



Bear Creek Garden Association Handbook Mission Statement The Bear Creek Garden Association runs the vibrant Charmaine Nymann Community Garden at Bear Creek Regional Park, where members grow organic vegetables for their families, friends, and local charities. The Association teaches gardeners and land managers to use organic gardening methods and environmentally safe, chemical-free weed and pest control, and raises funds to bring in a large herd of cashmere goats annually for weed control, soil regeneration and wildfire mitigation in the public park land surrounding the garden.

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The Board of Directors meets monthly from February through November.

Please notify the Board (bearcreekgardenscs@gmail.com) of any of the following conditions:

- You will be gone more than two weeks
- You have to give up gardening and abandon your plot
- You need advice for weed or bug control
- You plan to use power equipment (you must sign a special release)
- You find a leak in the water system
- The gate has been left unlocked (please lock it)
- You need a new key or badge
- You will not be able to meet your agreed to volunteer time and need to reschedule it
- You see a job in the garden that you are qualified to help with

Please notify the Bear Creek Garden Association (or the Colorado Springs Police Department at 719-385-2100 or 911, if necessary) if you see anything that is dangerous or threatening to you in the park. We encourage you to work in the gardens only when another gardener is present and leave the garden at dark.

Please do not leave tools or equipment on your plot as this violates our agreement with the El Paso County Parks Department. Hoses and watering cans stored neatly on individual plots are permitted.

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BEAR CREEK GARDEN ASSOCIATION CALENDAR 2022

FEB	Winter Potluck for Returning Gardeners – Canceled because of Covid-19 closures
MAR 12	Garden Class - "Growing Vegetables at the Charmaine Nymann Community Garden - Tips for Success" at Bear Creek Nature Center
APR 9-10	Orientation Meeting for New Gardeners – Program will be presented on Zoom. Details to be announced.
APR	County tills the garden Volunteers stake plots and define aisles
APR 16	Garden opens - weather permitting Returning Gardeners check in at the garden between 9:00 a.m. and 12:00 noon. Purchase keys and badges. Can order straw. New Gardeners check in. Purchase keys and badges and can order straw. Onsite orientation (required). Gardeners will be scheduled in small groups starting at 1:00 p.m. Planting begins - peas/spinach/lettuce/beets/kale/potatoes
MAY	Water is turned on early in the month by the Parks Department. Average last killing frost is May 15th. Ladybugs and killdeer begin returning to the garden. Wind and cold protection essential for tender plants. Plant beans/corn/carrots after the soil warms up.
MAY 28	<u>Plant and Tool Sale</u> Bring extra plants and tools to donate between 8:00 and 9:00 a.m. Sale runs from 9:00 a.m. to 11:30 a.m. Proceeds go to the Goat Fund.
JUN	Plant squash/cucumbers after Memorial Day (after June 1). Plant tomatoes/peppers/eggplant/basil (use cold protection). Begin harvesting greens. Keep plot moist as heat increases; Spread straw mulch. Daylight lengthens – garden is open until dark.
JUL	Cheyenne Mountain Zoo and Silver Key both start picking up donated produce from tarps by the Truck Gate later in the month. Keep after weeds and bugs; Plant late season peas and spinach.
JUL 15	After this date, the gates must be locked at all times.

JUL 31	Last day to spread straw mulch on plots.
AUG	Danger of hail is greatest the first week of August. Shorter daylight – garden closes at dark.
AUG 14	Summer Potluck – Gold Hill Mesa 12:30 p.m. Details to be provided.
SEP	Dumpsters arrive at Labor Day for garden refuse. Zoo and Silver Key continue to pick up excess produce until garden closes. Frost is possible from mid-month – cover the tomatoes! Continue harvesting greens and root crops.
SEP 14	Bear Creek Garden Association Annual Meeting 7:00 p.m. Cheyenne Mountain Library, 1785 S. 8th Street, Ste. 100
OCT	Workdays: October 1, 8, 9, 15. Average first killing frost is October 10. Garden mix/manure is delivered to plots of gardeners who ordered it. <u>All plots must be cleared by the end of the day on October 15.</u>
OCT 15	Garden Closes

Workdays are scheduled for the third Saturday morning each month.

May 21

August 20

June 18

September 17

July 16

October 1, 8, 9, 15

BEAR CREEK GARDEN ASSOCIATION

In Cooperation with
El Paso County Parks

Garden Rules 2022

1. Membership Obligations

- a. **Membership in Association.** All gardeners who hold a garden plot by having paid their annual garden fees are members of the Bear Creek Garden Association (herein referred to as “BCGA”). Garden plots (herein referred to as “plot” or “plots”) are registered with the members leasing the plots who are paying the annual rental fees. Association members may not sublet all or part of their plots. Keys to the gardens may be issued only by the association and may not be duplicated or transferred to persons who are not members.
- b. As a community garden association, BCGA promotes education, volunteerism, camaraderie and a spirit of cooperation among its members. Members shall conduct themselves in a pleasant and civil manner and shall respect the rights and safety of other members. Failure to comply with these principles and the rules contained herein may result in the revocation or non-renewal of membership by the BCGA Board of Directors.

2. Plot Assignment and Fees

- a. Garden fees are determined by the BCGA Board of Director (herein referred to as “Board”) annually. Plot assignments are made by the Board with returning gardeners having an opportunity to reserve a plot as set forth below.
- b. **Returning Gardeners:** In January, registration forms for the upcoming garden season will be sent to gardeners who have complied with BCGA rules the previous year. Returning Gardeners may reserve a plot by returning the forms and fees to BCGA by the last day of February.

3. New Gardeners

- a. All other persons wishing to garden at the Charmaine Nymann Community Garden in the upcoming gardening season shall (after completing the registration forms and paying the plot fee and cleanup deposit) be assigned plots on a first come, first served basis. Registration for New Gardeners begins on March 1.
- b. **Deposit:** A \$25.00 deposit will be required from all first time gardeners and any other gardeners who did not sufficiently clean their plots from the previous gardening season. In the event the plot for which the deposit was paid has been left in an acceptable condition on Closing Day, as determined by the Board, the deposit shall be refunded to the gardener who paid the initial fee. If the plot is not sufficiently cleaned, as determined by the Board or a representative thereof, the deposit shall be forfeited.
- c. **Badges and Keys:** Gardeners must purchase badges and wear or have them in their possession when in the garden. Keys to the garden gate locks will be sold

on Opening Day or will otherwise be available for purchase from Board members.

4. Maintenance hours

- a. Every person who rents a plot at the Charmaine Nymann Community Garden must complete a minimum of FOUR hours of maintenance work (other than on their own plot and the aisles around their plot) during the season. The tasks to be completed shall be determined by the Board on an as-needed basis, but shall, generally, consist of weeding and/or cleaning abandoned plots, caring for charity plots and weeding/cleaning inside and outside the garden fence in areas for which BCGA is responsible, including the landscaped area north of the main parking lot.
- b. Hours spent assisting another gardener when that the gardener is ill or out of town do not count as volunteer hours.
- c. Gardeners who fail to complete their maintenance work obligation may be assessed a non-refundable fee of \$40.00 payable before the gardener is permitted to re-register for a plot at the Charmaine Nymann Community Garden.

5. Familiarity with County Rules and Promise to Comply

- a. By gardening at the Charmaine Nymann Community Garden, each gardener represents that he/she has read, and agrees to comply with, these Rules, and also with the El Paso County Parks Charmaine Nymann Community Garden Rules (herein referred to as "Park Rules") attached hereto as Exhibit A. Failure to comply with these Rules may result in forfeiture of any and all fees and deposits paid, and prohibition from further gardening at the Charmaine Nymann Community Garden.

6. Plot Preparation

- a. Plot Boundary: In order to make weeding and working between plots easier, each gardener must set the plot boundaries into their plot 12" from the BCGA boundary stakes where plots touch each other to create 24" wide paths between plots. Please do not permanently remove stakes as they are reused each year.
- b. Layout of Rows: The garden slopes from west to east. Plant rows must run north-south to prevent erosion.
- c. Raised Beds: Raised beds and/or lowered walkways or ditches or trenches between beds of any kind are not permitted. Berms inside the plot must not be higher than 3".
- d. Berm. Each gardener is required to place a 3" to 4" high soil berm (no higher than 4") around the perimeter of the plot to keep water from running off of the plot and into the aisles when plants are watered. During heavy rain storms the berm will also keep rainwater running down the aisles from flooding into plots and washing out plantings. Gardeners must not take dirt from aisles to create berms.

7. Plot Construction

- a. BEFORE BEGINNING ANY CONSTRUCTION PROJECT, PLEASE CONTACT THE BOARD.
- b. Structures: Structures are allowed on plots if:
 - i. they directly protect the plant(s), and are less than 3' high;
OR
 - ii. they directly support the plant(s) and the stakes or supports are no higher than the North parking lot fence (5') and consist of materials that are no heavier than 2x2s. U and T posts are also permissible. An exception is made only for bean poles and bean teepees, which may be no more than 7 ½' tall.
 - iii. orange plastic construction fencing, or similar support material, is not permitted.
- c. Materials:
 - i. Plastic: Plastic plant protectors may be used to enclose INDIVIDUAL plants, not groups of plants. Plastic may NOT be more than 2' high. Walls-o-Water and plastic milk jugs are recommended.
 - ii. Tunnels or Row Cover Structures: Row covers that otherwise comply with the rules may be used but must not be wider than 4' or higher than 3'.
 - iii. Row Cover Material: Only Remy or non-plastic row cover material can be used.
- d. Hail Protection:
 - i. Wire mesh hardware cloth is strongly recommended. Hail cloth or sun screen cloth is also permitted. Earth tone (green or brown) fabric sold as hail cloth must be horizontally installed no more than 5' high and must be well secured. Hail cloth should not extend down the sides of the plants. For esthetic reasons, black or white hail cloth is not allowed, and any hail cloth protection which is higher than 3' can not cover more than one-quarter of the gardener's plot.
- e. Ground Cover: Landscape fabric is allowed; plastic is not. Mulch is preferred for weed management. (See II(F)(3)(c) below.)

8. Soil Amendments and Mulches

- a. Polymers: Polymers are not allowed as a soil amendment because they do not decompose and cannot be removed by future gardeners.
- b. Fertilizers: Commercially sold fertilizers and soil amendments are permitted so long as they are worked into the soil and do not result in a raised bed or plot. Manure used in gardens must be aged (no odor). Homemade compost is not permitted.
- c. Permitted Mulch:
 - i. Straw may be used to control weeds and retain moisture. All straw must be spread on the plot no later than July 31st to ensure that it will start to

decompose by the end of the gardening season. All straw must either be removed or incorporated into the soil at fall cleanup.

- ii. Cotton Burr Compost is permitted.
- iii. Weeds pulled in and around the plot may be laid down in a thin layer on the plot as mulch. However, vines, heavy stalks or roots that would interfere with rototilling in the fall must be removed from the garden and not used as mulch.
- iv. Prohibited Mulch: Leaves, newspaper, wood chips, shredded bark, gorilla hair and any other wood-based mulch are prohibited.

