K-STATE Research and Extension

# Vegetable Garden Planting Guide

MF315 revised

A well–planned, properly tended vegetable garden not only provides an excellent source of fresh, nutritious vegetables, but also relaxation and enjoyment for the entire family. With a few simple tools, a little space, and a desire to nurture plant growth, anyone can create a thriving vegetable garden. Even a 100-square-foot garden can produce a good portion of the vegetables for a family of four.

Successful gardening begins with proper planning. This includes knowing how much to plant, when to plant, and proper spacing, covered on the following pages. For more on this and other home gardening topics, see the *Kansas Garden Guide* (S51).

## Vegetable Yields

| Vegetables | Average crop expected per 10 feet | Approximate planting per person |
|---|---|---|
| Asparagus | 3 lb. | 10–15 plants |
| Beans, snap bush | 12 lb. | 15–16 feet |
| Beans, snap pole | 15 lb. | 5–6 feet |
| Beans, lima bush | 2.5 lb. shelled | 10–15 feet |
| Beans, lima pole | 5 lb. shelled | 5–6 feet |
| Beets | 15 lb. | 5–10 feet |
| Broccoli | 10 lb. | 3–5 plants |
| Brussels sprouts | 7.5 lb. | 2–5 plants |
| Cabbage | 15 lb. | 3–4 plants |
| Cabbage, Chinese | 8 heads | 3–10 feet |
| Carrots | 10 lb. | 5–10 feet |
| Cauliflower | 10 lb. | 3–5 plants |
| Celeriac | 6 lb. | 5 feet |
| Celery | 18 stalks | 10 stalks |
| Chard, Swiss | 7.5 lb. | 3–5 plants |
| Collards and kale | 10 lb. | 5–10 feet |
| Corn, sweet | 1 dozen | 10–15 feet |
| Cucumbers | 12 lb. | 1–2 hills |
| Eggplant | 10 lb. | 2–3 plants |
| Garlic | 4 lb. | 1–5 feet |
| Kohlrabi | 7.5 lb. | 3–5 feet |
| Lettuce, head | 10 heads | 10 feet |
| Lettuce, leaf | 5 lb. | 10 feet |

