

Vegetables and Herbs To Grow in the Fall in North Texas

Fall is the best season to grow vegetables in North Texas. Many people from other parts of the country are accustomed to growing vegetables in the spring, but in North Texas spring planting is often delayed by wet or cold weather and then plants are exposed to too-hot weather before they mature. In the fall, the weather is not as unpredictable and rainfall is more plentiful, but variety selection is important because early maturing varieties yield a bountiful harvest before cold weather arrives.

Top Ten Vegetable and Herb Garden Tips

1. Site the garden in full sun with access to a water supply.
2. Grow vegetables in raised beds to keep pathway weeds out of the growing bed, prevent soil compaction, provide good drainage, and serve as a barrier to pests like slugs.
3. Amend the soil with compost or other well aged organic matter.
4. Set transplants in the garden at the same depth they were growing in the container (with a few exceptions).
5. Mulch! It conserves moisture, reduces weeds, keeps the soil cool and keeps plants cleaner. Keep mulch on top of the soil not mixed into the soil.
6. Fertilize on a regular basis for the best yields.
7. Spend time in the garden. Taking a stroll through the garden every day will alert you to insect and disease problems early enough that action can be taken.
8. Harvest regularly. Vegetables are more flavorful and tender when young and regular picking encourages plants to keep producing.
9. When the forecast predicts weather extremes, protect plants with row covers or frost cloth.
10. Grow your own transplants. More varieties are available from seed and you can be sure plants have been raised without the use of chemicals.

Vegetables and Herbs to Grow in the Fall:

Artichoke	Dill	Parsnips
Arugula	Fennel	Peas
Beans	Garlic	Potatoes
Beets	Greens	Radish
Bok Choy	Kale	Rutabaga
Broccoli	Kohlrabi	Sorrel
Brussels sprouts	Leeks	Spinach
Cabbage	Lettuce	Squash, Winter
Carrots	Mache	Tatsoi
Cauliflower	Mibuna	Tomatillo
Chard	Mizuna	Tomatoes
Chervil	Onions	Turnip
Chives	Pak Choi	
Cilantro	Parsley	

Growing Tips for Individual Vegetables:

Artichoke (Cynara scolymus)

Grows best in deep, fertile, well-drained, moist soil with morning sun and afternoon shade. Artichokes are heavy feeders and should be fertilized (with a product containing calcium and zinc) every two weeks while actively growing. Stop fertilizing when globes appear. Best to start seeds indoors 60 days before transplanting into the garden. Before sowing seeds, refrigerate seeds in damp peat moss for two weeks. Several weeks before planting into the garden, dig 6" deep trenches and line with compost. Set transplants at the same depth which they had been growing. Artichokes are perennial plants and will reliably produce for five years. In mid-summer cut the plant back to the ground and new shoots will appear in the fall. They are cold tolerant in zone 7, but if there is a threat of frost, mulch heavily (or cover with a cardboard box) to protect the crowns. Uncover promptly in spring to prevent plants from sprouting too soon. Renew plants every three years by cutting rooted suckers from the parent plants; replant in moist potting soil until established. Harvest by cutting buds before the petals open, leaving 3" of stem.

Arugula (Eruca sativa)

Grows best in fertile, well-drained, moist soil but will tolerate a wide range of growing conditions, including part shade. Arugula is a light feeder so if the planting bed has been amended with compost additional fertilization is not required. Sow seeds every 10-14

days for a continuous harvest until a hard frost. When it's too cold to grow outside, it is easily grown inside under lights. Harvest when leaves are small (2-3" long) and tender by removing individual leaves or pulling the entire plant.

Bean (*Phaseolus* spp.)

Grows best in moderately fertile, well-drained soil with consistent moisture (if the soil dries out, the harvest will be dramatically reduced). Beans are light feeders, but appreciate an application of a balanced fertilizer when plants bloom (avoid high nitrogen fertilizers). Beans are divided by growth habit. Bush types are generally self-supporting. Pole beans have twining vines that can grow to 15' and need a sturdy support. Runner beans are similar to pole beans and half-runner beans fall somewhere in between pole and bush beans. For a continuous supply of beans, sow a small number of seeds every two weeks. Beans are best harvested immature, when beans have not fully developed and are pencil-sized (unless growing soup beans which should be left on the plant to dry completely). Snap or cut pods from the plant and store in a moisture proof, airtight container in the refrigerator; beans will toughen even when stored properly. Harvest regularly to keep the plants producing. Beans are sensitive to frost.

