



| CROP | APPROX. # SEEDS PER 100' ROW | APPROX. # SEEDS PER ACRE | POTENTIAL HARVEST PER 100' ROW | OPTIMUM SOIL TEMPERATURE | DAYS TO GERMINATION | SEED DEPTH | PLANT SPACING | ROW SPACING | IDEAL PH RANGE |
|---------------------|------------------------------|--------------------------|--------------------------------|--------------------------|---------------------|----------------|-------------------|-------------------|----------------|
| Amaranth, grain | 1.5M | 392M | 10 lbs | 18-24°C/64-75°F | 4-10 | 5mm (¼") | 25-35cm (10-14") | 50cm (20") | 6.0-7.5 |
| Artichoke* | N/A | N/A | 35+ heads | 21-27°C (70-80°F) | 10-21 | 5mm (¼") | 90-120cm (36-48") | 180cm (72") | 5.6-6.6 |
| Arugula | 1.2M | 348M | 27 lbs | 4-12°C (40-50°F) | 4-8 | 5mm (¼") | 10-15cm (4-6") | 45-60cm (18-24") | 6.5-7.0 |
| Asparagus* | N/A | N/A | 40 lbs | 21-30°C (70-85°F) | 14-56 | 1cm (½") | 45-60cm (18-24") | 90-120cm (36-48") | 6.5-7.0 |
| Beans, Broad | 450 | 98M | 12 lbs shelled beans | 10-21°C (50-70°F) | 10-14 | 5cm (2") | 10-15cm (4-6") | 60-90cm (24-36") | 6.0-6.5 |
| Beans, Bush | 800-1M | 232M-290M | 80-100 lbs | 21-32°C (70-90°F) | 6-10 | 2-5cm (1-2") | 5-10cm (2-4") | 45-60cm (18-24") | 6.0-6.5 |
| Beans, Pole | 400 | 43.5M | 150 lbs | 21-32°C (70-90°F) | 6-10 | 2-5cm (1-2") | 15-20cm (6-8") | 45-60cm (18-24") | 6.0-6.5 |
| Beans, Soya | 800 | 174M | 20 lbs | 21-32°C (70-90°F) | 8-16 | 2-5cm (1-2") | 5-10cm (2-4") | 60cm (24") | 5.8-6.2 |
| Beets | 600-1M | 436M | 40 lbs greens or 100 lbs roots | 10-26°C (50-80°F) | 5-12 | 1cm (½") | 5-10cm (2-4") | 30-45cm (12-18") | 6.0-6.8 |
| Broccoli | 170 | 30M | 75 lbs | 10-30°C (50-85°F) | 7-10 | 5mm (¼") | 45-60cm (18-24") | 75-90cm (30-36") | 6.0-6.8 |
| Brussels sprouts | 170 | 30M | 60 lbs | 10-30°C (50-85°F) | 7-10 | 5mm (¼") | 45-60cm (18-24") | 75-90cm (30-36") | 6.0-7.5 |
| Cabbage | 200 | 44M | 150 lbs | 10-30°C (50-85°F) | 7-10 | 5mm (¼") | 45-60cm (18-24") | 60-90cm (24-36") | 6.5-7.0 |
| Carrots | 2.4M | 1,044M | 100 lbs | 7-30°C (45-85°F) | 14-21 | 5mm (¼") | 4-10cm (1½-4") | 30-45cm (12-18") | 6.0-6.8 |
| Cauliflower | 200 | 44M | 90 lbs | 10-30°C (50-85°F) | 7-10 | 5mm (¼") | 45-60cm (18-24") | 75-90cm (30-36") | 6.0-6.8 |
| Celery/Celeriac* | N/A | N/A | 200 lbs | 15-24°C (60-75°F) | 20-30 | 5mm (¼") | 30cm (12") | 45cm (18") | 6.0-6.5 |