9. Vegetable Garden

- a. Plots are to be used primarily for growing vegetables. Some flowers, preferably those which deter pests (such as marigolds and nasturtiums) or attract pollinators may be grown.
- b. Prohibited Crops: NO POPCORN, NO SUNFLOWERS AND NO MARIJUANA. Because varieties of corn will cross-pollinate with and damage sweet corn, popcorn may not be grown in the gardens. Sunflowers are not permitted due to shading, difficulty of root removal and toxicity to soil. The BCGA does not allow marijuana to be grown on its garden plots. Gardeners must request board approval before planting any ornamental plant that is poisonous.
- c. Cover Crops: Gardeners may not use “cover crops”. Cover crops such as clover, alfalfa and buckwheat are planted thickly by farmers and tilled under to improve the soil. However, in the community garden setting these crops tend to self-propagate and spread over the entire garden.
- d. Treated Seeds: Seeds treated with pesticides or fungicides are not allowed in the Charmaine Nymann Community Garden. This includes transplants started at home from treated seeds. Please check seed packages, catalogs and seed racks carefully before you buy seeds.
- e. GMO: All GMO (Genetically Modified Organism) crops are prohibited.

10. Plot Maintenance

- a. Aisles
 - i. Aisles are to be kept dry, clear of all plants and hoses, free of weeds, clean and level. No foreign matter, manure or straw shall be added to them.
- b. Weeds and Pest Control:
 - i. Control: Gardeners are responsible for keeping their garden plots, adjoining aisles and walkways free of weeds. In addition, gardeners with plots adjoining the fence are responsible for keeping the fence line and a one-foot strip outside the fence clear of weeds. If the weeds on any plot are not controlled in accordance with these rules, the gardener will be

notified. If the gardener does not rectify the problem, the Board may deem the garden abandoned and the gardener's cleanup deposit will be forfeited.

- ii. Non-Organic Pesticides, Herbicides, and Fungicides are NOT PERMITTED. This includes any product containing Diazinon, Malathion, Rotenone, Neonicotinoid pesticides or Sevin. The gardens are organic when it comes to pesticides. No hose-end sprayers are to be used for disbursement of organic pesticides. (A list of organic products will be discussed at the spring garden class and orientation meeting and also appears in your handbook.)
- iii. Watering: All watering is to be done using a watering can or a hand-held hose equipped with a positive shut-off nozzle. Ditch or flood type irrigation is prohibited. Soaker hoses are prohibited. No sprinklers are allowed. All water must be turned off before you leave the gardens. Keep water from aisles to prevent them from becoming muddy and slippery. Please report any leaks to the Board.

Before the full water system is turned on in the spring, the white faucets in the center of the main aisles may be turned on, weather permitting, to enable gardeners to use watering cans to carry water to early plantings.

11. Watering Hours

- a. To make the most efficient use of water, as recommended by both Colorado Springs Utilities and Denver Water, no watering with a hose is allowed between the hours of 10 am and 4 pm.
- b. Between 10:00 a.m. and 4:00 p.m., only watering with a watering can is permitted.
- c. Only during spring planting, gardeners may use a hose with a positive shut-off to initially fill Walls-o-Water between 10 a.m. and 4 p.m.
- d. Gardeners may water with one hose for a maximum of 30 minutes per day for a full plot and 15 minutes per day for a half plot. Please note that this is the maximum time permitted for watering. Watering the maximum permitted time every day is rarely necessary and can be detrimental to your vegetables.
- e. Hose: Remove the hose from the faucet each time you finish watering and before you leave the garden. All leaking hoses must be repaired. Please make sure you have a good washer at the faucet end of your hose and in your nozzle or wand. You are responsible for having these washers in place. Do not ever let your hose leak into the aisles or around the faucets because this creates a hazard.
- f. Tool Storage: Pursuant to county rules, NOTHING is to be stored on your garden plot except your hoses and one watering can. The watering can must be stored on the ground inside the plot and secured so that the wind will not blow it

around. During spring planting, bags of soil amendments and bales of straw may be kept on plots prior to being spread.

- g. Decorations. Decorations, signs and garden ornaments are not permitted on plots. Any items, including tools, left on a plot may be removed by the board to ensure compliance with El Paso County rules.
- h. Washing Produce and Hands: Do not wash produce or hands at the faucets because it will make the aisles muddy and slippery. Use your hose and wash them on your plot or wash them at home instead.
- i. Refuse and Trash: Remove all refuse and trash from your plot. Take it with you for disposal each time you leave the garden. DUMPING OUTSIDE OF THE GARDENING AREA IS PROHIBITED EXCEPT IN DUMPSTERS PROVIDED BY BCGA. Dumpsters are provided only from Labor Day until the gardens close in mid-October.
- j. Plant Diseases and Corn Smut: Plant diseases can damage your garden and spread to other gardens. Carefully remove corn smut or diseased or insect infested plants, place in a plastic bag and take home for disposal. Please refer to the Charmaine Nymann Community Garden Handbook for descriptions and information about plant diseases.

12. Plot Cleanup

- a. Fall Cleanup: The deadline for fall cleanup is Closing Day. Gardeners who do not comply will forfeit their deposit and may not be permitted to renew their gardening privileges. All large or heavy plants (corn, broccoli, amaranth) and all weeds, vines and roots must be removed by this date. Straw used as mulch, light plant debris and any amendments (compost, garden mix, manure) may be left on the plot to be tilled in after the garden closes. Gardeners should not delay fall cleanup until the last minute because the dumpsters become overloaded, inconveniencing everyone.
- b. Garden Equipment: Any garden equipment (including tools, hoses, Walls-o-Water, tomato cages, fencing, weed fabric, etc.,) left in the garden at the end of the day the garden closes becomes property of the BCGA.
- c. Composting: Compost piles and in-ground compost pits and trenches are not allowed. Do not bury diseased or insect-infested plants or “viney” roots.

13. General Rules

- a. Members and Guests: Guests are permitted in the gardens only when accompanied by a member who is responsible for them.
- b. Gates: Gates must be locked at ALL times after July 15th. At all other times, please make sure to lock the gates if you are the last to leave the gardens.
- c. Children: Children must be properly supervised and kept out of other people’s gardens. Running in the aisles is not permitted.

- d. Pets: Pets are not allowed in the gardens at any time and may not be tied to the outside of the garden fences. This does not apply to people requiring the assistance of a companion or seeing eye dog.
- e. Wheeled Vehicles: The only vehicles allowed within the gardens are carts, wheelbarrows, strollers or wheelchairs.
- f. Produce: Produce is to be used for private consumption only. No produce from the gardens may be sold, as that would violate our agreement with El Paso County.
- g. Unconditional Release: Pursuant to the BCGA agreement with El Paso County, any adult (18 and older) participating in garden activity must sign an Unconditional Release (liability waiver) form, provided by BCGA, before doing any work in the garden. Plot owners are responsible for making sure anyone they bring to the garden as a helper has a signed and notarized Unconditional Release on file with BCGA before the helper does any work in the garden. Friends and family members who ONLY water a plot while the plot owner is out of town are not required to sign an Unconditional Release.

Individuals who have a signed Unconditional Release on file with BCGA may operate a rototiller inside the garden. Motorized weed whackers are prohibited inside the garden.

14. Abandoned Plots

- a. Plots not under cultivation by June 1st may be declared by the Board to be abandoned and assigned to another gardener. Plots not worked for more than 15 days without the gardener informing the Board will be considered abandoned, and the produce forfeited. A gardener who abandons their plot will forfeit any deposit and all other fees paid related to that plot. For purposes of this provision, a plot will be deemed “not worked” when no noticeable activity, including watering and weeding, has occurred. If the Board has determined that a plot has not been worked, it will send notice to the gardener of the plot, indicating that the gardener has a specified time period to rectify the condition or the garden plot will be considered to be abandoned.
- b. Allocation of Unused Plots. Gardeners may apply to the Board for the opportunity to rent any plot which is not under cultivation by June 1st. Regular fees apply. Any plot remaining unplanted after July 1st may be rented at a reduced rate to be determined by the Board.

15. NO SMOKING OR TOBACCO OF ANY KIND IS PERMITTED IN THE GARDEN.

16. Gardening Hours

- a. Gardening is allowed during daylight hours only. No one is permitted in the garden after dark.

17. Notices

- a. For purposes of these rules, any notice required is deemed given if:
- b. To the Gardener: If notice is given in writing and sent by regular mail or email to the address which was supplied by the gardener on the registration form or in a notification of change of address. (In the event more than one gardener is sharing a plot, notice will be sufficient if sent to the first gardener listed on the registration form);
- c. To BCGA: If notice is given in writing and sent by regular mail to BCGA , P.O. Box 38326, Colorado Springs, CO 80937-8326 or by email to bearcreekgardenscs@gmail.com.

18. Interpretation of Rules

- a. These Rules have been developed over the years to benefit the gardens and gardeners. They may be modified from time to time at the discretion of the Board of the BCGA. In the event of a disagreement about the interpretation of any rule, the gardener may present his/her concern to the Board for consideration.

19. Rules Violations

- a. Violations of these Rules may result in the loss of gardening privileges.

20. Facility Use Agreement

- a. BCGA operates the garden pursuant to a Facility Use Agreement with El Paso County. Please respect Bear Creek Regional Park. Do not toss weeds or trash over the fence onto county property and do not pick, dig or remove any flowers, grasses or other vegetation from county property outside the garden.

(Last revised 11/2/21)

EL PASO COUNTY PARKS RULES 2022
CHARMAINE NYMANN COMMUNITY GARDEN

EXHIBIT A

1. Alcoholic beverages are not allowed in the park.
2. Posts of any kind higher than the front (North) parking lot fence are not permitted. The only exception to this rule is that stakes supporting pole beans may be seven and one-half feet tall.
3. Green horse manure is not allowed because of the odor.
4. Watering practices must comply with the Charmaine Nymann Community Garden Rules (a hand-held hose must be equipped with a positive shut-off nozzle).
5. Compost piles are not allowed in the gardens.
6. Large amounts of wood, plastic or other garden construction that show above the fence line and/or beyond the gardens are not permitted.
7. Storage of tools, equipment, or trash is not permitted on the garden plots.
8. Driving off roads is not allowed.
9. Dumping of trash or weeds outside or inside the garden fence is not allowed.
10. Please use the dumpsters provided by the BCGA. (The dumpsters are only available from Labor Day through Closing Day).
11. Planting outside the garden fence is not allowed. Plants on the inside may be allowed to climb the fence. All plant residue must be cleaned off by Closing Day.
12. All gardeners must have signed an Unconditional Release liability waiver.
13. Grass clippings are not allowed in the gardens.
14. Gardeners with fence plots are responsible for keeping the weeds down for 1' outside their fence line.

(Last revised 11/9/20)

Vegetable Varieties Found to Grow Well at The Garden

NOTE: Raised beds are not appropriate for use at the garden. They dry out too fast in our dry climate and wastes water.

