

Sweet Corn

© Annette McFarlane

Sweet corn is a plant for gardeners who think big. You need to be prepared to grow a good-sized plot and to put some effort into preparing the soil prior to planting. With heirloom varieties losing ground to new hybrids and genetically engineered varieties threatening to contaminate what remains of the world's heirloom seed varieties, there has never been a better time to grow sweet corn.



FACT FILE

Botanical Name: *Zea mays*

Family: *Poaceae*

Origin: *The Andes*

Climate: *Corn is a warm-season crop. Daytime temperatures above 15 degrees Celsius are required for seed germination and optimum growth. In tropical and subtropical areas crops are typically planted from September onwards. In cool temperate areas planting is best delayed until December.*

Habit: *These fast growing annual plant as vary in size from mini ornamental types that grow to around 1m in height, through to giant heirloom varieties that tower over two metres tall. Each plant typically bears 2-4 corn cobs.*

Getting Started

The onset of the warm weather signals it is time to plant sweet corn. Only purchase as much seed as you can sow in the current planting season as the seed deteriorates quickly. The viability of corn seed stored for more than a year, typically drops to less than 50%.

Sow seeds 5-7cm deep directly into the beds in which they will grow to maturity. Place two to three seeds in each hole and thin as required on germination. Allow 25cm between plants and around 60cm between rows. Seeds germinate in 10-14 days.

How Much is Enough?

Establish at least 30 plants at each sowing or 100 plants if you intend to save seed. Plant in blocks of at least four rows, rather than long single or twin rows to ensure optimum cross-pollination. Successive sowings can be made at 4-6 week intervals for as long as conditions remain warm enough to see the crop through to maturity.

To maintain pure strains, each variety must flower at a different time to prevent cross-pollination. Consider planting an early flowering and late flowering type at the same time to avoid cross-pollination and provide an extended harvest.

To Really Get Growing

Sweet corn requires warmth, sunshine, protection from strong wind, plenty of nutrients and lots of water. A pH of 5.5-7 is preferred.

If you try growing corn in shallow, newly formed no-dig gardens, it just tends to topple over. Sow and turn in a green manure crop or add composted animal manure prior to planting. Any material that helps to increase soil fertility and increase beneficial microbial activity in the soil will result in an improved crop harvest.

Commonly used organic sources of nutrients include blood and bone, poultry manure, fish meal or liquid fish fertiliser, with additional elements being provided by rock phosphate, rock dust, seaweed.

Great Companions

Some gardeners use white clover as living mulch for sweet corn. Sow the clover seed after the corn seed has become well established. The clover protects the soil and can be dug in at the end of the season to further enrich the soil.

Guild planting is common when growing corn. A cucurbit such as cucumber, pumpkin or rockmelon and a legume crop such as beans are commonly planted with corn crops. Also known as intercropping, the cucurbit acts as a groundcover, while the bean crop fixes nitrogen and uses the corn stalk as a living trellis. Best of all you can reap the harvest of three crops in the space typically reserved for just one and hopefully confuse a few pests along the way.

As Your Corn Matures

As plants grow they develop prop roots from the lower stem nodes. Hilling compost around the base of the roots helps to stabilize tall plants, provides additional nutrients and can significantly increase cob production.

Mulches, such as straw or grass clippings, can reduce weeding and help conserve moisture. Peak water demand occurs at flowering and as the cobs are filling out.

When plants reach maturity, erect male flowers appear at the top of the plant. These shed pollen that is blown by the wind or shed downwards to the female flowers or silks. Each individual silk must be successfully pollinated for every kernel within the cob to grow to maturity. Corn cobs that have kernels missing at maturity have not been successfully pollinated.



Dreaded Beasties

Young corn cobs are attacked by various caterpillars that eat the maturing kernels. Heliothis or corn earworms (*Helicoverpa armigera*) are the most common. Historically bombarded with an array of chemicals, this insect has developed some of the highest levels of insecticide resistance of any pest.

The adult heliothis is a light brown to grey moth. Small white eggs laid on the silk tassels or foliage at the top of the plant quickly develop into small green caterpillars. These crawl into the cob and eat their fill. They emerge two to three weeks later through the top of the cob or through exit holes in the sides of the corn.

The caterpillars pupate in the soil. Second and third generations of moths can emerge in one season attacking successive plantings.

Taking Control

A series of strategies should be adopted to control caterpillars that attack corn including:

Active Observation – Look for eggs and remove them by hand. Watch for signs of infestation such as sawdust-like droppings, then locate and squash young caterpillars. October to November heavy infestation in subtropical climates (later in temperate areas and earlier in the tropics).

Zap Them - As moths are strongly attracted to light, some gardeners use insect lights to attract and zap the adults thereby preventing egg laying.

Exclude Them - Exclude caterpillars by placing paper bags over each cob following pollination. Just make sure that you do not trap any caterpillars inside.