Beet (*Beta vulgaris*)

Grows best in moist, rich, well-drained, deep soil and tolerates part shade. Beets are moderate feeders, but avoid high nitrogen fertilizers. Soak seeds overnight before planting, and a sprinkling of superphosphate in the hole when planting helps with germination. Thinning is necessary as there are more than one seed in each capsule; thin early to 4-6" apart. Any cultivation around plants should be gentle; beets have shallow roots that are easily damaged. Sow small amounts of seed every two weeks. Beets can survive frost and almost freezing temperatures. Did you know that both the roots and greens of beets are edible? The greens actually have more nutritional value than the roots. Harvest greens when 6" or smaller for best taste. Harvest roots when 1" in diameter, leaving every other one. When cutting, leave 1" of stem and store the greens separately.

Bok Choy/Pak Choi (*Brassica rapa* var. *chinensis*)

Grows best in deep, loose, moist, well-drained soil amended with compost. Bok Choy is a heavy feeder. Fertilize with a balanced fertilizer two weeks after planting, and every two weeks thereafter. Will tolerate part shade. After seedlings emerge, cover with a light mulch of shredded leaves. Harvest baby leaves as needed or wait until full maturity to cut the fully formed head at the soil line.

Broccoli (*Brassica oleracea* var. *italica*)

Grows best in moist, rich, well-drained, deep soil amended with compost. Broccoli is a heavy feeder. Before planting add 3" of organic matter and till in to a depth of 10-12". Best to start seeds indoors in mid-July. When seedlings are 6" tall with 2-4 true leaves, transplant into the garden, setting plants 1-2" deeper than they grew in the pot. Side dress with fertilizer two weeks after transplanting and repeat monthly until a week before harvesting. The secret is to grow plants fast and strong; a bigger plant equals

a bigger head. Protect plants from temperature extremes with row covers. Harvest when the buds are tight and the very first flower shows. Cut 4-6" below the head at an angle, leaving the side sprouts for a later harvest.

Brussels sprouts (*Brassica oleracea* var. *gemmifera*)

Grows best in moist, rich, well-drained, deep soil amended with compost. Brussels sprouts are heavy feeders. Before planting add 3" of organic matter and till in to a depth of 10-12". Best to start seeds indoors in mid-July. When seedlings are 5-7" tall, transplant into the garden, setting plants deeper than they grew originally, with the lowest leaves just above the soil. Side dress with fertilizer two weeks after transplanting and repeat monthly. Pinch out the growing tip to encourage side branching and remove yellowing leaves to allow space for sprouts to form. It may take up to 3-4 months for sprouts to begin appearing between the leaves and the main stem. When sprouts are 1" in diameter and the lower leaves begin to turn yellow cut off the lower leaves and remove the sprouts with a twisting motion. Sprouts will continue to form higher up the stem as the plant grows.

Cabbage (*Brassica oleracea* var. *capitata*)

Grows best in moist, rich, well-drained, deep soil amended with compost. Cabbage is a heavy feeder. Best to start seeds indoors 5-6 weeks before transplanting into the garden. When transplanting, set so the stem is covered up to the first leaves. Before planting add 3" of organic matter and till in to a depth of 10-12". Side dress with fertilizer three weeks after planting, and every three weeks thereafter. May take 5-7 months to form a head. Mulch to keep the soil moist; uneven watering can cause a sudden growth spurt that will make the developing head split. If the head starts to crack, twist the plant a half turn and pull up to slightly dislodge the roots to slow the plant growth. Harvest when the head becomes firm. Leave the stalks and roots in place to develop into a second crop of small heads. Cabbage tolerates temperatures in the 20's, but will benefit from being protected with frost cloth during extended cold spells.