BEANS	Preferably planted after June 1 when the soil is warm. All snap and wax beans do well here, either bush or pole. Try to plant mosaic resistant varieties. VENTURE, a newer Blue Lake type, is a cold weather, short maturation variety that will germinate in colder soil than most beans. It is available from Johnny's seeds or Park Seed Company. Short maturity shell beans also produce well. Lima beans really do not do as well; however, check for open pollinated, short season, 45-day lima bean seeds that will mature here.
BEETS	All beets seem to do well here. DETROIT DARK RED is a very good variety, both for greens and the beets.
BROCCOLI	Protect young transplants with some type of covering or cloche. Plastic 1 gallon milk cartons with the bottom cut out or mini-greenhouses from Rick's Garden Center work well. Be sure to anchor them to the ground with wires or plant stakes. Remove the protection when the transplant is established or the weather turns hot. Plant anytime in the spring. GREEN COMET variety loves it here.
BRUSSELS SPROUTS	Grows like broccoli. Aphids have a real affinity for them. Spray with pyrethrin when they become evident.
CABBAGE	Grows like broccoli and Brussels sprouts. All varieties do well here. COPENHAGEN MARKET is an excellent green one.
CAULIFLOWER	Grow like broccoli, Brussels sprouts, and cabbage. EARLY SNOWBALL and SNOW CROWN seem to do well here.
Note: BROCCOLI, CABBAGE, and CAULIFLOWER may be planted in mid June to July 1 for a fall crop.	
CARROTS	Plant early in the spring. Cover bed or row with floating row covers or burlap until sprouted to hold in the moisture. Water daily until sprouted. Care should be taken with the burlap as you can pull up the carrot shoots that have grown into the burlap if you leave it on too long. You will not have this problem with floating row covers. Remove the cover when the carrots are sprouted. Do not allow the baby carrot shoots to dry out. Carrots do very well here. Interplant with dwarf marigolds to deter root maggots. NANTES and CHANTENAY varieties as well as the short stubby ones like THUMBELINA do well.

CORN	<p>Plant after June 1 or after the ground is thoroughly warm. EARLY SUNGLOW, GOLDEN CROSS BANTAM, GOLDEN BANTAM, GOLDEN JUBILEE, EARLY KING, and other SU (old fashioned sweet com which will germinate in cooler soil) varieties do well.</p> <p>PEACHES AND CREAM, CANDY CORN, MIRACLE, and other SE (sugar enhanced varieties like it warmer than the SU's, but do not need isolation from other sweet com). ILLINI EXTRA SWEET, EARLY ILLINI EXTRA SWEET, SWEET'N'TENDER, and other SH2 (super sweets that must be isolated from other com and have it hot) varieties will not do well here due to our cool summer evenings. SILVER QUEEN and IOCHIEF do not mature here regularly.</p> <p>Plant com in an 8" deep trench 3' apart. Cover with 1" of soil. As the com grows, fill in the trench. When the trench is full and the com well established thin to 1' apart and hill the com twice to prevent its falling over in wind and rain. Watch for com smut, large black puffy balls of soot in the stalks, tassels, and ears during hot, wet weather. Remove these while still green; place in a plastic bag and dispose of at home. It is a very contagious fungus.</p>
CUCUMBERS	Plant after June 1 in warm sun. Choose mosaic resistant varieties.
EGGPLANT	Protect young plants with some type of plastic jug or Wall O Water protection. Plant after June 1. DUSKY, Park's WHOPPER, and the Japanese types do well.
GREENS (Spinach, lettuce, chard, mustard, etc.)	Successive plantings of these may be done so you have fresh greens until the garden closes in the fall.
KOHLRABI	Treat like cabbage and broccoli plants. Can be planted in succession until mid July. Start planting in early spring.
LEEKs	Use transplants in early spring. Mound with dirt to blanch the stem.
RADISHES and ONIONS	Plant in early spring. For onions use plants and sets. Do not plant too deep.
PARSNIPS	Plant in May.
PEAS	All English and edible pod varieties do well. Plant in early GREEN ARROW, DWARF GREY SUGAR, SNOWBIRD, and MAESTRO choices. WANDO, a hot weather pea, does well in both hot and cool weather. Nitrogen inoculant, either row or seed, makes for heavier production. Use a pea fence for the tall varieties

PEPPERS	Protect young plants with some type of covering, preferably Wall O Water. Do not plant before June 1. NEW ACE, BELL BOY, GYPSY, and PARK'S WHOPPER do well at this altitude and in this short season.
POTATOES	Our soil is too heavy for them to develop well. Plant on top of or near the top of the soil. Fertilize with 1 Tbsp. Potash per hill. Cover with 5"-6 straw. Add more straw as they grow.
PUMPKINS	Plant after June 1. Use bush or short vine varieties to control their spread. For bigger fruit, limit the number of pumpkins per vine.
SQUASH	Plant after June 1. Most winter and summer varieties do well here. Acorn, Spaghetti, and Zucchini are favorites.
TOMATOES	Plant after June 1 unless using Walls OWater. Protect young plants with some type of covering. EARLY GIRL, BOY varieties, CELEBRITY or any with less than 75 days maturity will produce here. Keep in opened-up Walls O Water all season to keep their roots warm. Fertilize with an organic fertilizer. Watch for tomato blight, both early and late. Plant disease resistant varieties.
TURNIPS	Plant as early as possible in the spring. PURPLE-TOP WHITE GLOBE and TOKYO CROSS HYBRID do well in cool climates.

Note: Melons (cantaloupe and watermelon) do not mature in the garden. The nights are too cool.

We'd love to hear from all you gardeners as to your successes and preferences. Let us know!

Spring and Fall Frost Dates in Colorado Springs

Annual vegetables may be divided into two groups: Cool and Warm Season Varieties.

- **Cool Season Varieties** are frost-hardy and thrive in cool weather. All do well in early spring and some may be replanted in late summer and fall.
- **Warm Season Varieties** are sensitive to frost and must not be planted until danger of frost has passed.

Average last killing frost in Colorado Springs	MAY 15
Latest recorded spring frost	JUN 3, 1951
Average first killing fall frost	OCT 10
Earliest recorded fall frost	SEP 3, 1961
Average growing season	148 Days
Average annual rainfall	15.42 inches

The above listed frost dates are for Colorado Springs, elevation 6,035'. You can adjust the dates of the first and last killing frost for your specific location by knowing your elevation. Count forward or backward 1 day for each 100 foot change in elevation above or below 6,035 to get the average frost dates.

Planting Times for Vegetables¹

Vegetable	Start Indoors	Transplant Outside After	Plant Seed Outside After	Plant Seed Outdoors for Fall
Beans			May 15*	AUG
Beets			APR 15*	
Broccoli	MAR 1	APR 15	JUN 1	
Brussels Sprouts	MAR 1	MAY 1		
Cabbage	MAR 1	APR 15		AUG
Carrots			Late APR*	Late JUL
Cauliflower	MAR 1	APR 15		
Celery	FEB 15	JUN 1		
Chard			APR 15	
Collards			MAY 15	
Corn			MAY 15	
Cucumbers	APR 15	MAY 23	MAY 23	
Eggplant	MAR 25	JUN 1		
Kohlrabi	APR 1	MAY 15		Mid-Summer
Leeks	FEB 15	MAY 1		
Lettuce			APR 15	Late August
Onions (seed)	MAR 1	MAY 15		
Onions (sets)		APR 1		
Parsnips			MAY 15	
Peas			APR 1*	AUG

¹ Adapted from Spencer's Garden Success Tips (see Sources for more information)

Vegetable	Start Indoors	Transplant Outside After	Plant Seed Outside After	Plant Seed Outdoors for Fall
Peppers	MAR 15	JUN 1		
Potatoes	APR 15	JUN 1		
Potatoes (seed)		APR 1		
Pumpkins			MAY 15	
Radishes			APR 15*	OCT 1
Spinach			APR 1*	Late Summer
Squash	APR 1	MAY 15	MAY 15	
Tomatoes	MAR 20	MAY 15		
Turnips			APR 1	AUG 10
Watermelon	APR 15	MAY 23		
*Can be sown repeatedly every 1-2 weeks after initial sowing.				

Plan Your Garden

This chart tells when to plant, whether to plant seed or transplants, how big the plants will be and when the crops will be ready to pick.

Key: O = Outdoors after danger of heavy frost E = Start early indoors, transplant to garden
Others = Plant seed in garden after all danger of frost

Name	Plant	Height	Days to Harvest	Name	Plant	Height	Days to Harvest
Arugula	O	1-2'	35	Melon		Vine	68-96
Basil	E	18"	30	Okra	E	2-7'	48-56
Bean, Lima		14-20"	70-75	Onion	E,O	12-20"	90-105
Bean, Pole		5-8'	50-65	Pak Choi	O	14-16"	47
Bean, Snap		15-20"	48-60	Parsley		8-10"	70
Bean, Shell		12-30"	65-100	Parsnip	O	14-16"	105
Beet	O	8-18"	49-80	Pea, Common	O	18"	58-70
Broccoli	E,O	2-3"	78-95	Pea, Snap	O	18-30"	56-65
Brussels Sprouts	E,O	26-30"	45-105	Pea, Snow	O	16-48"	58-68
Cabbage	E,O	9-18"	45-105	Pepper, Hot	E	18-30"	57-150
Cabbage, Chinese	E,O	10-12"	43-62	Pepper, Sweet	E	16-24"	60-75
Carrot	O	6-20"	60-75	Potato	O	18-24"	Early Fall
Cauliflower	E,O	24-30"	52	Potato, Sweet		Vine	Early Fall
Celery	E	15-18"	60-105	Pumpkin		Vine	80-120
Chicory	O	10-12"	85	Radish	O	4-6"	22-45
Cilantro	O	10-14"	35-45	Rutabaga	O	12"	90
Collard	O	2-3'	60	Scallion	O	12-15"	60-120
Corn		4-9'	63-92	Shallot	O	10-12"	Fall
Cucumber		Vine	52-64	Spinach	O	10-12"	42-48
Eggplant	E	1-3'	45-73	Spinach, N.Z.	E	2-3'	70
Endive	O	12"	45-90	Squash, Spaghetti		Vine	73-100
Fennel	E	12-24"	75-90	Squash, Summer		30-36"	48-50
Gourd		18-30"	Early Fall	Squash, Winter		Vine	75-120
Horseradish	O	18-30"	Late Fall	Swiss Chard	O	18-28"	60
Jerusalem Artichoke	O	6-8'	Late Fall	Tomato	E	4-6'	49-85
Kale	O	12-16"	55	Tomatillo	E	30-36"	100
Kohlrabi	O	8-12"	45-55	Turnip	O	10-12"	35
Leek	E,O	12-18"	110-130	Watermelon		Vine	74-100
Lettuce, Leaf	O	9-15"	45-50				
Lettuce, Head	O	6-10"	70-75				



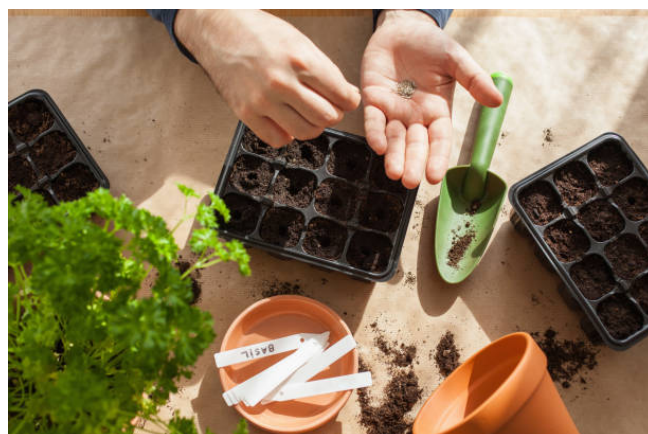
Seed Starting

By Rose Bergles

SUPPLIES:

Seed Starting Soil Mix
Seed Container and Trays
Plant Labels
Markers
Light Source
Seeds

1. Check the seed packets for information regarding number of weeks to be planted indoors before last date for frost. The last date for frost in Colorado Springs is May 15.
2. Fill plant containers even to the top with seed starting mix. (not potting soil)
3. Water lightly just to put small amount of moisture into the soil.
4. Plant 2 to 3 seeds in each cell. Tamp down seeds into the soil. Cover lightly with more soil mix.
5. Label each cell with plant variety and date. You may want to keep more details about the plant variety and observations about germination and seedling growth in a garden journal.
6. Water lightly again after the entire tray has been planted.
7. Cover tray with plastic wrap or plastic cover.