| Collards | 170 | 30M | 50 lbs | 10-30°C (50-85°F) | 7-10 | 5mm (¼") | 45-60cm (18-24") | 75-90cm (30-36") | 6.0-6.8 |
| Corn | 400 | 87M | up to 100 ears | 15-30°C (60-85°F) | 7-10 | 2-5cm (1-2") | 20-25cm (8-10") | 60-90cm (24-36") | 5.8-6.8 |
| Cucumbers | 240 | 35M | 120 lbs | 15-30°C (60-85°F) | 7-10 | 2cm (1") | 23cm (9") | 90cm (36") | 6.0-6.8 |
| Eggplant* | N/A | N/A | 100 lbs | 24-32°C (75-90°F) | 7-12 | 5mm-1cm (¼-½") | 45-60cm (18-24") | 60-90cm (24-36") | 5.5-6.0 |
| Endive/Radicchio | 140 | 40.6M | 100 heads | 10-22°C (50-72°F) | 2-15 | 5mm (¼") | 30-45cm (12-18") | 45cm (18") | 6.0-6.5 |
| Fennel, bulbing | 240 | 53M | 300 lbs | 10-25°C (50-75°F) | 10-14 | 1cm (½") | 15-30cm (6-12") | 60cm (24") | 5.5-7.0 |
| Kale | 170 | 30M | 75 lbs | 10-30°C (50-85°F) | 7-10 | 5mm (¼") | 30-45cm (12-18") | 75-90cm (30-36") | 6.0-6.8 |
| Kohlrabi | 360 | 104M | 50 lbs | 10-30°C (50-85°F) | 7-10 | 5mm (¼") | 10-15cm (4-6") | 30-45cm (12-18") | 6.0-6.8 |
| Leeks | 240 | 70M | 150 leeks | 10-25°C (50-75°F) | 10-12 | 5mm (¼") | 15-20cm (6-8") | 45cm (18") | 5.5-6.5 |
| Lettuce, Head | 200 | 58M | 100 heads (50 lbs) | 10-22°C (50-72°F) | 7-10 | 5mm-1cm (¼-½") | 30cm (12") | 45-90cm (18-36") | 6.0-6.5 |
| Lettuce, Leaf | 1.2M | 348M | 50 lbs | 10-22°C (50-72°F) | 7-10 | 5mm-1cm (¼-½") | 2-12cm (1-5") | 45-90cm (18-36") | 6.0-6.5 |
| Melons | 60 | 5.2M | 100 melons | 20-25°C (68-77°F) | 5-10 | 1cm (½") | 60-90cm (24-36") | 1.5-2m (5-6') | 6.0-6.8 |
| Mustard | 400 | 174M | 100 lbs | 21°C (70°F) | 5-10 | 5mm-1cm (¼-½") | 10-15cm (4-6") | 30-45cm (12-18") | 6.0-6.5 |
| Onions, bulbing | 260 | 76M | 100 lbs | 21-25°C (70-75°F) | 10-14 | 5mm-1cm (¼-½") | 12-15cm (5-6") | 45-75cm (18-30") | 5.5-6.5 |
| Onions scallions | 1.2M | 1,045M | 100 lbs | 21-25°C (70-75°F) | 10-14 | 5mm-1cm (¼-½") | 2-5cm (1-2") | 15cm (6") | 6.0-6.8 |
| Pac choi & choi sum | 260 | 114M | 100 lbs | 20-25°C (68-77°F) | 5-10 | 5mm-1cm (¼-½") | 15-20cm (6-8") | 30-45cm (12-18") | 6.0-6.8 |
| Parsnips | 440 | 128M | 75 lbs | 21°C (70°F) | 14-21 | 5mm-1cm (¼-½") | 7-10cm (3-4") | 45-90cm (18-36") | 6.0-6.8 |
| Peas | 1.2M | 260M | 20 lbs (shelled) | 18-21°C (65-70°F) | 7-14 | 2cm (1") | 2-7cm (1-3") | 60-90cm (24-36") | 5.8-7.0 |
| Peppers* | N/A | N/A | 50 lbs | 25-29°C (78-85°F) | 10-21 | 5mm-1cm (¼-½") | 30-60cm (12-24") | 45-60cm (18-24") | 5.5-6.0 |

