

# Tomatoes

## *Lycopersicon esculentum*

Family: *Solanaceae*

Tomatoes are generally divided into bush or cordon types. Bush tomatoes have several branches, each of which terminates with a flower truss, so the plant forms a bush. Cordons generally have a single major shoot, with trusses (and side shoots) from the axil between leaf and stalk, so the main shoot may form a very long vine. Both these classifications (like the distinction between greenhouse and outdoor) are somewhat arbitrary. Tomatoes are easy to save seed from and, with a few exceptions, easy to keep true to type as they self-pollinate.

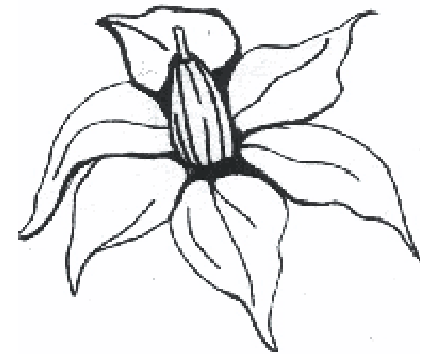
## Growing and Roguing

- Grow as you would for eating. In Britain tomatoes are treated as annuals, producing seed the same year that they are planted.
- Tomatoes can usually produce seed outside, though varieties that are slow to grow and ripen do best in a greenhouse or polytunnel.
- Tomatoes are inbreeders and many seedsavers successfully maintain varieties by saving from just two or three plants, though it would be better to save from at least six plants.
- Remove any plants which look sickly or have different foliage to the rest, or any which produce tomatoes different to the rest.

## Pollination and Isolation

Most tomatoes are not capable of cross-pollination because in modern varieties the flowers are perfect and self-pollinating (the female stigma is inside a cone of male anthers). This means that different varieties can be grown close together.

However, there are three exceptions: **currant tomatoes** (*Lycopersicon pimpinellifolium*), **potato leaved** varieties, and **double blossoms on beefsteak** varieties. These often have a protruding stigma and are able to cross-pollinate, especially if there are other protruding-stigma varieties in the vicinity. To be absolutely certain, check flowers using a hand lens. The green stigmas will protrude from the anther tube. For safety, you could grow just one protruding stigma variety a year. If you are growing more than one you need to bag the individual trusses or isolate these plants in a mesh cage. The flowers will self-pollinate within the cage or bag.



Tomato flower with protruding stigma

## Harvesting

The seeds are fully mature once the tomatoes are ripe. Allow the fruits to ripen on the plants, if possible, or bring the fruits indoors and ripen them as you would for eating, e.g. in a box or drawer with ripe apples or bananas.

## Cleaning Seed

Cleaning refers to the removal of debris, leaving only seed. Cleaned seed keeps better.

Some varieties contain more seed than others. Large beefsteak or plum tomatoes may yield less than ten seeds, while small or cherry tomatoes can produce scores of seed.

## To save a small quantity of seeds for your own use next year

Remove seeds from the fruit and rinse in a sieve under cold running water, rubbing them against the sieve to remove the gel. Spread on paper towel or kitchen paper, label, and leave to dry. In spring you can plant the paper towel with the seeds attached into moist compost in a seed tray to start the plants.

## To save a larger quantity of seed – soda crystals method

Dissolve 1 teaspoon of soda crystals in a little hot water in a jam jar with a little hot water and fill two-thirds with cold water. Remove seeds from the fruit and rinse in a sieve under cold running water, rubbing them against the sieve to remove the gel. Add the seeds to the jam jar and label. Leave for one or two days. Once the gel coat has broken down rinse the seeds in a sieve, again rubbing them against the sieve to remove the last of the gel. Spread them thinly, so none are overlapping, onto a clean, dry surface (e.g. a lunchbox lid or plate). Label and leave to dry. Collect the dry seeds and store in a labelled envelope.

NB The soda crystal method of tomato seed cleaning has not as yet received official approval under organic standards, though soda crystals have been approved for other uses in organic food production. Plain water can be used but leave seeds in the water for one day longer.

## Fermentation method

Place seeds from ripe tomatoes into a suitable container (e.g. large yoghurt pot). You can process ripe fruits in a food processor with an equal quantity of water until you have a pulpy mass (we recommend that you remove the skins before doing this). The seeds are hard and will not be damaged.

Put the container into a warm place to ferment. It may smell bad but it is good for the seeds. Fermentation removes compounds that inhibit germination and destroys seed-borne diseases. It duplicates what happens in nature.

After three or four days, when it is covered by a mass of mould, add plenty of water and stir vigorously. Good seeds will settle to the bottom so you can tip the rotting mass off. Rinse and repeat until only good, clean seeds remain. Strain the water off the seeds then place them on a clean plate or piece of glass (they will stick to paper). Stir once or twice a day to promote even drying and prevent clumps of seeds forming. Dry quickly, but avoid either direct sunlight or an oven. A cool, gentle breeze is best.



Fermenting tomato seeds

## Storage

Tomato seeds will store in a cool, dry place for about six years.

## Returning Seed to HSL

It is important that seed returned to HSL is not cross-pollinated. Do not send us seed that you suspect might have crossed.

Seed must be completely dry and fully cleaned. Seed that retains moisture can go mouldy in transit and will have to be discarded. It can take a few days for seeds to get to us in the post. Do not return tomato seed attached to paper towel as they are difficult to remove or store. Pack it in breathable material (e.g. a paper envelope or cotton bag) and place it in a padded envelope or stout box to protect the delicate seed from impact damage, before sending it in the post.

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