8. Most seeds require temperature of 65 to 75 degrees to germinate. You may want to use a heating mat to increase the rate of germination.
9. Most seeds will not germinate without light and will perform best with 12 to 16 hours of light each day.
10. Grow lights make this process much easier, but south-facing window sills will work. Trays on windowsills must be turned 180 degrees every day.
11. Check every day for moisture levels. Be careful not to overwater. Soil just needs to be moist.



I have seedlings. Now what?

1. As seedlings develop secondary leaves, brush them lightly with your fingers or set a fan on low in front of trays. This will make the main stem stronger and the plant more vigorous.
2. When the young plants are 2 to 3 inches high, transplant them into small individual pots. Use mixture of 2/3 potting soil and 1/3 worm castings.
3. Transplant carefully. Young plants are tender and fragile.
4. Place individual pots into draining tray and make sure all pots receive equal amounts of light.
5. Don't forget that your plants need brushing (lightly with fingers) every day! Get ready to transplant in the garden.



1. About 7 to 10 days before you set out plants, begin the hardening off process.
2. Place plants outside in a protected area where they will receive a few hours of sunlight. Remember to bring plants indoors for the night.
3. Gradually over the next few days increase the amount of sunlight the plants receive until they can remain outdoors all day and all night.
4. Some plants might require supports to keep them straight and strong!



For more information please check out some of these sites:

Growing Plants From Seed – 7.409

<https://extension.colostate.edu/topic-areas/yard-garden/growing-plants-from-seed-7-409/>

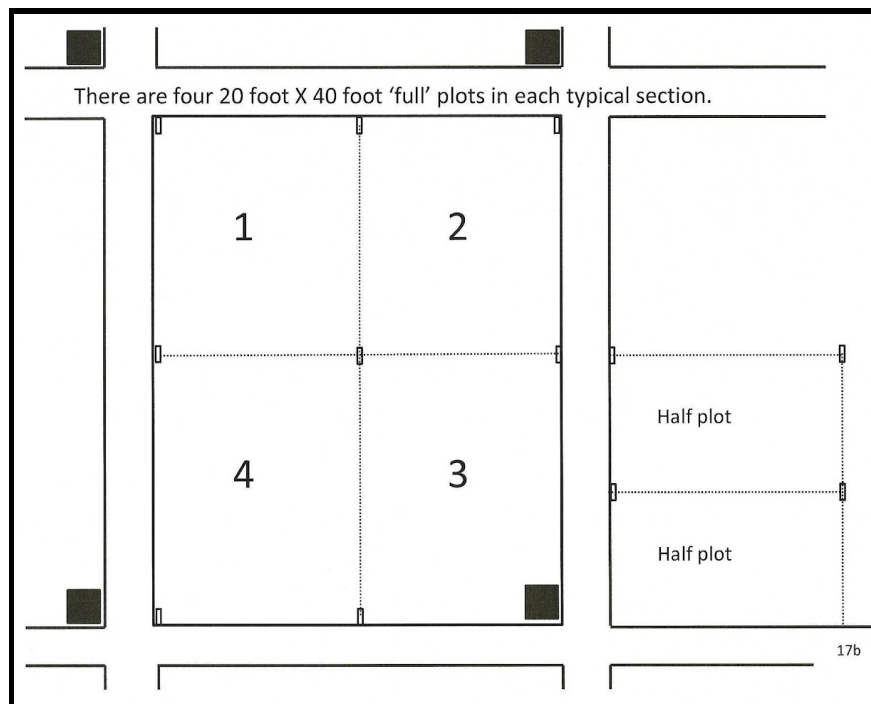
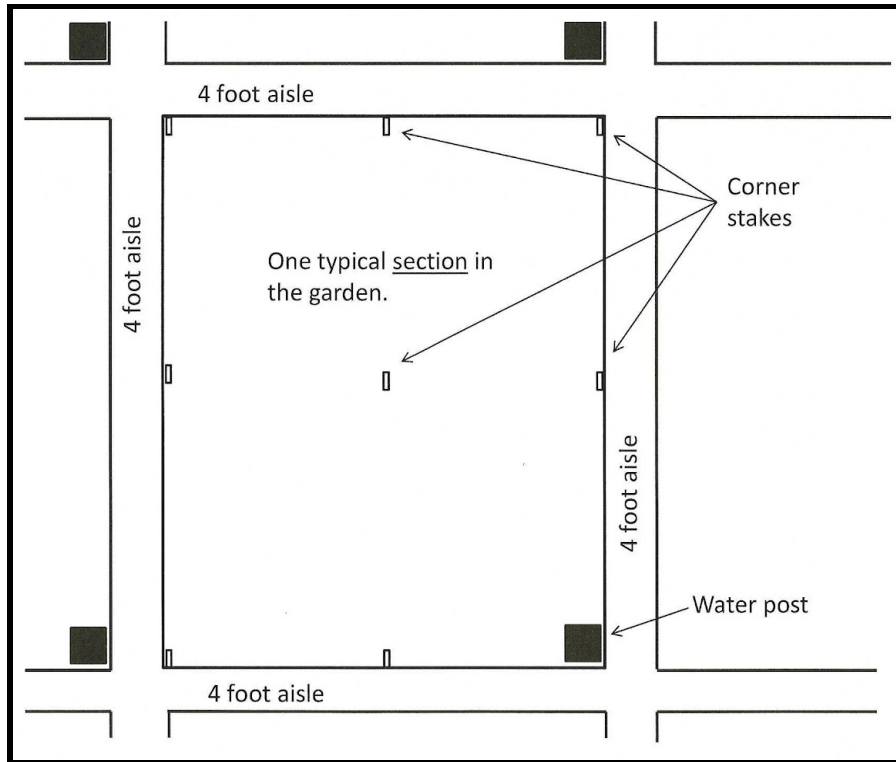
Old Farmer's Almanac

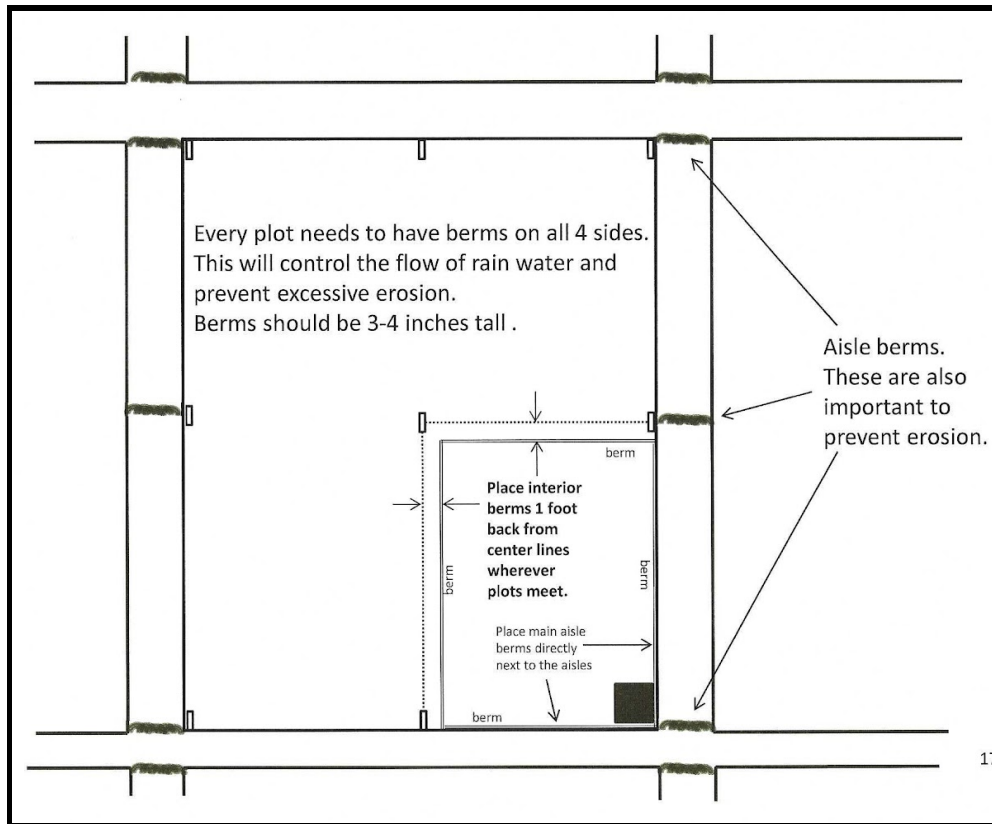
<https://www.almanac.com/starting-seeds-indoors-how-and-when-start-seeds>

Mother Earth News

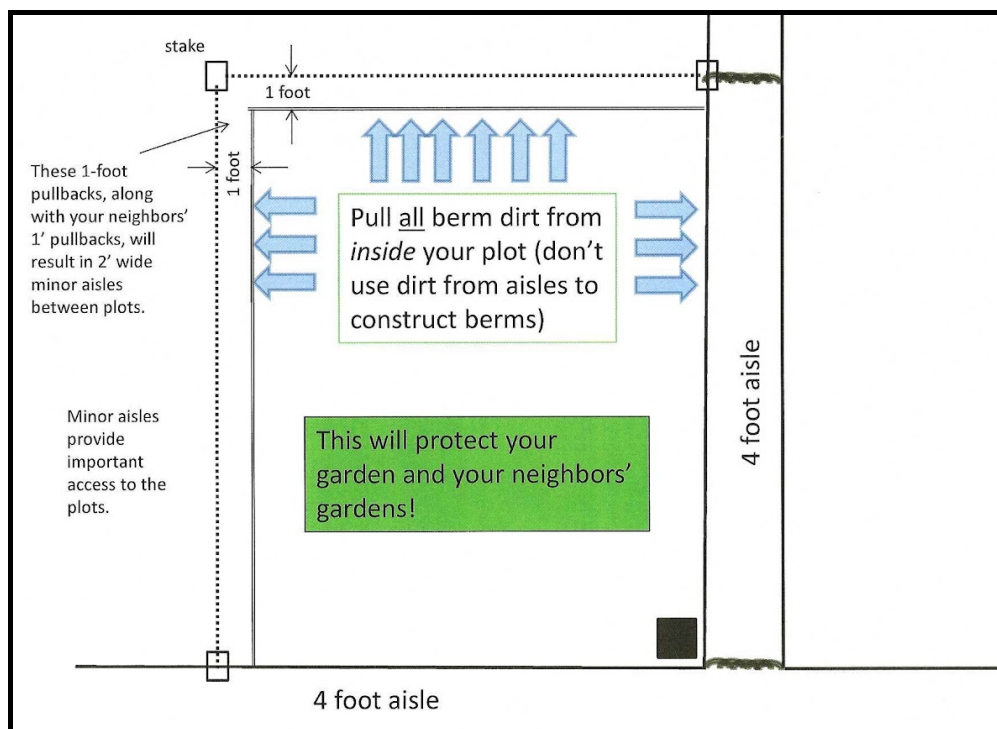
<https://www.youtube.com/watch?v=dCWRWLabn0s&feature=youtu.be>