Carrots (*Daucus carota*)

Grows best in deep, loose, well-drained soil amended with compost. Carrots are light feeders; it's especially important to avoid high nitrogen fertilizers to avoid lush foliage and small root production. Seeds are small and need light to germinate (taking as long as 21 days) so cover sparsely with seed starting mix or vermiculite and water gently. Many gardeners mix in a few radish or lettuce seeds to mark the row. Thin seedlings to 1" apart when the tops are 2" high and thin again two weeks later to 3" apart when 4" tall. Fertilize after the second thinning and fertilize again when 8" tall. Sow a row every 2-3 weeks for a continuous supply. Stress (too hot, too cold, too dry) will produce woody carrots with a bitter taste. Never let the soil dry out. Cover carrot crowns, which push up through the soil as they grow, with mulch to prevent them from becoming green and bitter. Harvest at any size; the thickness of the root poking out of the top of the soil is a good indication of the size of the carrot. Pull every other root so that some can grow larger. Harvest the entire crop before the first predicted frost. Before storing in the refrigerator, twist off the foliage and remove excess soil, but don't wash them.

Cauliflower (*Brassica oleracea* var. botrytis)

Grows best in moist, rich, deep, well-drained soil amended with compost. Cauliflower is a heavy feeder. Best to start seedlings indoors 5-6 weeks before transplanting into the garden. Before planting add 3" of organic matter and till in to a depth of 10-12". Side dress with fertilizer three weeks after planting, and every three weeks thereafter. When the head starts to form, gather the longest leaves over the head and tie them together. This is called blanching and shades the head to prevent it from turning green or brown. Once the blanching process begins, avoid splashing water on the head or leaves. Harvest when the buds are tight and unopened. With a sharp knife, cut them off just below the head, along with a few leaves to protect the curds. Cauliflower is sensitive to extreme temperatures but can survive a frost unless the heads thaw and freeze again.

Chard, Swiss (*Beta vulgaris*)

Grows best in moist, rich, well-drained soil that has been amended with compost. Swiss chard is a light feeder, so if the planting bed was amended with compost it may not need additional fertilizer, but plants will appreciate a fertilization with alfalfa meal or fish emulsion when they are 6" tall. If the chard is struggling to grow, add a small amount of high nitrogen fertilizer. Swiss chard is very forgiving, growing best in cool weather but tolerates heat and light freeze if adequate moisture is provided. Chard will also tolerate part shade. Soak seeds overnight for best germination. Harvest can begin when leaves are 6-8" tall; cut leaves 1" from the base of the plant.

Chervil (*Anthriscus cerefolium*)

Grows best in moist, rich, well-drained soil in part shade. Even in the fall, the plants may bolt, so plant small, successive crops often for a continual supply. It will overwinter if grown in a cold frame. Harvest individual stems as needed, cutting close to the soil line.

Chives (*Allium schoenoprasum*)

Grows best in moist, rich, well-drained soil amended with compost. Chives will tolerate part shade. Best started indoors by sowing seed thickly in a shallow tray; when seedlings are 3-4" tall, cut the contents of the tray into 2" cubes and plant into the garden. To keep stems growing vigorously, apply a balanced fertilizer two weeks after planting and again a month later. Harvest individual stems by cutting to the ground (but do not remove more than 1/3 of the plant at one time).

Cilantro (*Coriandrum sativum*)

Grows best in moist, rich, well-drained soil in part shade. Cilantro is a light feeder and if the planting bed is amended with organic matter should not need additional fertilization. Seeds need firm contact with the soil to germinate; it's helpful to step on them after planting. The plants most critical need for moisture is during germination, after that they don't need much water. Plant a small amount of seed every 10-14 days for a steady supply of fresh leaves. Harvest no more than 1/3 of the plant at one time, cutting stems at the ground.

Collard Greens (*Brassica oleracea* var. *acephala*)

Grows best in moist, rich, well-drained soil, amended with organic matter. Greens are heavy feeders and benefit from fertilizing with a balanced fertilizer 30 days after germination and then every two weeks thereafter. Collards will tolerate part sun and temperatures down to 5 degrees (the cold actually makes the leaves more flavorful). Plant short rows 10 days apart. Start picking outer leaves when plants are one foot tall; harvest leaves from low on the stem, and work your way up the stalk.

