeners,
<http://mastergardener.wsu.edu/>
3. WSU Gardening in Washington State
<http://gardening.wsu.edu/>
4. National gardening Association
<https://garden.org/>

Seed Resources:

Some seed companies will donate seeds and have a place on their website to make a request. Many companies will donate seeds, if you pay for shipping. Seed catalogs are free by phone or written request. It is best to make requests after the first of the New Year.

Most healthy seeds are viable and will sprout and grow for up to 3 years beyond the stamped date on the seed packet. To test seed viability, germinate a small selection of seeds from the packet in a damp paper towel (*be sure to keep the towel moist at all times*) or in a shallow seeding tray with a starting medium or seeding soil mix.

This list of seed sources is designed to you locate seeds. It is not meant to endorse any of these businesses or detract from any businesses not listed.

Seed Companies:

Burpee Seed Co
W. Atlee Burpee & Co
300 Park Ave
Warminster, PA 18974
1-800-888-1447
<http://www.burpee.com/>

Ed Hume Seeds
Address: 11504 58th Ave E
Puyallup, WA 98373
(253) 435-4897
<http://www.humeseeds.com/>

Irish Eyes Seed Co.
5045 Robinson Canyon Rd.
Ellensburg WA 98926
509-933-7150 *press 1*
Web: www.irisheyesgardenseeds.com
Email (Retail): customerservice@irisheyesgardenseeds.com
Email (Wholesale): wholesale@irisheyesgardenseeds.com
<http://irisheyesgardenseeds.com/>

Johnny's Seed Co.
1-877-564-6697
<http://www.johnnyseeds.com/>

Seed Savers Exchange
3094 North Winn Road
Decorah, Iowa 52101
(563)382-5990
http://www.seedsavers.org/catalog?qclid=CICO_5blh9ACFUpNfgodB8IAdg

Territorial Seed Co.
PO Box 158
Cottage Grove, OR 97424
Phone: 800-626-0866
Fax: 888-657-3131
Customer Service/Gardening Questions: 541-942-9547
Toll Free: 800-626-0866
Customer Service Email
info@territorialseed.com
<http://www.territorialseed.com/>

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