

# Organic Corn:

## Growing and Seed Saving Information



### Corn

Corn (*Zea mays*) is a warm season tender annual in the *Gramineae* family, which contains almost all of the grains and grasses. Corn varieties have been specialized for many uses including sweet corn, popcorn, and flint corn, which is milled into cornmeal.

### Soil and Nutrient Requirements

Corn requires high fertility and deep, well drained fertile soils with a pH between 6.0-6.8. Corn can tolerate heavy soils. Corn is a heavy feeder, fertilize ground well in spring with high-quality compost or a complete fertilizer. For specific nutrient needs and application rate it is always best to have a soil test done before application. Side dress with fertilizer at 12", or when leaves start yellowing.

### Position

Full sun

### Seeding Depth

Seeding depth: 1-2"

### Plant Spacing

For early varieties 8-10" "; for main season crops 10-12"

### Row Spacing

Row Spacing: for early varieties 30-36"; for main season crops 36". Plant each variety in blocks of at least 4 rows for adequate pollination.

### When to Sow

Direct seed only after soil has warmed to 65°F, after all danger of frost has passed, to ensure germination. Optimal soil temperature for germination is 85°F. Corn can also be transplanted, which is becoming more common in regions with shorter growing seasons. Start transplants in small cells 3-4 weeks before planting date. Double up plants per cell to save space and increase final plant spacing to accommodate.

### Other Considerations

To avoid cross pollination, separate blocks of individual varieties by at least 500 ft or plant to ensure tasseling at different times (plant varieties with different days to maturity, or use successive planting dates). Plants are in pollination mode for 2 – 3 weeks from time of tassel. If planting successions of the same variety, wait until the first succession reaches 2" before planting the next. This can be continued until 80 days before expected frost. Successive plantings of different varieties (to avoid cross pollination) should be made at 8 leaf stage of last planting.

### Frost Tolerant

Temperatures below 28 degrees F can kill corn.

### Drought Tolerant

Corn needs consistent plentiful moisture to perform well. Especially critical is the time around silk emergence. Mulching can help retain moisture in the soil, but should not be used in northern areas until the soil has warmed.

### Heat Tolerant

Yes

### Seed Specs

Sweet Corn - 1,700-3,500 seeds/lb (2,500 avg). Seeding Popcorn - 3,800-4,500 seeds/lb (4,200 avg). Ornamental and Milling - 1,250-2M seeds/lb (1,250 avg). M=1,000

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### Seeding Rate

Sweet Corn - 23M/acre (~9.2lb/acre) using 10" spacing, 30" row spacing. Popcorn - 57M/acre (~13lb/acre), 3 seeds/ft, 30" row spacing. Ornamental and Milling - 17,500 seeds/acre (~14lb/acre), 10" spacing, 36" row spacing.

### Harvest

Harvest when ear silks have dried down and when kernels are filled to the tip and have colored up. Corn is generally ready 18-24 days after first silk has formed.

### Storage

For best quality, eat right away. Cool corn to 32°F within one hour of harvest. Corn will hold well for 1-4 days at 32°F and high humidity, but will decrease in sugars more rapidly at higher temps and longer duration.

### Pest Info

Common insect pests include Corn Earworm, Armyworm, and European Corn Borer. The lepidopteral (worm) pests can be controlled with DiPel (*Bacillus thuringiensis kurstaki*, See Accessories) or Entrust (Spinosad). Removal of corn stalks or plowing in debris after harvest is the best practice for prevention to deter overwintering.

### Disease Info

Corn is affected by many fungal, bacterial, viral problems. If you have a major concern, notify your local extension agent. Most common occurrences are listed here.

- Damping off caused by soil-borne fungi (*Penicillium* spp, *Fusarium* spp, *Pythium* spp, and several others). It is an extremely common problem when using untreated seed in cool soils. It is important to wait for appropriate soil temps before planting.
- Stuart's Wilt (*Erwinia stewartii*) is a bacterial disease spread by Corn Flea Beetles following mild winters. Resistant varieties are available that limit the spread of infection. Rust (*Puccinia sorghi*) is a fungal disease that the wind brings from the Southern US. Smut (*Ustilago maydis*), is seen in a small percentage of crops. It is most noticeable as bloated boils in ears, tassels and nodes.
- Fungal diseases are favored by moist conditions, moderate temperatures and high nitrogen.

### Seed Saving Instructions

Wind pollinated. Corn must either be hand pollinated or isolated by ¼ mile between varieties. However, if tree lines, woods or structures separate the corn varieties then shorter distances may be sufficient. A minimum of 100 plants should be used for saving seed to maintain the maximum amount of genetic diversity of the variety. Allow the ears to dry on the plant and harvest when husks are dry and papery. Once harvested some additional drying under cover or indoors may be necessary before they can be shelled easily. Once shelled use a ½" screen on top of a ¼" screen to help with cleaning. Corn seed can remain viable for 5-10 years under cool and dry storage conditions.