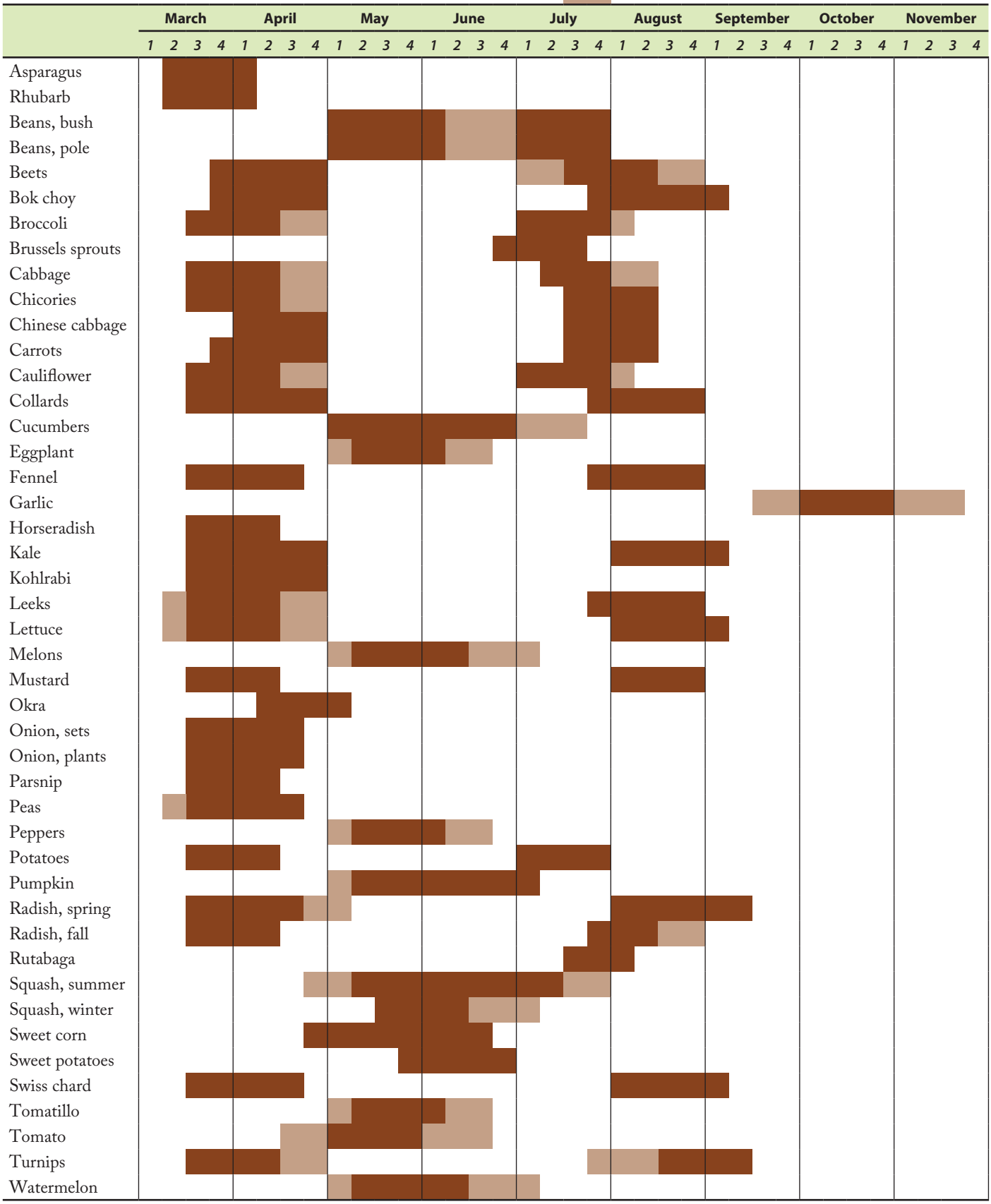
| Vegetables | Average crop expected per 10 feet | Approximate planting per person |
|---|---|---|
| Muskmelon (cantaloupe) | 10 fruits | 3–5 hills |
| Mustard | 10 lb. | 5–10 feet |
| Okra | 10 lb. | 4–6 feet |
| Onions (plants or sets) | 10 lb. | 3–5 feet |
| Onions (seed) | 10 lb. | 3–5 feet |
| Parsley | 3 lb. | 1–3 feet |
| Parsnips | 10 lb. | 5 feet |
| Peas, English | 2 lb. | 15–20 feet |
| Peas, southern | 4 lb. | 10–15 feet |
| Peppers | 6 lb. | 3–5 plants |
| Potatoes, Irish | 10 lb. | 50–100 feet |
| Potatoes, sweet | 10 lb. | 5–10 plants |
| Pumpkins | 10 lb. | 1–2 hills |
| Radishes | 10 bunches | 3–5 feet |
| Salsify | 10 lb. | 5 feet |
| Soybeans | 2 lb. | 50 feet |
| Spinach | 4–5 lb. | 5–10 feet |
| Squash, summer | 15 lb. | 2–3 hills |
| Squash, winter | 10 lb. | 1–3 hills |
| Tomatoes | 10 lb. | 3–5 plants |
| Turnip greens | 5–10 lb. | 5–10 feet |
| Turnip roots | 5–10 lb. | 5–10 feet |
| Watermelon | 4 fruit | 2–4 hills |

## Average Expected Planting Calendar

All planting windows are approximate and may need to be adjusted earlier or later depending on the weather each season, varieties chosen, preferred harvest quality, and your location in Kansas.

