

Table 10.3

SOIL TEMPERATURE CONDITION FOR VEGETABLE SEED GERMINATION¹

| VEGETABLE | MIN. (°oF) | RANGE (°oF) | OPTIMUM (°oF) | MAX. (°oF) | DAYS TO GERMINATION |
|----------------------------|---------------|----------------|------------------|---------------|------------------------|
| ASPARAGUS ^a | 50° | 60° -85° | 75° | 95° | 21 -30 |
| BEAN ^d | 60° | 60° -85° | 80° | 95° | 7 -14 |
| BEAN LIMA ^e | 60° | 65° -85° | 85° | 85° | 10 -14 |
| BEET ^b | 40° | 50° -85° | 85° | 95° | 7 -14 |
| CABBAGE ^{a,b} | 40° | 45° -95° | 85° | 100° | 7 -10 |
| CARROT ^b | 40° | 45° -85° | 80° | 95° | 10 -21 |
| CAULIFLOWER ^{a,b} | 40° | 45° -85° | 80° | 100° | 3 -10 |
| CELERY ^a | 40° | 60° -70° | 70° | 85° | 14 -21 |
| CHARD SWISS ^b | 50° | 50° -85° | 85° | 95° | 7 -14 |
| CORN ^d | 50° | 60° -95° | 95° | 105° | 7 -10 |
| CUCUMBER ^{c,d} | 60° | 60° -95° | 95° | 105° | 7 -10 |
| EGGPLANT ^c | 60° | 75° -95° | 85° | 95° | 7 -12 |
| LETTUCE ^a | 35° | 40° -80° | 75° | 85° | 7 -14 |
| MUSKMELON ^c | 60° | 75° -95° | 90° | 100° | 7 -10 |
| OKRA ^c | 60° | 70° -95° | 95° | 105° | 8 -12 |
| ONION ^a | 35° | 50° -95° | 75° | 95° | 10 -14 |
| PARSLEY ^b | 40° | 50° -85° | 75° | 90° | 10 -21 |
| PARSNIP ^b | 35° | 50° -70° | 65° | 85° | 14 -21 |
| PEA ^b | 40° | 40° -75° | 75° | 85° | 8 -10 |
| PEPPER ^c | 60° | 65° -95° | 85° | 95° | 14 -21 |
| PUMPKIN ^d | 60° | 70° -90° | 95° | 100° | 7 -10 |
| RADISH ^b | 40° | 45° -90° | 95° | 95° | 3 -7 |
| SPINACH ^b | 35° | 45° -75° | 70° | 85° | 7 -10 |
| SQUASH ^d | 60° | 70° -95° | 95° | 100° | 9 -12 |
| TOMATO ^c | 59° | 60° -85° | 85° | 95° | 5 -14 |
| TURNIP ^b | 40° | 60° -105° | 85° | 105° | 6 -7 |
| WATERMELON ^c | 60° | 70° -95° | 95° | 105° | 7 -10 |

¹Compiled by J.F. Harrington, Dept. of Vegetable Crops, University of California, Davis.

²Daily fluctuation to 60° or lower at night is essential.

^aHardy vegetables to grow as transplants.

^bHardy vegetables for direct seeding.

^cTender vegetables to grow as transplants.

^dTender vegetables for direct seeding.

^eHardy vegetables for direct seeding, 2 weeks after last frost.

Table 10.4

**TEMPERATURES AND TIMES REQUIRED FOR GROWING
PLANTS FOR FIELD TRANSPLANTING¹**

| Vegetable | Day ² (°F) | Night (°F) | Time (weeks) |
|------------------|--------------------------|---------------|-----------------|
| Asparagus | 70° - 80° | 65° - 70° | 8 - 10 |
| Broccoli | 60° - 70° | 50° - 60° | 5 - 7 |
| Brussels Sprouts | 60° - 70° | 50° - 60° | 5 - 7 |
| Cabbage | 60° - 70° | 50° - 60° | 5 - 7 |
| Cauliflower | 60° - 70° | 50° - 60° | 5 - 7 |
| Celery | 65° - 75° | 60° - 65° | 10 - 12 |
| Sweet Corn | 70° - 75° | 60° - 65° | 3 - 4 |
| Cucumber | 70° - 75° | 60° - 65° | 3 - 4 |
| Eggplant | 70° - 80° | 65° - 70° | 6 - 8 |
| Lettuce | 70° - 80° | 50° - 55° | 5 - 7 |
| Muskmelon | 70° - 75° | 60° - 65° | 3 - 4 |
| Onion | 60° - 65° | 55° - 60° | 10 - 12 |
| Pepper | 65° - 75° | 60° - 65° | 6 - 8 |
| Summer Squash | 70° - 75° | 60° - 65° | 3 - 4 |
| Tomato | 70° - 75° | 65° - 75° | 5 - 7 |
| Watermelon | 70° - 80° | 65° - 70° | 3 - 4 |

²Select the lower temperature on cloudy days.

¹Adjust temperatures slightly to alter growth rates.

TRANSPLANTS FOR THE GARDEN

Most gardeners use transplants in the garden at some time or another to give long season plants a chance to grow to maturity under their preferred weather conditions, or just to lengthen the harvest season. Tomatoes would certainly have a short harvest period in all but the mid-elevation range of Arizona if started from seed in the ground, and peppers and eggplants might not produce at all if not grown from transplants. Due to the amount of time, attention and need for controlled growing conditions, many gardeners prefer to purchase plants for their gardens. However, for a larger choice in