Dill (*Anethum graveolens*)

Grows best in well-drained soil amended with organic matter. Allow the soil to completely dry between watering, then soak thoroughly. Dill is the larval food for Tiger Swallowtail Butterflies, so plant enough to feed yourself and the butterflies. Dill can be harvested at any time that it has grown enough to produce five leaves. Harvest no more than 1/3 of the plant at one time and cut the stems to the ground. If growing for seed, allow the seed capsules to completely dry.

Fennel, Florence (*Foeniculum vulgare* var. *azoricum*)

Grows best in rich, well-drained soil. Fennel is a moderate feeder and benefits from fertilizing with a balanced fertilizer six weeks after germination and then monthly thereafter. It tolerates some heat and light frost, but does best when it reaches maturity in cool weather. For the best bulbs, grow the plant fast, providing plenty of water. Space seeds 3" apart for baby bulbs and 8" apart for full size bulbs. When bulbs have swollen to 1" thick, blanch by drawing soil up around the stem. Harvest by cutting bulbs at ground level with a sharp knife.

Garlic (*Allium ophioscorodon*)

Grows best in loose, moderately rich, well-drained soil. Garlic is a light feeder and if the planting bed is amended with organic matter should not need additional fertilization. Soft-neck varieties are more tolerant of difficult soil and will tolerate heat better than hard-neck varieties. If growing from bulbs from the grocery store, choose those labeled organic because they won't have been treated with chemicals that may delay sprouting. When the foliage is 6" tall, fertilize with a high nitrogen fertilizer and apply a layer of organic mulch. When the tops turn yellow and start to droop, stop watering and push over the tops. Three to four days later, pull the bulbs (leaving the papery wrappers, tops and roots intact) and allow them to cure in the sun for two weeks. Store in a warm, dark, dry area where temperatures don't exceed 80 degrees.

Greens (*Brassica oleracea* spp.)

Grow best in moist, rich, well-drained soil, amended with organic matter. Greens are heavy feeders and benefit from fertilizing with a high nitrogen fertilizer 30 days after germination and then every two weeks thereafter. Greens are grown for their leaves, and the healthiest and tastiest greens are those that grow quickly. Some greens, especially kale, can withstand temperatures below freezing

and can be grown through the winter. Mulch thickly when the ground freezes and you can begin harvesting again in early spring. Plant short rows 10 days apart. Small plants that need to be thinned, cut the entire plant 4" above the ground (it will often sprout back). For larger plants, harvest lower leaves when 6-10" long before they yellow.

Kale (*Brassica oleracea sabellica*)

Grows best in well-drained soil amended with organic matter. Plants will tolerate partial shade and freezing temperatures. Extremely hardy and will overwinter in all but the coldest winters. Flavor is sweeter after the first frost. Plant short rows every 10 days. Keep moist and fertilize after 30 days of seedling emergence with a high nitrogen fertilizer. Recommended to start indoors and transplant out. Harvest the entire plant when it reaches a good size, or remove lower leaves and allow the plant to continue growing.

Kohlrabi (*Brassica oleracea* var. *gonglodes*)

Grows best in moist, well-drained soil, amended with organic matter and potassium. It is best to sow plants directly because the young roots are sensitive to disturbance. Plants can tolerate light frost. Continue to sow seed every three weeks. Most varieties are ready to harvest in six to nine weeks when the bulbs are 2-3" in diameter. Cut the stem 1-2" below the bulb, trimming off the leaves to use in salads or for cooked greens. Store in the refrigerator for up to one month.

Leek (*Allium ampeloprasum*)

Grows best in moist, loose, well-drained soil rich in organic matter and nitrogen (add cottonseed meal before planting). Leeks are heavy feeders and benefit from a half strength dose of liquid fertilizer or compost tea every two weeks. Keep moist, but not wet. Recommended to start indoors and transplant out when transplants grow to pencil thickness. When bulbs begin to form, pull soil away so they can easily expand. To promote long white stems, hill up soil or mulch around the lower 2-3" of the stem. Cold tolerant to 20 degrees and can be left in the garden until ready to use

Lettuce (*Lactuca sativa*)

Grows best in moist, rich, well-drained soil amended with organic matter. There are various types of lettuce (looseleaf or butterhead, Romaine or cos, and crisp head). Looseleaf or butterhead varieties are the easiest to grow; crisp head, or iceberg, is very difficult to grow in our climate. Seeds need light to germinate; sprinkle seed on the soil and gently press them into the soil. Sow small amounts of seeds every 10-14 days, thinning when plants have four leaves or are 3" tall. The secret to success is to grow leaves rapidly with plenty of water and regular high nitrogen fertilizer. Easily grown indoors under lights year round. Harvest outer leaves so inner leaves continue to grow, or cut the plant 1" above the crown and fertilize lightly so leaves will re-grow. Harvest early in the morning and condition in an ice water bath before storing in the refrigerator.