Primary expected planting window for most of Kansas

Marginal possible planting window depending on conditions



## Vegetable Crop Information

| Crop | Type of Planting | Days to First Harvest | Plants Per 10' Row* | Days to Germinate | Optimum Temperature (F) | Depth of Planting (In.) | Avg. Spacing Within Row (In.) | Avg. Spacing Between Rows (In.) | Frost Resistance |
|---|---|---|---|---|---|---|---|---|---|
| Asparagus | Perennial: Crowns | 2nd Season | 5-7 | - | — | 8 | 18-24 | 48 | Hardy |
| Asparagus | Seed: Transplant | 4th Season | 150 | 10 to 20 | 65-75 | 1 | 3 | 6 | Hardy |
| Rhubarb | Perennial: Crowns | 2nd Season | 3 | - | — | I | 36 | 35–48 | Hardy |
| Beans, Bush | Seeded | 50-60 | 30 | 5-8 | 70–85 | 2 | 3-5 | 36 | Tender |
| Beans, Pole | Seeded | 55-70 | 10-20 | 5-8 | 70-85 | 2 | 6-12 | 48-60 | Tender |
| Beets | Seeded | 50-65 | 40 | 7-10 | 50–60 | ½ | 2-3 | 18 | Half-Hardy |
| Bok Choy | Seed or Transplant | 40-55 | 10-30 | 6-8 | 50-60 | 1/2 | 4-12 | 18-24 | Half-Hardy |
| Broccoli | Transplant | (60-80) | 5-7 | (6-8) | (50–60) | (½) | 18–24 | 36 | Hardy |
| Brussels Sprouts | Transplant | (85-110) | 5-7 | (6-8) | (50–60) | (½) | 18-24 | 36 | Hardy |
| Cabbage | Transplant | (65-100) | 7-10 | (6-8) | (50–60) | (½) | 12-18 | 36 | Hardy |
| Chicories | Seed or Transplant | 45-75 | 10-40 | 10-21 | 55-68 | ⅛-¼ | 3-12 | 18-24 | Half-Hardy |
| Chinese Cabbage | Seed or Transplant | 48-80 | 7-10 | 5-7 | 55–70 | ½ | 12-18 | 36 | Half-Hardy |
| Carrots | Seeded | 54-80 | 60 | 10-12 | 55–70 | ½ | 1-2 | 18 | Half-Hardy |
| Cauliflower | Transplant | (45-80) | 5-7 | (6-8) | (55–70) | (½) | 18–24 | 36 | Half-Hardy |
| Collards | Seed or Transplant | (50-60) | 5-7 | 6-8 | 55-70 | 1/2 | 18-24 | 36 | Hardy |
| Cucumbers | Seed or Transplant | 45-65 | 5 | 5-8 | 75–85 | ½ –1 | 24 | 48–72 | Very Tender |
| Eggplant | Transplants | (50-75) | 5-7 | (8-12) | (75–85) | — | 18–24 | 36 | Very Tender |
| Fennel | Seed or Transplant | 80-90 | 20-30 | 6-12 | 50-70 | 1/4 | 4-6 | 12-15 | Hardy |
| Garlic | Sets | 140-160 | 20 | -- | — | [1] | 6 | 18–36 | Hardy |
| Horseradish | Roots | Fall | 7-10 | -- | — | 3–4 | 12-18 | 36 | Hardy |
| Kale | Seed or Transplant | 55-65 | 10-15 | 6-8 | 50–60 | ½ | 8-12 | 36 | Hardy |
| Kohlrabi | Seed or Transplant | 40-80 | 20-30 | 6-8 | (50–60) | (½) | 4-6 | 18–24 | Hardy |
| Leeks | Seed or Transplant | (75-120) | 20 | 7-10 | (50-75) | (¼) | 6 | 12-15 | Hardy |
| Lettuce | Seed or Transplant | 45-65 | 10-30 | 6-8 | 50–70 | ¼ | 4-12 | 18–24 | Half-Hardy |
| Melons | Seed or Transplant | 60-90 | 2-3 | 7-12 | 75–85 | 1–1½ | 18-24 | 48–72 | Very Tender |
| Mustard | Seeded | 40-60 | 30 | 6-8 | 50–60 | ½ | 2–4 | 18–24 | Hardy |
| Okra | Seeded | 50-60 | 7-10 | 6-12 | 75–85 | ½ | 12-18 | 36 | Very Tender |
| Onion (Sets) | Sets | 90-120 | 30 | -- | — | 1½ –2 | 3–4 | 12–24 | Hardy |
| Onion (Plants) | Transplants | (90-120) | 30 | -- | — | 1½ –2 | 3–4 | 12–24 | Hardy |