Garden Layout for Plots





Close up of one plot



Vegetable Planting Guide

VEGETABLE *=Transplant	SEED NEEDED PER 100' ROW	SPACING APART IN ROWS	SPACE ROWS APART	DEPTH TO PLANT	APPROX. DAYS TO GERMINATE
Beans, Bush	8oz	4-6"	18-30"	1"	6
Beans, Pole	6oz	6-10"	36-48"	1"	6
Beans, Lima	12oz	6-8"	18-30"	1"	7
Beets	1oz	3-4"	18-24"	½"	9
Broccoli*	-	15"	2-3'	¼"	10
Brussels Sprouts*	-	24"	2-3'	¼"	10
Cabbage* early	-	12-18"	2-3'	¼"	10
Cabbage* late	-	24-36"	2-3'	¼"	10
Cabbage, Chinese	½ oz	12-18"	2-3'	¼"	9
Carrots	½ oz	2-3"	1'	½"	9
Cauliflower*	-	18-24"	2-3'	¼"	10
Celery*	-	6"	2-3'	⅛"	21
Collards	½ oz	4-6"	1-2'	¼"	10
Corn	4oz.	12-15"	30-48"	1-2"	7
Cucumbers	1oz	12"	4-6'	1"	7
Eggplant*	-	2-3'	3-4'	½"	10
Kale	½ oz	12-18"	2-3'	½"	10
Kohlrabi	½ oz	6-8"	1-2'	½"	12
Lettuce	½ oz	6-8"	1-2'	¼"	7
Muskmelon	1oz	3-4'	6-8'	1"	7
Mustard	1oz	3-6"	2-3'	¼"	9

VEGETABLE *=Transplant	SEED NEEDED PER 100' ROW	SPACING APART IN ROWS	SPACE ROWS APART	DEPTH TO PLANT	APPROX. DAYS TO GERMINATE
Onion, plants	-	3"	1-2'	-	-
Onion, sets	2LB	3'	1-2'	1"	-
Parsley	3/4oz	4-8"	12-18"	1/4"	21
Parsnip	1oz	3-6"	12-18"	3/4"	18
Peas	1-2LB	2-3"	2-3'	1-2"	8
Peppers*	-	18-24"	2-3'	1/4"	10
Potato	5-8LB	12"	3-4'	5"	14
Pumpkin	1/4 oz	15-20"	18-30"	1/4"	10
Radish	1oz	1"	12-18"	1/2"	6
Rutabaga	1/2 oz	6-8"	18-24"	1/2"	9
Spinach	1oz	5-6"	18-24"	1/2"	8
Squash, summer	2oz	3-4'	3-4'	1.5"	7
Squash, winter	1oz	4-6	6-8'	1.5"	7
Tomatoes*	-	3-4'	3-4'	1/4"	8
Turnip	3/4 oz	3-4"	18"	1/4--1/2"	7
Watermelon	1oz	6-8"	8'	1-2"	8

Square Foot Gardening²

My name is Larry Booth. I have been gardening for more years than I can remember. I used to start out very enthusiastic about the garden and later the weeds won out. The weeds seemed to grow better than the plants. Then I saw on TV the square foot method . Mel Bartholomew was the person who changed my life about gardening . You can buy his books or just go on the internet and put in "square foot gardening". I will never garden any other way.

Square foot gardening is a method of growing five times the amount of vegetables in a plot. Instead of planting in rows, you plant in square feet. You are planting the least amount of space the vegetables need to produce. For example 16 carrots need only one square foot, while squash needs a three foot by three foot space. This will save you time in the garden because the plants use the entire space which will shade out the weeds, use less water, use fewer seeds and use less fertilizer. Square foot gardening also helps you plant in small square spaces what you actually will need to eat. You can plant another few square feet in about two weeks and have a continuous harvest all season long. Radishes and lettuce are a good example. This will keep you from having everything coming up at the same time.

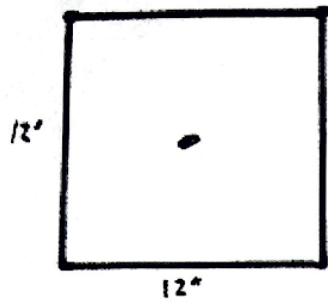
The planting area needs to be no more than four feet across and can be any length. The reason they need to be only four feet across is so you can reach into your garden without stepping on the soil. Then you make a path to walk between the planting four foot areas. I use a one foot path so that I can plant more. You may want a two or three foot path.

The other way you save space is by using a fence (about 3 feet high) so that your vegetables can grow up. Examples would be pole beans, butternut squash, cucumbers, etc. By keeping these types of vegetables off the ground you have less fungus and rot.

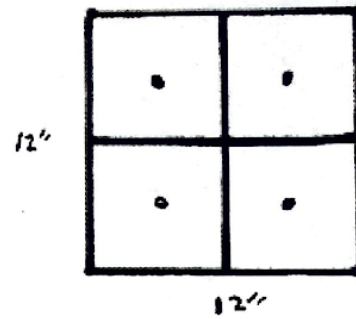
The first thing you need to do is to draw a diagram of your plot. I use graph paper where each square represents one square foot. Draw the width and length of your plot and go over four feet for each planting area and then a path (one to three feet wide). Second, decide what you want to grow. Third, determine how many square feet each type of plant needs and draw them into your diagram. You can go on the internet and put in "square foot gardening" and the number of square feet needed per plant will be listed. I use a tape measure and string to mark out my four foot planting areas when I get to the garden. You will need some stakes to place the string down. I leave the string up for the entire season. You measure four feet on one side of your garden and then measure four foot on the other side and pull the string and stake down.

You can also place black ground material along your walking paths so that you will have no weeds. After you spend a little more time setting up your garden, you will spend your time picking your produce instead of weeding. Your garden will look so good you will not quit and you will be back each year to do it again.

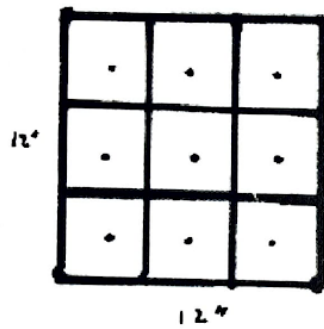
² Mel Bartholomew, Originator and Founder of Square Foot Gardening Foundation <http://www.melbartholomew.com/>



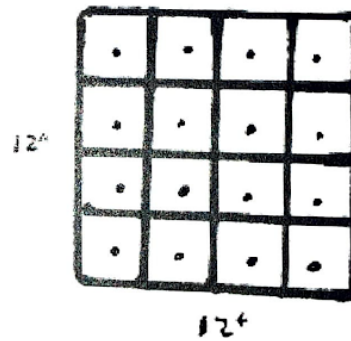
Broccoli
Cabbage
Cauliflower
Corn
Egg Plant
Kale



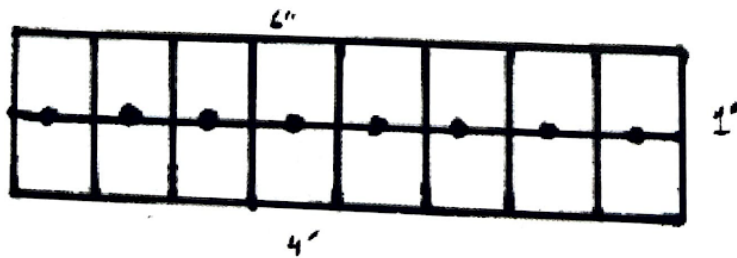
Swiss Chard
Lettuce
Parsley
Basil



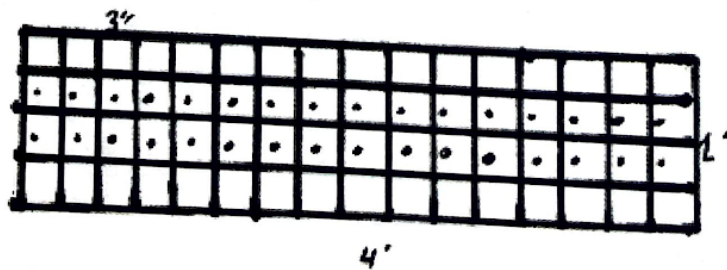
Bush Beans
Spinach
Cilantro
Turnips



Beets
Carrots
Onions
Radishes



Cucumbers



Pole Beans
Peas

Common Pests And Diseases³



BEANS

Leaves with white growth or water soaked spots.

CAUSE: Bacterial Blight

Pods with water-soaked spots or brown patches; seeds yellow, blotched.



Large Holes in Leaves.

CAUSE: Bean Leaf Beetles.

Adults feed above ground; larvae eat roots; plants may turn yellow and wilt.



Leaves Skeletonized.

CAUSE: Mexican Bean Beetles.

Larvae and adults eat lower surfaces of leaves; also chew pods and stems. Look for clusters of their yellow eggs on the undersides of leaves (generally low on the plant).

³ Image sources are either public domain or from non-commercial reproduction and sharing.



CABBAGE

Leaves with large, ragged holes.

CAUSE:

Cabbage Loopers

Green larvae, gray moth adults.

Or Imported Cabbageworms

Slow-moving green caterpillars, white butterfly adult

A



CORN

Brown, black, silvery or greenish galls on corn.

CAUSE: Corn Smut

very distinctive fungus that causes leaves, fruit and silk to form large galls. Very Contagious. Corn smut control can be difficult. Always make sure to clean up all the corn debris as it falls, since it can harbor more corn smut spores. Try a more resistant variety of sweet corn. These include: Argent, Brilliant Fantasia, Pristine Seneca, Sensation Seneca, Snow Prince Seneca, Sugar Prince, Silver King, Silver Prince



Ears with tunnels and chewed kernels.

CAUSE: Corn Earworms

Larvae are yellow-white, green or brownish caterpillars with lengthwise stripes.



TOMATO

Leaves with large, ragged holes or leaves

CAUSE: Tomato Hornworm

Large, green caterpillars rapidly consume leaves and sometimes fruit. Easiest control is hand-picking.



Rot on the bottom of fruit.

CAUSE: Blossom End Rot

Typically, starts on the first flush of fruits and those that haven't reached full size. Spot first appears watery and yellowish brown, will grow until it destroys much of the fruit.