Mache (*Valeriana locusta*)

Grows best in moist, rich, well-drained soil amended with organic matter. Sow seeds thickly and thin every other plant when 2-3" wide. Sow small amounts of seed every 10-14 days. Extremely cold tolerant. Harvest individual leaves when small by removing individual leaves or cutting the entire rosette at soil level.

Mibuna (*Brassica rapa* var. japonica)

Grows best in moist, rich, well-drained soil amended with organic matter. Sow seeds thickly and thin every other plant when 1" tall. Sow small amounts of seed every 14-21 days. Can tolerate temperatures to 10 degrees. Harvest individual leaves when 10" tall or cut the entire head at soil level.

Mizuna (*Brassica rapa* var. niposinicia)

Grows best in moist, rich, well-drained soil amended with organic matter. Sow seeds thickly and thin every other plant when 1" tall. Sow small amounts of seed every 10-14 days. Can tolerate cold weather, but is tolerant of heat as well. Harvest individual leaves when 2" in length and allow the plant to grow, or cut the plant 1" above the crown and fertilize lightly so leaves will re-grow.

Mustard Greens (*Brassica juncea*)

Grows best in moist, rich, well-drained soil amended with organic matter. Mustard greens are heavy feeders and benefit from fertilizing with a balanced fertilizer 30 days after germination and then every two weeks thereafter. They will tolerate part shade, and while not as hardy as kale and collard greens, they will survive temperatures in the mid-20's. Harvest by picking individual young leaves, or cut down the entire plant. Plant short rows 10 days apart for a steady supply of young leaves.

Onion (*Allium cepa*)

Grows best in loose, moist (but not wet) soil rich in organic matter. Onions are moderate feeders; when the plants have 5-6 leaves, apply a balanced fertilizer (too much nitrogen will encourage leafy growth and small bulbs). Onions can be grown from seeds, sets or transplants. Seed is best started indoors and transplanted into the garden when seedlings are pencil sized. Before planting, dig a trench 5-6" deep and add a layer of complete fertilizer, fill the trench with soil and rake smooth. Plant transplants no deeper than ¾". Initially space 2" apart and thin every other plant to use as scallions. When bulbs begin to form, pull soil away so they can easily expand; by harvest time only ½ of the bulb should be in the ground. Bulbs will start forming when new growth from the center stops. At that point, cut back on the amount of water. Pinch off any flower stalks that appear. Harvest when the tops have fallen over (leaving tops and roots intact). Pull the bulbs and leave in the sun for about a week, then spread them on newspaper to dry in a dark place for 2-3 weeks. Trim tops to 1-1/2" above the bulb and store in a cool, well ventilated area. Onions are day length

sensitive (which means that the bulb forming process is triggered by the amount of daylight). Short day varieties perform best in North Texas.

Bunching or multiplier onions are similar to shallots, but the bulbs are somewhat larger (up to 3" in diameter) and produce a cluster of bulbs that are joined at the base. Plant them in early to mid-October and allow them to overwinter in the garden. They are planted in a similar way as regular onions except that they are planted from sets just deep enough for the small bulbs to be level with the soil surface and 3-4" apart. Choose bulbs that are no larger than 3/4" in diameter as plants grown from large sets tend to produce onions with thick necks. Bunching onions can be harvested as soon as they reach the size you desire; the tender new foliage can be snipped to add a mild onion flavor to food.