*Not direct sown M=1,000 1 acre = 43-560 sq. feet



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|-------------------------|------------------------------|-----------------------------------|--------------------------------|--------------------------|---------------------|----------------|-------------------|--------------------|----------------|
| Potatoes | 100 seed potatoes (~8 lbs) | 21,800 seed potatoes (~1,800 lbs) | 100 lbs | min. 6°C (43°F) | N/A | 7-10cm (3-4") | 30cm (12") | 60cm (24") | 4.5-6.5 |
| Pumpkins | 60 | 6.5M | 300 lbs | 21-25°C (70-75°F) | 7-10 | 2cm (1") | 60-120cm (24-48") | 120-180cm (48-72") | 6.0-6.8 |
| Quinoa, grain | 160 | 42M | 10 lbs | 18-24°C (65-75°F) | 4-10 | 5mm (¼") | 25-35cm (10-14") | 50cm (20") | 6.0-7.5 |
| Radish | 1.2M | 522M | 100 bunches | 18-24°C (65-75°F) | 5-7 | 5mm (¼") | 2-5cm (1-2") | 30-45cm (12-18") | 6.0-6.8 |
| Radish, Daikon | 300 | 87M | 200 roots | 18-24°C (65-75°F) | 5-7 | 5mm (¼") | 10-15cm (4-6") | 45-60cm (18-24") | 6.0-6.8 |
| Rhubarb* | N/A | N/A | 250 lbs | 16-25°C (50-75°F) | 5-10 | 2cm (1") | 60-120cm (24-48") | 100-120cm (36-48") | 6.0-6.8 |
| Rutabaga | 300 | 65.4M | 150 lbs | 18-21°C (65-70°F) | 7-15 | 5mm-1cm (¼-½") | 10-15cm (4-6") | 60-75cm (24-30") | 6.0-6.8 |
| Salsify | 1.2M | 522M | 60 lbs | 21°C (70°F) | 7-21 | 1cm (½") | 5-10cm (2-4") | 30-45cm (12-18") | 6.0-6.8 |
| Spinach | 400 | 174M | 40 lbs | 21°C (70°F) | 7-14 | 2cm (1") | 7-15cm (3-6") | 30-45cm (12-18") | 6.0-6.5 |
| Spinach, New Zealand | 120 | 26M | 50 lbs | 25°C (75°F) | 10-15 | 5mm-1cm (¼-½") | 30-45cm (12-18") | 60cm (24") | 6.0-6. |
| Squash, Summer | 60 | 8.7M | 200 lbs | 24-30°C (75-85°F) | 7-14 | 2cm (1") | 45-60cm (18-24") | 90-120cm (36-48") | 6.0-6.8 |
| Squash, Winter | 60 | 6.5M | 200 lbs | 24-26°C (75-80°F) | 7-14 | 2cm (1") | 90-120cm (36-48") | 120-180cm (48-72") | 6.0-6.8 |
| Sui Choi (napa cabbage) | 200 | 44M | 60 heads | 20-24°C (68-75°F) | 5-10 | 5mm (¼") | 45-60cm (18-24") | 60-90cm (24-36") | 6.0-6.8 |
| Sunflower | 140 | 31M | 120+ heads | 12-21°C (55-70°F) | 10-14 | 1cm (½") | 30-45cm (12-18") | 60-75cm (24-30") | 6.5-7.0 |
| Swiss chard | 220 | 64M | 80 lbs | 21-25°C (70-75°F) | 7-14 | 1cm (½") | 15-30cm (6-12") | 45cm (18") | 6.0-6.5 |
| Tomatoes* | N/A | N/A | 150 lbs | 24-26°C (75-80°F) | 7-14 | 5mm-1cm (¼-½") | 60-90cm (24-36") | 90-120cm (36-48") | 6.0-6.5 |
| Turnips | 300 | 87M | 100 lbs greens or 50 lbs roots | 18-21°C (65-70°F) | 7-14 | 5mm-1cm (¼-½") | 10-15cm (4-6") | 45-60cm (18-24") | 6.0-6.8 |