Get Them Before They Get You - Cultivate the soil well prior to planting to destroy pupating moths.

Encourage Natural Enemies - Habitat plantings of daisies (*Asteraceae*) and members of the carrot family (*Apiaceae*) will encourage beneficial insects including natural predators such as parasitic trichogramma wasps, predatory bugs, ladybirds, assassin bugs and tachinid flies. Jumping spiders and wolf spiders are also significant predators. Mass reared Trichogramma wasps are commercially available for biological control.

Dusts, Sprays and Oil – Organically approved pest control methods include dusting with Derris, spraying with *Bacillus thuringiensis* (Dipel or BT), spraying with molasses and water or injecting vegetable oil into the neck of the cob to smother the caterpillars.

Is It Ready Yet?

Sweet corn is typically ready for harvest two to three weeks after flowering. When the tassels are shrivelled and brown, the husks should be well-filled. In heirloom varieties, piercing individual kernels reveals a milky exudate, but in modern hybrids this liquid may be clear.

This optimum picking stage lasts for less than a week so it is important to check and harvest crops regularly. Twist the young cobs downward to remove them from the plant.



Home Harvest

Fresh corn deteriorates quickly so eat immediately or store under cool conditions to prevent rapid deterioration. The longer the corn is stored, the greater the likelihood that the sugar content will be converted to starch. Blanching and freezing home grown supplies is a great way to preserve some of your harvest for times when it is too cold to grow fresh supplies.

Varieties

Sweet corn can be grouped into three main types:

Standard (su types) – typical of old-fashioned heirloom types, they are best eaten immediately after harvest or they quickly become starchy.

Sugary-enhanced (se types) – The sugar content in these varieties remains more stable after harvest improving their keeping qualities.

Supersweet (sh2 types) – Contains more sugar than either of the above types and will remain sweet for up to 10 days after harvest.

Hickory King Corn (Standard su type)

One of the tallest growing varieties, it yields 30cm long heavy cobs filled with large white kernels. Prized for its bountiful harvest and great flavour, this mid season variety must be eaten soon after harvest as it becomes starchy.

Golden Bantam Corn (Standard su type)

An old favourite due to its sweet yellow cobs. Fast maturing, it is possible to plant several crops in one season.

Balinese (Standard su type)

Robust, 2 metre tall plants characterise Balinese corn. The cobs are pale yellow with two cobs typically borne on each plant.

Hawaiian (Standard su type)

The deep yellow to orange kernels of this tall variety are favoured by many growers for their sweet flavour.

Ornamental varieties (Standard su types)

Strawberry popcorn produces plum coloured, 10cm long strawberry shaped corn cobs. Popularly grown for floral decoration, it can be eaten as popcorn. Plants grow just over a metre in height and are a great novelty for children.

Anasazi produces regular sized cobs with kernels that are red, blue and white.

Blue Dent Corn or Hopi Blue Corn as it is commonly known is a slow maturing, late season variety that dries to a royal blue colour.

Note: As corn is naturally a short-day plant and some heirloom varieties will not flower when the day length is more than 13 hours.

lochief, Jolly Roger and **Honeysweet** are popular Sugary-enhanced (se) and Supersweet (sh2) hybrids.

Saving Seed For Next Year

Ideally you need to grow a minimum of 100 plants to preserve the genetic diversity in subsequent generation of corn. To prevent the wind cross pollinating and contaminating different varieties try these strategies:

Encourage neighbours to grow the same variety by sharing seed with them. This is a great strategy if you do not have room to grow all 100 plants in your own garden! Plant different varieties at intervals that will stagger flowering.

Harvest and eat the cobs from plants on the outside of your growing block. These cobs are most likely to be contaminated through cross pollination. Allow a selected number of cobs from the centre of the planting to fully mature and dry on the plant. These cobs are most likely to retain the pure strain characteristics you require in the following generation. Remove the dried corn kernels from the cob and store protected from weevils.

Sweet Corn verses Maize

Sweet corn and maize are really the same plant. Varieties that are typically much sweeter in flavour due to their high sugar content and referred to as sweet corn. Varieties grown for stock feed or processed into corn flour or related processed products are drier, with a much higher starch content and are often referred to as maize.

What Went Wrong?

Not happy with the growth of your plants. Check for the following deficiency symptoms:

Nitrogen deficiency– Poor growth, overall yellowing or yellow leaf tips.

Insufficient nitrogen is a common problem, especially in sandy soil. Cold growing conditions or lack of water can also result in symptoms of nitrogen deficiency, as plants cannot access available soil nitrogen even though the soil may have been well prepared.

Phosphorous deficiency– Reddish purple leaf tips on otherwise deep green foliage. Add rock phosphorous or an organic fertiliser based on chicken manure will rectify this problem.

Magnesium deficiency – yellowing between the veins creating a striped appearance to the leaves. Raise the pH with wood ash or lime where the soil is acidic. Water with Epsom salts and add more organic matter to sandy soil.