Parsley (*Petroselinum crispum*)

Grows best in moist, rich, well-drained soil amended with compost. There are two types: curled and flat leaf. Most cooks agree that flat leaf parsley has a more appealing flavor. Parsley is a heavy feeder, appreciating an application of a high nitrogen fertilizer every two to three weeks. Parsley can be tricky to grow from seed as it germinates slowly (as long as 4-6 weeks). Soak seeds in warm water prior to sowing to improve the chances of germination and water with hot water until germination occurs. Seeds need firm contact with the soil to germinate; it's helpful to step on them after planting. Although parsley will grow for two years (it is a biennial) it is best to start new plants annually as the flavor of the leaves of second year plants can be bitter. Plants will tolerate part shade and a light frost, but not a hard freeze. Harvest as needed by cutting individual sprigs at the soil line. Parsley is the larval food for the Eastern Black Swallowtail Butterfly, so plant enough for you and the butterflies.

Parsnip (*Pastinaca sativa*)

Grows best in deep, loose, moist, well-drained soil amended with compost. Seeds are small and need light to germinate (taking as long as 21 days) so cover sparsely with seed starting mix or vermiculite and water gently. The seed is not long lived and should be purchased fresh each season. Soak the seed to encourage germination, but even then germination will be uneven. Many gardeners mix in a few radish or lettuce seeds to mark the row. Fertilize after the second thinning and fertilize again when 8" tall. Sow a row every 2-3 weeks for a continuous supply. Harvest roots after a hard frost (for the best flavor) or mulch heavily to leave in the ground over the winter. Parsnips are best dug, not pulled.

Pea (*Pisum sativum*)

Grows best in average, well-drained soil amended with compost and a site protected from wind. Peas are light feeders, but appreciate an application of fertilizer before planting and then again when the plants bloom. To plant, create a furrow 8" deep and lightly scatter a balanced fertilizer in the furrow; cover with 2" of soil and plant the seeds. As the peas grow, gradually fill the furrow. There are three types of peas: shell or English peas are grown for the interior peas; snap and snow peas have crisp, edible pods and sweet, juicy peas; Southern peas can be eaten fresh or left to dry and store. All types of pea plants benefit from a trellis or other support.

Harvest when the peas inside pods are beginning to plump, and pick daily to keep the vines producing. Soup peas can be left on the vines until completely dry.

Potato, Irish (*Solanum tuberosum*)

Grow best in loose, moist, rich, well-drained soil amended with compost. Potatoes are heavy feeders and need adequate fertilizer early in the season so it's best applied before and after planting. Dig a trench 5" deep and lightly scatter a balanced fertilizer in the trench. Cover with 2" of soil and plant the small potatoes. Cover the potatoes with 3" of soil and spread a generous layer of fertilizer over the top of the soil. When plants reach 6-8" tall, fertilize again and add 2" of soil or mulch at the base of the stem (enlarging tubers should not be exposed to sunlight). Potatoes are generally propagated from pieces of tuber which have one or more buds (called eyes), but for fall planting, it's best to use whole (uncut) small (no more than 2" diameter) potatoes to avoid rotting. Potatoes have a rest period that must be broken before they will sprout. Store seeds under warm, damp conditions for two weeks before planting. Purchase certified disease free seeds. Seed is not always available in the fall; purchase extra seeds in the spring and store in a cool, humid place (like a refrigerator crisper drawer) until needed. Blossoming plants are a sign that the first potatoes are ready to harvest; pull aside the earth around the base of the plants and gently pick off cooking sized tubers. Once the foliage starts to wither and die the tubers will be fully grown; carefully dig under the plants and lift gently. Dust off the soil and allow the tubers to completely dry before storing in a cool, dark, well ventilated place. Do not store tubers with bruised skin. If garden space is at a premium, grow a crop in black plastic trash bags or large plastic tree containers.

Radish (*Raphanus sativus*)

Grows best in loose, well-drained soil that has been amended with compost. Radishes are light feeders; especially avoid high nitrogen fertilizer that will produce lush foliage and small roots. Plant short rows one week apart, or interplant amongst broccoli or onions. Thin seedlings within 2-3 days of emerging. Harvest when 2-3" in diameter. Roots will keep crisp longer in the refrigerator if they are tempered in an ice bath before storing.

Rutabaga (*Brassica napobrassica*)

Grows best in loose, well-drained soil that has been amended with compost. They are light feeders, but if black heart has been a problem in the past, work kelp meal or other sources of boron into the soil prior to planting. Harvest when the roots are 4-5" in diameter. Ideally rutabagas should be left in the ground until the roots have been exposed to a few weeks of cool weather. They can be left in the garden over the winter if covered with a thick mulch and harvested as needed.