For more information about these problems and others not listed. Please check out:

<https://www.gardeningknowhow.com/>

Organic Pest Control

- 1) **IVORY DISH SOAP:** Use several drops in pint of water. Spray plant at first sign of trouble. Be sure to use soap, not detergent. Effective in controlling aphids.
- 2) **GARLIC SPRAY:** Mix 5 - 10 cloves with a pint of water in a blender, strain, and spray on plants. It seems to work as a fungicide as well as an insecticide.
- 3) **BAKING SODA:** Dissolve 1 teaspoon of baking soda and a few drops of liquid soap in 2 quarts of water and spray on plants. Baking soda prevents fungal spores from establishing themselves and may prevent established fungi from continuing to develop.
- 4) **BLACK PEPPER:** Dust infected plants with finely ground pepper.
- 5) **CAYENNE PEPPER:** After planting seeds, dust ground with pepper to prevent removal of seed by rodents.
- 6) **HUMAN HAIR:** Repels deer and rodents. Scatter hair around problem areas.
- 7) **SULPHUR:** This is an effective preventive fungicide. Dust potato patch 3 - 4 times yearly to prevent potato blight.
- 8) **BENEFICIAL INSECTS:** Ladybugs (destroy aphids), lacewings, praying mantids, trichogramma wasp - all devour harmful insects.
- 9) **BENEFICIAL NEMATODES:** Devour onion and carrot root maggots.

BOTANICAL INSECTICIDES: Many are toxic to bees and other beneficial insects. Apply at dusk to avoid this. Use sparingly, follow directions implicitly. Use as a last resort. These, as well as the beneficial nematodes, can be purchased at most garden centers.

- 1) **BT:** Under the brand name THURICIDE or DIPEL. controls cabbage looper, cabbageworm, tomato hornworm, and other worms. This does not harm beneficial insects and can be used right up to harvest. BT San Diego controls the Colorado potato beetle.
- 2) **DIATOMACEOUS EARTH:** Apply as a dust, preferably after a light rain. Good for Mexican bean beetles, cucumber beetles, flea beetles, cutworms, slugs, squash vine borers, as well as other soft-bodied insects.
- 3) **SAFER INSECTICIDAL SOAPS:** Kills aphids, mites, and white flies.

- 4) **ROTENONE:** Although organic, Rotenone is not permitted for use at the garden because of its toxicity to birds and beneficial insects; and also because of its ability to drift onto your neighbor's garden.
- 5) **PYRETHRINS:** Derived from the flowers of pyrethrum daisies. A broad spectrum. organic insecticide which can be applied up to one day before harvest. It is very effective.
- 6) **NEEM:** Derived from the seeds of the neem tree, found in southern Africa, India, Australia, and southeast Asia. Believed to be harmless to humans, animals, birds, and plants, but may be harmful to some beneficial insects. Apply- carefully to affected areas and only during early morning or late evening hours when beneficial insects are least active.
- 7) **SPINOSAD:** For spider mites, thrips and caterpillars.
- 8) **HERBALS:** Contains rosemary, sesame oil, peppermint, thyme cinnamon oil and others. Use against mites and aphids.
- 9) **ROSEMARY OIL:** Especially good for mites. It also kills their eggs.
- 10) **SAFER SOAP:** A new soap with food grade pyrethrins. It is a fungicide and broad spectrum insecticide that kills on contact.

Fertilizers and Insect Control Products⁴

For Organic Vegetable Gardening

Dan Hopper
Owner, Rick's Garden Center
1827 West Uintah Street, Colorado Springs, CO

1. **Espoma** brand organic fertilizers. All organic products with added friendly bacteria for extra vitality.
2. **Root Rally**. An amazing root builder for a great foundation for every plant.
3. **Yum Yum Mix**. A vegetarian soil amendment, has small fertilizer value.
4. **Humic Acid**. Supercharges microbe activity in the soil.
5. **Feather Meal and Blood Meal**. Use to repel deer & rabbits while adding extra nutrition.
6. **Dusting Sulfur**. Easy to use dust for potatoes to prevent scab and other diseases.
7. **Spinosad**. An organic insecticide discovered surrounding rum factories in the Caribbean.
8. **Safer Insecticidal Soaps with Pyrethrin**. Spray on for extra coverage of many insects.
9. **Diatomaceous Earth**. Spread alongside your onions to prevent onion maggots.
10. Use **row covers** to prevent cabbage looper and other wormie creatures!
11. Lay down **lightweight weed fabric** to reduce weeding while helping to raise soil temps for better pollination.

Protect the Pollinators! Wash off aphids with a stream from the hose; pick off and destroy caterpillars, worms and beetles; wipe egg cases from underside of bean leaves. Use Spinosad and Safer Soaps as a last resort.

⁴ Handout from Dan Hopper's presentation at the BCGA Garden Class on March 7, 2020.

Recognizing Pests⁵

APHIDS



Description: Adults: pear-shaped, 1/32 - 1/8 " insects with 2 short tubes projecting backward from the abdomen; long antennae; green, pink, black, dusty gray, or with white fluffy coating; with or without wings. Nymphs: similar to adults. Colonies develop quickly; winged forms appear when they become crowded. Common throughout North America.

Damage: Nymphs and adults suck plant sap from most small fruits, vegetables, ornamentals, and fruit and shade trees. Their feeding causes leaf, bud, and flower distortions; severely infested leaves and flowers drop. Fruit that forms on infested branches are misshapen and stunted. Aphids secrete sticky honeydew that supports growth of sooty mold on leaves and fruit. Feeding can spread viral diseases.

Life Cycle: Eggs overwinter on woody stems, hatching in spring into stem females, which can give birth continuously to live to live nymphs without having to mate. Nymphs mature in 1-2 weeks. In greenhouses, some females continue to bear nymphs throughout the year. Some species feed on cereal crops or weeds for part of the year and on fruit trees at other times.

Control: For vegetable crops and small ornamentals, spray smaller plants frequently with a strong stream of water to knock aphids off; attract native predators and parasites by planting pollen and nectar plants; release purchased aphid midges, lady beetles, lacewing or parasitic wasps; use homemade garlic, quassia, or tomato-leaf sprays. Use insecticidal soap as a last resort.

⁵ <https://www.gardeningknowhow.com/>

COLORADO POTATO BEETLE



Description: *Adults:* yellowish orange. $\frac{1}{3}$ " beetles with 10 lengthwise, black stripes on wing covers, black spots on thoraxes. *Larvae:* dark orange, humpbacked, $\frac{1}{16}$ " - $\frac{1}{2}$ " grubs with a row of black spots along each side. *Eggs:* bright yellow ovals, standing on end in clusters on undersides of leaves. Found throughout North America.

Damage: Both adults and larvae chew leaves of potatoes, tomatoes, eggplants, and related plants, including petunias. Feeding can kill small plants and reduces yield of mature plants.

Life Cycle: Overwintering adults emerge from soil in spring to feed on young plants; after feeding, females lay up to 1,000 eggs during their lifespan of several months. Eggs hatch in 4-9 days; larvae feed 2-3 weeks, then pupate in soil. Adults emerge in 5-10 days. Two generations in most areas, 3 generations in southern states.

Control: When overwintering adults begin to emerge. shake adults from plants onto a dropcloth in the early morning. Dump beetles into soapy water. Attract native predators and parasites with pollen and nectar flowers; mulch plants with deep straw layer; cover plants with floating row cover until midseason; release 2-5 spined soldier bugs per square yard of plants; release parasitic wasp *Edovum puttleri* in southern areas to attack 2nd generation larvae; apply parasitic nematodes to soil to attack larvae as they prepare to pupate; apply double strength spray of BTSD on larvae: spray weekly with pyrethrin or neem.



Don't let Colorado potato beetles get started; look for clusters of their bright yellow eggs on the undersides of leaves and destroy them.

FLEA BEETLES



Description: *Adults:* black, brown, or bronze, 1/10" beetles with well-developed hind legs; jump like fleas when disturbed. *Larvae:* thin, white, legless grubs with brown heads, up to 3/4", living in soil. Found throughout North America.

Damage: Adults chew numerous small, round holes in leaves of most vegetable crops as well as many flowers and weeds. They are most damaging in early spring. Seedlings may be killed, larger plants usually survive. Larvae feed on plant roots. Adults may spread viral diseases as they feed.

Life Cycle: Overwintering adults emerge from soil in spring; they feed and lay eggs on plant roots, then die by early July. Eggs hatch in 1 week, larvae feed 2-3 weeks. One to 4 generations per year.

Control: Delay planting to avoid peak populations; cover seedlings with row cover until adults die off. Flea beetles prefer full sun, so interplant crops to provide shade for susceptible plants; drench roots with insect parasitic nematodes to control larvae; spray with neem, pyrethrin

MEXICAN BEAN BEETLE



Description: Description: Adults: oval, yellowish brown, 1/." beetles with 16 black spots on wing covers. Larvae: fat, yellowish orange , 5/16" grubs with long, branching spines. Eggs : yellow ovals laid on end on undersides of leaves. Found in most states east of the Mississippi River; also Texas, Arizona, Utah, Colorado, and Nebraska.

Damage: Both larvae and adults skeletonize leaves of cowpeas, lima beans, snap beans, and soybeans. They feed from the undersides of leaves, leaving characteristic lacy damage; severely defoliated plants may be killed. Beetles are most abundant in weedless fields.

Life Cycle: Adults overwinter in leaf litter in nearby fields; in spring, females lay eggs on beans. Eggs hatch in 5-14 days, larvae feed 2-4 weeks, then pupate on leaves. One to 3 generations per year.

Control : Plant early season bush beans to avoid main beetle generations; plant soybeans as trap crops, destroy them when infested with larvae; handpick larvae and adults daily in small bean patches; cover plants with floating row cover until plants are large enough to withstand damage; attract native predators and parasites by leaving flowering weeds between rows or by interplanting flowers and herbs; dig in crop residues as soon as plants are harvested; release spined soldier bugs (*Podisus maculiventris*) to control early generation; release parasitic wasps (*Pediobius foveolatus*) when weather warms; spray weekly with pyrethrin or neem.

GRASSHOPPERS



Description: Adults: brown, yellow, or green. 1"-2" insects with leathery forewings and enlarged hind legs; many have brightly colored underwings. Nymphs: similar to adults, but smaller. Found throughout North America.

Damage: Adults eat any kind of vegetation. In most areas of North America, economic damage occurs only in fields of grass or cereal crops. Little damage occurs to home gardens: on rare occasions swarms of grasshoppers devastate

agricultural crops over large areas.

Life Cycle: In late summer females deposit elongated masses of eggs in soil; eggs hatch in spring; nymphs develop for 40--60 days until molting to adults. Adults feed until killed by cold weather. Swarms appear as a result of interaction of weather and biological influences.

Control: Usually controlled by natural enemies (blister beetle larvae, ground beetles, predatory flies, birds, parasitic nematodes, fungal diseases); cultivate fields in fall to kill overwintering eggs; aerial sprays of commercial protozoan disease (*Nosema locustae*) may be effective over large areas but is not useful on a home-garden scale.

STINK BUGS



Description: *Adults:* shield-shaped. Green, tan, brown, or gray, ½" bugs; most species smooth, but a few spiny or rough-textured. *Nymphs:* oval-shaped and wingless, similar to adults. *Eggs:* barrel-shaped. Feeding punctures in fruit cause scarring and dimpling known as cat-facing.