*Not direct sown M=1,000 1 acre = 43-560 sq. feet

cover crops

Organic growers know soil must be kept healthy to grow healthy plants. When an area is not being used to grow food crops, it should be used to grow plants that enrich the soil before the next crop is planted. Be sure to use the right cover crop for the right job, and remember that they can be used in combination to perform several tasks at once. A fall planting of White Dutch Clover and Winter Wheat will fix nitrogen, and hold it for tilling under in the spring. Cover crops replenish soils in the following ways:

- replenish nitrogen and fix it in the soil
- provide winter habitat for beneficial insects
- prevent soil erosion from wind and rain
- loosen and aerate packed soil
- add organic matter when tilled under
- increase the water-holding capacity of soil
- compete with and prevent weed seeds
- hold nitrogen in leaves before being tilled under and returning it to the soil

| Nitrogen Fixer | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | SEEDS PER 1000 SQ. FEET | SEEDS PER ACRE | MAX. SEED DEPTH | GROWTH RATE |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|------------------|------------------|-------------|
| Crimson Clover | | | — | — | — | — | — | — | — | — | | 260 g 9 oz | 11.3 kg 25 lbs | 55 mm ¼" | Medium |
| Fava Beans | — | — | — | — | — | | | | — | — | | 1.3 kg 3 lbs | 57 kg 125 lbs | 50 mm ¼" | Slow |
| Hairy Vetch | | | — | — | | | | — | — | | | 320 g 12 oz | 13.6 kg 30 lbs | 5-10 mm ½-¾" | Slow |
| White Clover | | | — | — | — | | | — | — | | | 115 g 4 oz | 5 kg 11 lbs | 5 mm ¼" | Slow |
| Winter Field Peas | | — | — | — | — | | | — | — | | | 1.14 kg 2½ lbs | 50 kg 110 lbs | 20-60 mm 1-2½" | Fast |

| Soil Builders | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | SEEDS PER 1000 SQ. FEET | SEEDS PER ACRE | MAX. SEED DEPTH | GROWTH RATE |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----------------|------------------|-------------|
| Barley | | | — | — | — | — | — | — | — | | | 1.14 kg 2½ lbs | 50 kg 110 lbs | 20-40 mm 1-1½" | Fast |
| Buckwheat | | | — | — | — | — | — | — | — | | | 620 g 22 oz | 27 kg 60 lbs | 20-40 mm 1-1½" | Fast |
| Fall Rye | | | — | — | | | | — | — | — | | 1.14 kg 2½ lbs | 50 kg 110 lbs | 20-40 mm 1-1½" | Medium |
| Oats | | | — | — | — | — | — | — | — | | | 1.14 kg 2½ lbs | 50 kg 110 lbs | 20-40 mm 1-1½" | Medium |
| Winter Wheat | | | — | — | — | — | — | — | — | | | 1.14 kg 2½ lbs | 50 kg 110 lbs | 20 mm 1" | Fast |

| Pest/Weed Control | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | SEEDS PER 1000 SQ. FEET | SEEDS PER ACRE | MAX. SEED DEPTH | GROWTH RATE |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|------------------|-----------------|-------------|
| Alyssum | | | — | — | — | | | — | — | | | 10 g 0.35 oz | 454 g 1 lb | Surface | Fast |
| White Mustard | | | — | — | — | | | — | — | | | 104 g 4 oz | 4.54 kg 10 lbs | 5-10 mm ½-¾" | Fast |