Sorrel (*Rumex acetosa*)

Grows best in moist, rich, well-drained soil that has been amended with compost. Sorrel is a perennial and usually produces for three to four years, but can also be grown as an annual. It will tolerate some part shade. It is best to harvest individual leaves, or cut the plant to the ground when ready to use in salads and soups as it does not store well.

Spinach (*Spinacia oleracea*):

Grows best in deep, loose, well-drained soil that has been amended with organic matter. There are two types: smooth and crinkled leaf; the crinkled is the variety to grow in the fall. It is best to plant several short rows 10-14 days apart. Seed doesn't store well, so buy fresh seed every year. To improve germination, soak seed in water for one to two days in the refrigerator and assure that seeds make good contact with the soil. Sow thickly as the seeds do not germinate well in warm soil. To increase drainage, plant seeds on 4" high mounds, with a band of balanced fertilizer 3" under the mound. Apply a high nitrogen fertilizer 30 days after seedlings emerge and continue every 30 days until all plants are harvested. Unlike most greens, spinach has a long tap root, so the soil must be worked deeply and seedlings do not transplant well. Mulch to keep the leaves off the ground. Harvest when 6-8" tall, clipping 1-2" above the crown and fertilize lightly so leaves will re-grow. When weather is warm, temper leaves in an ice bath before storing. Spinach can be grown all winter long if protected with frost cloth or grown in a cold frame.

Squash, Winter (*Cucurbita maxima*)

Grows best in well-drained soil with the addition of compost. Squash is a moderate feeder and benefits from a balanced fertilizer under the soil at planting, and when blooms first appear, sprinkle a high nitrogen fertilizer around each hill. To plant, create a raised hill at least 6" high. Harvest according to the variety, but in general when the rinds are hard and cannot be scratched with a fingernail squash is mature. Cut with a sharp knife, leaving 1-2" of stem and handle them carefully to avoid bruising (which will reduce storage time). To store, brush off the dirt (but do not wash) and place in a single layer in a cool, dry area.

Tatsoi (*Brassica narinosa*)

Grows best in moist, rich, well-drained soil amended with organic matter. Sow seeds thickly and thin every other plant when 1" tall. Sow small amounts of seed every 14-21 days. Tatsoi can tolerate temperatures to 10 degrees. Harvest individual leaves as soon as three weeks after sowing, or cut the entire head at soil level when a sizable rosette has formed.

Tomatillo (*Physalis philadelphica/ ixocarpa*)

Grows best in rich, well-drained soil with consistent moisture and the addition of compost. Tomatillos are heavy feeders and should be watered with a water-soluble plant food at half the label recommendation at planting and three weeks later with a high nitrogen fertilizer. Repeat every three weeks until frost kills the plant. Tomatillo grows and sets fruit best when the temperature is warm, but

below 80 degrees. Plants benefit from staking or caging to keep them off the ground. Harvest when the light brown papery husk has opened to reveal plump fruit.

Tomato (*Lycopersicon esculentum*)

Grows best in deep, rich, well-drained soil with consistent moisture and the addition of compost. Tomatoes are heavy feeders. When preparing the soil, add at least 6" of compost. Other recommended soil additives include cottonseed meal, kelp, seaweed and molasses. Best to start seeds indoors and transplant to the garden when transplants are 4-6" tall, dark green and stocky. When setting out transplants, plant slightly deeper than originally grown in the container (the lowest set of leaves should be at soil level), leaving enough room to add 1 tablespoon of superphosphate or Epsom salts covered with 2" of soil. Wrap a cardboard or aluminum foil collar around the stem that is 1" below the soil and 2" above. Water transplants well with a starter solution (you can make your own by dissolving 2 tablespoons of a granular 12-24-12 fertilizer in one gallon of water and applying one pint per plant). Apply a thick layer of mulch to keep the soil cool. 5-7 days after transplants are planted, apply a dilute fertilizer solution (1/2 recommended strength) or liquid seaweed/fish emulsion solution weekly. When the first fruits are the size of a nickel, fertilize with liquid seaweed/fish emulsion every two weeks.