Life Cycle: Adults overwinter in weeds in waste areas; females lay 300-500 eggs each fringe in clusters. Found throughout North America.

Damage: Adults and nymphs suck plant sap from leaves, flowers, buds, fruit, and seeds of cabbage and squash family crops. When weather warms; eggs hatch in a week,

and nymphs develop to adults in about 5 weeks. Two or more generations per year.

Control: Control weeds in susceptible crops; remove or mow weedy areas adjacent to garden beds; attract native parasitic wasps and flies by planting small-flowered plants.

Spiders You Should Fear⁶



- **Black Widow** spiders rarely, if ever, bite when not within a web. Bites may be more likely if the female is tending an egg sac in the web, which she will defend.

- Widow spiders produce a toxin that affects the nervous system. Muscle and chest pain or tightness are some of the most common reactions to the widow toxin.

- Widow spiders prefer to nest near the ground, in dark, undisturbed areas. Outdoor nest sites include holes produced by small animals or around

construction openings and wood piles.

The “widow” spiders are a group of related spiders in the genus *Latrodectus*. Several species occur in the United States, but the western widow, *Latrodectus hesperus*, is the overwhelmingly dominant species throughout Colorado. (The “true” black widow, *Latrodectus mactans*, is more common in eastern and southern areas of the country.)

Identification: Mature females of the western widow spider are generally round in form with a bulbous abdomen. They usually reach a length of 1/4 to 1/3 inch. Adult females are distinctively shiny and dark colored, generally black or occasionally dark-brown.

The distinguishing feature of all widows (*Latrodectus* spp.) is the presence of a red or red-orange “hourglass” pattern on the underside of the abdomen. However, this pattern can be highly variable with the western widow and may fade or intensify in color during the life of any individual widow spider.



- The **Brown Recluse**, and all other recluse spiders, are extremely rare in Colorado. Confirmed specimens at the Denver Museum of Nature and Science collection include only one specimen of *Loxocles reclusa* collected from the state (Boulder County, 1996).

- Colorado has many kinds of spiders that are brown or have patterning that may resemble brown recluse spiders.

- The quickest way to positively identify a recluse spider is to examine the arrangement of the eyes – there should be three pairs.

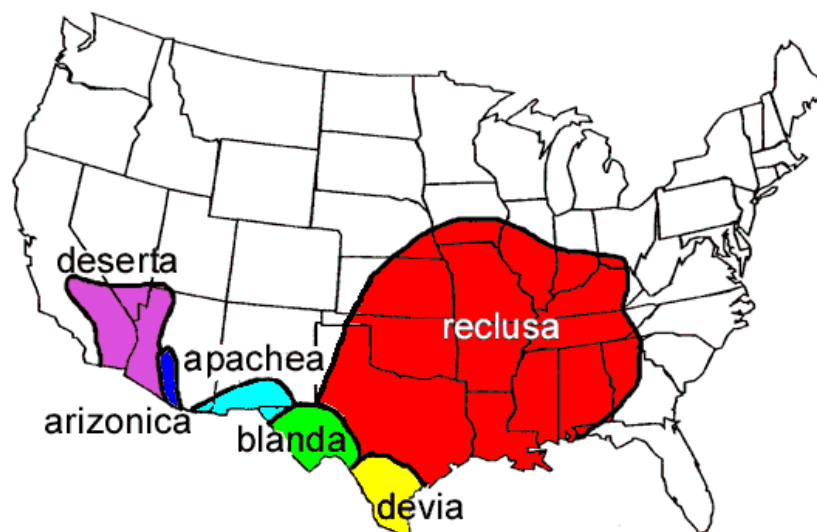
⁶ <https://extension.colostate.edu/topic-areas/insects>

- Brown recluse spiders usually have a “violin pattern” on the cephalothorax.
- Funnel weaver spiders and wood louse hunters are the two groups most commonly mistaken for recluse spiders.
- Brown recluse and related recluse spiders (*Loxosceles* spp., Family Sicariidae) are, by far, the most commonly misidentified spiders in Colorado. Unfortunately, also greatly overdiagnosed are purported spider bites caused by brown recluse spiders – a situation perpetuated by many in the Colorado medical establishment as well as through self-diagnosis.

Colorado hosts a great many kinds of spiders that are brown or have some patterning that may superficially resemble brown recluse spiders. However, close examination can readily distinguish them (see Table 1).

Table 1. Features to identify recluse (brown) spiders (<i>Loxosceles</i> species).	
Eyes	3 pairs, of approximately equal size, arranged in semicircular pattern.
Cephalothorax	Overall color uniformly brown; Darker brown pattern in center, somewhat resembling a violin, usually present.
Abdomen	Overall color uniformly brown, without any patterning.
Legs	Uniformly colored, without any banding or patterning; Silky appearance due to fine hairs; no spines present.
Activity	Active at night; restricted to web-lined refugia during day.
Webs	Webs are not produced in open areas where they are readily seen.

General distribution of Brown Recluse spiders in the US



Pocket Gophers - and Predators that Eat Them



Four species of pocket gophers are found in Colorado. The Botta species (*Thomomys bottae*) is primarily found in the well-developed soils of warm valleys in southern Colorado, including Bear Creek Park.

Pocket gophers construct burrow systems by loosening the soil with their claws and incisors, and then using their forefeet and chest to push soil out of the burrow. A gopher's lips are unusually adapted for this activity: they can close the lips behind their four large incisor teeth to keep dirt out of

their mouths when using their teeth for digging.

A 2" wide hole with a small amount of fresh dirt piled up, is the sign of a burrow in the garden.

Burrow systems consist of a main tunnel, generally 4" to 8 11 below the soil surface, and a variable number of lateral tunnels extending from the main. Pocket gophers usually breed in the spring and produce one litter of 3-4 young. Usually only one adult is found in each burrow.

They feed on small branches, roots and green vegetation. Damage to root crops in the garden becomes more noticeable in the fall, especially when the vegetables are over-mature.

Gardener Randy Rickey has set traps in gopher burrows at the garden for many years, thereby keeping the gopher population under reasonable control.

We do not ever poison gophers. Some gardeners encourage them to move away by flooding water into the hole with a hose, making conditions inhospitable for them.

Predators - including owls, snakes, coyotes, cats and dogs - hunt and eat pocket gophers.

A large bull snake which had been a familiar sight in the garden for some time was killed by a gardener in the summer of 2015. The consequent increase in the gopher population after the loss of this valuable predator resulted in more crop damage than usual. We expect that the work of other predators plus trapping by gardeners will bring the pocket gopher population back down in 2016.

Other gopher management ideas include pepper spray, or a buried pop bottle that generates wind noise. If you see gopher activity, please let a board member know. More information on pocket gophers can be found at: <https://bit.ly/3omHWiA>

Final Note: Deer? Rabbits? Raccoons?

Deer do not jump the garden fence. Rabbits are scarce because of coyotes. Raccoons occasionally visit to sample the corn.

Research by Laura Muir Mellini

Beneficial Insects and Animals⁷

Ground Beetles



The most common ground beetles in gardens are black or dark brown, have long legs that allow them to run very fast and have vertical ridges down their backs. They can range in size from 1/8 inch to 1 inch. These ground beetles live on the soil surface, hiding underneath rocks, logs, mulch and other garden debris during the day. They can live up to four years, overwintering beneath the soil.

Beneficial Effect: While there are about 2,000 different species of ground beetles in North America, most of the ones we encounter in the garden are nocturnal. These beneficial ground beetles help reduce the need for chemical pest control by eating common garden pests like: caterpillars, Colorado potato beetle larvae, gypsy moths, and tent caterpillars.

Lady Beetles (Ladybugs)



Lady beetles (ladybug), are one of the most beneficial insects in the garden.

Beneficial Effects: ladybug larvae are voracious predators. A single larva can eat dozens of aphids per day and eat other soft-bodied garden pests as well such as scale, adelgids, mites and other insect eggs. Ladybugs eat two things: insect pests and pollen. Favorites include: Chives, Cilantro, Cosmos, Dill, Fennel, Marigold, Yarrow.

⁷ <https://www.gardeningknowhow.com/>
<https://extension.colostate.edu/topic-areas/insects/>

Beneficial Bull Snakes in the Garden



From time to time, bull snakes have been spotted in the garden. They can be quite large and are very helpful in curbing our rodent population. Hopefully these photos and information will help you better understand this often misunderstood reptile. Please read carefully and be kind to our garden snakes. Bull snakes are often mistaken for rattlesnakes and killed because, when threatened, they mimic the posture of a rattlesnake to scare off predators. Frightened bull snakes may even

vibrate their tails against the ground to make a rattle-like sound. There are only two venomous snakes in our area, the prairie rattlesnake and the midget faded rattlesnake, and 'sightings of these snakes are rare," according to Dan Neubaum, a wildlife biologist with Colorado Parks and Wildlife. They are usually seen on rocky outcrops, mesa tops and the scree slopes of canyon country. These snakes are generally shy and just want to be left alone. That's why they have a rattle to warn people and other threats to "please go away."

Habitat: Grasslands, open woodlands and farmlands.

Size : Typical adult length : 50-72"; Maximum 88" (Collins & Collins 1993).

Diet: Bull snakes are very powerful constrictors who eat small mammals, such as mice, voles, rats, pocket gophers, ground squirrels, and rabbits, as well as ground nesting birds, birds' eggs and lizards.

Natural History: One of the largest and most often seen snakes of Colorado. Bull snakes usually seize prey with their mouth and, if the prey is large, wrap several coils around them, and kill by constriction. Like many snakes they tend to hunt in the morning and evenings except at the hottest times of the summer when they are more active at night.

Description: Base color yellowish, with reddish-brown to black blotches on back; belly cream with brown or black blotches. Boldly patterned tail is banded with black (dark brown) and tan. It also adopts a rattlesnake-like "S-curve" body posture as though about to strike. It commonly vibrates its tail rapidly in brush or leaves, and flattens its head to resemble the characteristic triangular shape of the rattlesnake. These defensive behaviors are meant to scare away threats and not to sound an attack. In contrast to rattlesnakes, which usually keep their tails elevated to sound the most efficient rattle, bullsnakes tend to keep their tails in contact with the ground, where they can be vibrated against something. For all their fierce display if handled gently they quickly become tame. Non-poisonous snakes are classified as nongame wildlife and are protected by state law.

<http://extension.colostate.edu/topic-areas/natural-resources/coping-with-snakes-6-501/>

This information by Brenda Holmes-Stanciu, a naturalist and one of our most experienced gardeners.

Vegetable Companion Planting Chart⁸

Plants Need Friends Too!