| Crop | Type of Planting | Days to First Harvest | Plants Per 10' Row* | Days to Germinate | Optimum Temperature (F) | Depth of Planting (In.) | Avg. Spacing Within Row (In.) | Avg. Spacing Between Rows (In.) | Frost Resistance |
|---|---|---|---|---|---|---|---|---|---|
| Parsnip | Seeded | 100-120 | 30 | 10-21 | 55–70 | ¼–½ | 2-4 | 18–24 | Hardy |
| Peas | Seeded | 50-80 | 30 | 7-10 | 50–65 | 2 | 2-4 | 12–24 | Hardy |
| Peppers | Transplants | (50-110) | 6-10 | (10-14) | (75–85) | (½) | 12-24 | 36 | Tender |
| Potatoes | Tuber Pieces | 70-90 | 10 | -- | 50–60 | 2–3 | 12 | 36 | Half-Hardy |
| Pumpkin | Seeded | 85-130 | 2 | 7-10 | 75–85 | 1 | 48-60 | 72–90 | Half-Tender |
| Radish, spring | Seeded | 25-40 | 40-60 | 4-6 | 50–60 | ½ | 2–3 | 12–18 | Hardy |
| Radish, fall | Seeded | 35-60 | 20-30 | 4-6 | 50-60 | 1/2 | 4-6 | 12-18 | Hardy |
| Rutabaga | Seeded | 90-120 | 20-30 | 5-10 | 50–60 | ½ | 4-6 | 18–24 | Hardy |
| Spinach | Seeded | 25-40 | 20-40 | 7-12 | 55–70 | 1 | 3-6 | 12–18 | Hardy |
| Squash—Summer | Seeded | 45-55 | 5 | 7-10 | 75–85 | 1 | 24 | 48–72 | Very Tender |
| Squash—Winter | Seeded | 80-105 | 2 | 7-10 | 75–85 | 1 | 48-60 | 96 | Very Tender |
| Sweet Corn | Seeded | 68-90 | 10-18 | 6-8 | 70–80 | 2 | 8-12 | 36 | Tender |
| Sweet Potatoes | Slips | 90-105 | 10 | -- | — | — | 12 | 36–48 | Very Tender |
| Swiss Chard | Seed or Transplant | 40-65 | 15-20 | 7-12 | 55–70 | ½–1 | 6–8 | 18–24 | Half-Tender |
| Tomatillo | Transplants | (60-75) | 3-4 | (7-14) | (75–85) | (1/2) | 36 | 36-60 | Very Tender |
| Tomato | Transplants | (52-120) | 3-5 | (7-10) | (75–85) | (½) | 24-36 | 36–48 | Tender |
| Turnips | Seeded | 40-50 | 30-60 | 5-10 | 60–70 | ½ | 2-4 | 12–18 | Hardy |
| Watermelon | Seed or Transplant | 65-90 | 2 | 8-12 | 80–90 | 1–2 | 48-60 | 72–90 | Very Tender |

( ) = Seeding information for indoor seed starting; allow for 4–8 weeks indoors.

* For seeded crops, you will usually need to plant more seeds than the final number of plants per row and thin after germination.

## Average Expected Harvest Calendar

All harvest windows are approximate and may need to be adjusted earlier or later depending on the weather each season, varieties chosen, preferred harvest quality, and your location in Kansas.

Primary expected harvest window for most of Kansas

Marginal possible harvest window depending on conditions

## Common Garden Problems*

| Symptom | Possible Causes | Corrective Measures |
|---|---|---|
| Plants stunted in growth; yellow color | Lack of soil fertility or abnormal soil pH | Fertilize and correct pH according to soil test. Use 3 to 4 pounds of fertilizer per 100 square feet in absence of soil test. |
| | Plants growing in compacted, poorly-drained soil. | Modify soil with organic matter. |
| | Insect or disease damage | Use a regular spray or dust program. |
| | Poor-quality seed or plants | Use high-quality seed or plants of recommended varieties. |
| Plants stunted in growth; sickly, purplish | Low temperature | Plant at proper time. Don't use light-colored mulch too early in the season. |
| Holes in leaves; leaves yellowish and drooping, or distorted in shape | Insect damage | Use recommended insecticides. |
| Plant leaves with spots; dead, dried areas; or powdery or rusty areas | Plant disease | Use resistant varieties, remove diseased plants when noticed, and use a regular spray. |
| Plants wilt even when water present | Soluble salts too high or root system damage | Have soil tested. Use soil insecticides. |
| Plants with weak root systems | Poor drainage | Use organic matter. |
| | Insect or nematode damage | Use recommended varieties and soil insecticides. |
| Plants tall, spindly and unproductive | Excessive shade | Relocate to sunny area. Keep weeds down. |
| | Excessive nitrogen | Reduce applications of nitrogen. |
| Blossom drop | Hot, dry periods | Use mulch and water. |
| | Low night temperatures | Avoid planting too early in spring. |
| | Overwatering or disease | Stop watering or use regular spray program. |
| Tomato leaf roll | Excessive pruning or soil moisture fluctuations | Remove suckers when small. Use mulches. |
| Leathery, dry, brown blemish on the blossom end of tomato fruit | Blossom end rot | Maintain a uniform soil moisture supply. Avoid overwatering and excessive nitrogen. |

*Learn more about common vegetable problems at http://hnr.k-state.edu/extension/info-center/plant-pest-problems.html

## Tips for a Successful Home Garden

- Use mulches to conserve moisture, control weeds, and reduce rots.
- Keep plants free of insects and diseases.
- Examine plants often to keep ahead of potential problems.
- Keep weeds out.
- Remove tomato suckers when they form (1 to 2 inches long.
- Sample soil and have it tested every three to four years.
- Apply fertilizer to garden area as recommended. See *Fertilizing Gardens in Kansas* (MF2320).
- Thin when plants are small.
- Avoid walking and working in the garden when the foliage and soil are wet.
- Wash and clean the sprayer well after each use.

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