Determinate varieties grow to a specified height and fruits ripen within a two week period which makes them ideal if you are planning to preserve the harvest; the compact bush doesn't need staking. Indeterminate varieties continue to grow and produce fruit all season; they need a sturdy support. To avoid harming the roots, put in stakes at the time of planting; 6' long stakes set 10" deep is sufficient. Prune by removing suckers below the first cluster of flowers where each leaf meets the main stem. Harvest tomatoes when they are pink for increased yield and less cracking. Temperature affects fruit set; warm, but below 92 degrees is ideal. Harvest can be extended by wrapping tomato cages with fiber row cover (tie off the top if frost threatens).

Turnip (*Brassica rapa* subsp. *rapa*)

Grows best in loose, deep, well-drained soil that has been amended with compost. Turnips are light feeders; especially avoid high nitrogen fertilizer that will produce lush foliage and small roots. When plants are 5" tall, mulch thickly; no extra fertilizer is necessary. Harvest greens when they're large enough to pick but only remove two or three leaves per plant at a time. Harvest roots when small and tender (1-3" in diameter) by hand pulling. Temper in an ice bath before storing in the refrigerator. To store roots, twist off the tops, leaving 1/2" of stem and place in a cool, dark place; don't wash off soil that clings to the roots. Plants can be harvested as needed throughout the winter if heavily mulched.

Other Growing Tips:

Planting dates are ranges and can vary from year to year. It is best to plant according to the ideal soil temperature. Invest in a soil temperature thermometer and test the soil on a regular basis.

After planting seeds, keep the soil evenly moist until germination. After seedlings emerge, reduce the frequency of watering so that the plants gradually get tougher.

Some vegetables are best direct seeded in the ground where they will grow (arugula, beans, beets, bok choy, carrots, chervil, dill, Florence fennel, greens, parsnips, peas, radish, rutabaga, sorrel, spinach and turnip), and some vegetables are best started indoors and planted into the garden as transplants (artichoke, broccoli, Brussels sprouts, cabbage, cauliflower, onions, potatoes and tomatoes). Some vegetables can be grown either way (chard, cilantro, kale, kohlrabi, leek, lettuce and tomatillos).

Practice crop rotation (not planting the same vegetable in the same space each year) to maximize production and reduce insects and diseases. The process can be simple or complex and ideally crops should be rotated so that the same family is not planted in the same place for two seasons. However, this is impractical for small gardens. A simplified approach is to divide vegetable plants into four groups based on their nutritional needs: leaf (nitrogen), fruit (phosphorus), root (potassium) and legume (fixes nitrogen). Leaf plants are planted where legumes were the previous season because legumes fix nitrogen in the soil and leaf plants need large amounts of nitrogen. Fruit plants follow leaf plants because they need phosphorous and too much nitrogen causes them to have limited fruit production. Root plants follow fruits because they need potassium and less nitrogen than fruit plants. Legumes follow the root plants to put nitrogen back into the soil.

Vegetables that fall into these categories include:

Leaf (arugula, bok choy, broccoli, Brussels sprouts, cabbage, cauliflower, collard greens, kale, kohlrabi, lettuce, mache, mibuna, mizuna, mustard greens, sorrel, spinach, Swiss chard and tatsoi)

Fruit (cucumber, squash, tomatillo and tomato)

Root (beet, carrot, Florence fennel, garlic, leeks, onion, radish, rutabaga and turnip)

Legumes (beans, peas and potato)

Perennial vegetables and herbs (artichoke, chervil, chives, cilantro, dill and parsley) can stay in place, but will benefit from a yearly application of compost.

The best time to harvest is in the morning when temperatures are cooler. Most produce can simply be rinsed and stored in the refrigerator, but some vegetables benefit from conditioning (which is a soak in ice water) before storing. Pick fruits and vegetables frequently to encourage more blooms and to extend the harvest.

Maintain a garden journal to keep a record of planting information and to record favorite varieties, but try something new every season. A garden journal allows you to celebrate your successes and learn from your mistakes; expect some phenomenal successes and some dismal failures.

Happy Gardening!

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Collin County Master Gardener Class of 2002
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