CROP NAME	FRIENDS		FOES
BEANS	Beets Broccoli Cabbage Carrots Cauliflower Celery Corn Cucumbers	Eggplant Peas Potatoes Radishes Squash Strawberries Summer savory Tomatoes	Garlic Onions Peppers
CABBAGE	Beans Celery Cucumbers Dill Kale Lettuce	Onions Potatoes Sage Spinach Thyme	Broccoli Cauliflower Strawberries Tomatoes
CARROTS	Beans Lettuce Onions Peas	Radishes Sage Tomatoes	Anise Dill Parsley
CORN	Beans Cucumbers Lettuce Melons	Peas Potatoes Squash	Tomatoes
CUCUMBERS	Beans Cabbage Cauliflower Corn	Lettuce Peas Radishes	Aromatic herbs Melons Potatoes

⁸ Adapted from The Old Farmer's Almanac 2021
<https://www.almanac.com/content/companion-planting-chart-vegetables>

CROP NAME	FRIENDS		FOES
ONIONS	Beets Broccoli Cabbage Carrots Lettuce	Peppers Potatoes Spinach Tomatoes	Beans Peas Sage
PEPPERS	Basil Coriander Onions Spinach Tomatoes		Beans Kohlrabi
RADISHES	Basil Coriander Onions Spinach Tomatoes		Kohlrabi
TOMATOES	Basil Beans Borage Carrots Celery Dill Lettuce	Melons Onions Parsley Peppers Radishes Spinach Thyme	Broccoli Brussels sprouts Cabbage Cauliflower Corn Kale Potatoes

Cheyenne Mountain Zoo Commissary Produce Enrichment List

The following is a list of produce items that are safe for the zoo animals to receive. Items with a green box are "Favorites," items with a yellow box are "Liked," and items with a gray box are "So-So" or tolerated.

	Rocky Mountain Wild	Asian Highlands	Water's Edge Africa	African Rift Valley (hippos/penguins)	African Rift Valley (birds, hogs, zebra)	Animal Ambassadors/Outreach animals	Big Back Yard	Wilgren Elephant Complex (elephants/rhino)	Monkey Pavilion	Primate World	Australia/Scutes Family Gallery
Artichokes			so-so					so-so	Like		
Beets			Like					Like	Like		
Bell Pepper			Like					FAV	FAV	Like	
Bib Lettuce	so-so		Like	Like	FAV	FAV		Like	Like	Like	
Broccoli			Like	FAV	Like	Like		FAV	FAV	Like	
Brussel Sprouts			so-so					so-so	so-so		
Cabbage			FAV						FAV		
Carrots	FAV		FAV	Like				Like			
Carrot Tops	FAV			Like	Like	FAV				Like	
Chard	Like		Like					Like			
Chili Peppers (hot)	Like				Like			Like	Like		
Collard Greens			FAV		Like	Like		Like	Like	so-so	
Corn	Like		Like	FAV	FAV	FAV		FAV	FAV	FAV	
Corn Stalks	Like	Like	Like	Like	Like	Like		Like	Like		
Eggplant	FAV					FAV		FAV	FAV		
Fennel	Like					FAV		FAV	FAV		
Green Beans	Like		Like	FAV	Like	Like		Like	FAV	FAV	
Kale	Like		FAV	FAV	FAV	FAV		FAV	FAV	FAV	
Onions			Like					Like	Like		
Parsnips	Like							so-so	Like		
Pumpkins	so-so	Like	FAV	Like	Like	Like	so-so	so-so	so-so		
Radishes				Like	Like			Like			
Rhubarb								Like	Like		
Romaine Lettuce	FAV		FAV	FAV	FAV	FAV	FAV	FAV	FAV	FAV	
Snap Peas/SnowPeas	FAV		Like	FAV	FAV	FAV		FAV	FAV	Like	
Spinach	so-so			FAV	FAV	FAV		Like	FAV		
Summer Squash			Like	Like	Like	Like	FAV	FAV	FAV		
Tomatoes			Like		Like			Like	Like	Like	
Turnips				Like		Like		Like	Like		
Zucchini		Like	Like	FAV	FAV	Like	Like	FAV	Like	FAV	Like
Cheyenne Mountain Zoo Commissary Approved Herbs List											
Basil	FAV	Like	Like	Like	FAV	Like	Like		FAV	FAV	Like
Dill	FAV	FAV	Like	Like	Like	Like	Like		FAV	FAV	Like
Parsley	FAV	Like	Like	Like	Like	Like	Like		FAV	FAV	Like
Oregano	FAV	Like	Like	Like	Like	Like	Like		FAV	FAV	Like
Mint	FAV	Like	Like	Like	FAV	Like	Like		FAV	FAV	Like

Resources for Gardeners

Rick's Garden Center - 1827 West Uintah Street, (719) 632-8491 www.ricksgarden.com

Owners Dan and Jeana Hopper are strong supporters of our garden. Show your current Charmaine Nymann Community Garden (CNCG) badge to receive a 10% discount on purchases. Seedlings, garden equipment, fertilizers.

Good Earth Garden Center - 1330 North Walnut Street, (719) 473-3399

www.goodearthgardencenter.com. Large selection of vegetable seedlings, including many varieties of tomatoes grown in the on-site greenhouses. Owner Wayne Fisher offers our gardeners a 10% discount on garden items when you show your current badge. Items already on sale are not discounted.

Ace Hardware - 1830 West Uintah Street, (719) 227-7134

www.coloradohelpfulplace.com/ace-hardware-uintah-gardens Ace Hardware offers our gardeners a 15% discount on most garden items and a 50% discount on tool sharpening. You must show your current badge to receive the discount. Note: The Uintah Gardens store is the only Ace Hardware Store that provides these discounts.

Summerland Gardens - 806 Arcturus Dr., (719) 477-0267 www.summerlandgardens.com

Owner: Julie McIntyre. Her parents, Bob and Roberta McIntyre, gardened for many years at CNCG, then known as the Bear Creek Garden. She always has a good selection of vegetable seedlings.

Sunset Greenhouse - 1023 Sunset Road, (719) 634-6232 www.sunsetgh.com

One of our gardeners' favorite places for vegetable seedlings. Open only March 1 to mid June.

Many varieties of locally grown vegetables and herbs. Run by Valerie and Ed Belden.

Spencer's Lawn and Garden Centers - 1430 South Tejon Street, (719) 632-2788 and 4720

Center Valley Drive in Fountain, Colorado, (719) 392-2726. www.spencersgardens.com

Garden supplies, seeds, seedlings. Farm produce, including roasted green chile peppers, available year round.

Phelan Gardens - 4955 Austin Bluffs Parkway, (719) 574-8058 www.phelangardens.com

Vegetable plants, flowers, garden supplies. Vegetable starts for fall planting available in July.

Harding Nursery - 721 North Powers Boulevard, (719) 596-5712 www.hardingnursery.com

Vegetable plants, large selection of landscape plants and trees including drought tolerant varieties.

Don's Garden Shop - 6001 East Platte Avenue, (719) 591-1040 www.donsgardenshop.com
Mulch, landscaping materials. Don Humphrey has been a supporter of our garden for many years. The compost and manure mix we order by the truckload in the fall comes from Don's.

Classes: Colorado Springs Utilities (719) 448-4800
www.csu.org/Pages/EfficiencyClasses.aspx

Colorado State University Extension (719) 520-7675
www.elpasoco.colostate.edu

Phelan Gardens (see above) www.phelangardens.com

Spencer's Lawn & Garden Centers www.spencersgardens.com

Please support our local garden centers. Their owners and staff work hard to provide advice, seed, seedlings, garden products and services appropriate for Colorado Springs growing conditions.

Specialty Seed Companies

Recommended by our gardeners. They provide a wide variety of vegetable and herb seeds, and some websites offer garden blogs and newsletters. Shop online or request a catalog.

- Baker Creek Heirloom Seeds (Missouri) (417) 924-8917 www.rareseeds.com Rare seeds, family run.
- Berlin Seeds (Ohio) (877) 464-0892 http://www.heartofamishcountry.com/berlin_seeds.html A small, family-run Amish seed company. Dave Ridnour recommends it for unusual and heirloom varieties.
- Botanical Interests (Broomfield, Colorado) www.botanicalinterests.com A family-run seed company recognized for its careful planting advice and lovely botanical drawings on seed packets. Seeds available at Rick's Garden Shop and Good Earth.
- Chile Pepper Institute (Las Cruces, New Mexico) (575) 646-3028 www.chilepepperinstitute.org The Chile Pepper Institute is the only international, non-profit organization devoted to education and research related to Capsicum, or chile peppers. Established in 1992, the Institute builds on the research of the famous horticulturist Fabian Garcia. Catalog available. A favorite of Karen Stith.
- Cook's Garden (Pennsylvania) (800) 888-1447 www.cooksgarden.com. A smaller catalog of seeds and plants for gourmet cooks/gardeners. This company may have recently been folded into Burpee because its website now routes to part of the Burpee collection.
- Johnny's Selected Seeds (Maine) (877) 564-6697 www.johnnyseeds.com Carries a huge selection of seed, offers bulk packaging/pricing.
- Lake Valley Seed (Boulder, Colorado) www.lakevalleyseed.com Founded in 1985 by a Boulder family. Inexpensive packets of seed, wide variety. Available at Rick's Garden Shop. Website also offers seed from a good Italian seed company, Pagano.
- Native Seeds/SEARCH (Tucson, Arizona) (866) 622-5561 www.nativeseeds.org A nonprofit organization. The mission of Native Seeds/SEARCH (Southwestern Endangered Aridland Resources Clearing House) is to conserve, distribute, and document the adapted and diverse varieties of agricultural seeds, their wild relatives,

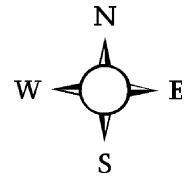
and the roles these seeds play in the cultures of the American Southwest and Northwest Mexico.

- Pueblo Seed and Food Company (Pueblo, CO) www.farmdirectseed.com. Formerly known as Farm Direct Organic Seed. Seed is from Hobbs Family Farm and other growers in the Arkansas River Valley east of Pueblo and in Northern New Mexico. Seed is certified organic, open pollinated and non-GMO. Rick's Garden Center often carries it.
- Seed Savers Exchange (Decorah, Iowa) (563) 382-5990 www.seedsavers.org A nonprofit organization dedicated to preserving heirloom seed. Founded in 1975 by the Whealy family to preserve seed varieties grown by their grandparents and neighbors. Interesting website. 890-acre Heritage Farm, where they grow seed, is open to the public.
- Seeds from Italy (Kansas) (785) 748-0959 www.growitalian.com The exclusive mail-order distributor for Franchi Seeds in the U.S. Franchi Seeds is Italy's oldest family-owned seed company since 1783. All of the seed is packaged in Italy and a vast majority of the seed is grown in Italy on family farms that have been doing business with the Franchi family for decades. Generous amount of seed in packet. Seed remains viable for a surprisingly long time.
- Territorial Seed Company (Oregon) www.territorialseed.com (800) 626-0866. Offers a huge variety of vegetables and herbs, a great catalog for greens. A favorite of Bill Harmon; somewhat pricey.

Charmaine Nymann Community Garden

Plot Map

Park Admin
Bldg &
Restrooms



PARKING LOT

		15	14W	14E	13W	13E	12W	12E	Gate	CNCG Sign	11W	11E	10W	10E	
A				*				*						*	
B															
C				*				*						*	
D															
Gate															
E				*				*						*	
F															
G				*				*						*	
H				*				*						*	
I															

Gate

9W	9E	8W	8E	Gate	7W	7E	6W	6E	5W	5E	4W	4E	
			*					*				*	A
													B
			*					*				*	C
													D
			*					*					E
													F
			*					*				*	G
			*					*				*	H
													I

Gate

GATE