

Hybridization



Hybridization of tomato

Tomato is a selfpollinating crop. This means that open pollinated tomatoes are highly homozygous. The seed formation occurs by pollination of the style of the flower by the pollen of the same flower. Picture 1 shows the pollensac forming a tube that encloses the style.



Picture 1

To produce a hybrid two parental lines are required, chosen so the cross between them will produce desired properties. Parental lines do not differ from open pollinated varieties: they are not sterile and are maintained by normal selfpollination.

Hybridization technique:



Picture 2



Picture 3

On the motherline a flower is emasculated just before flowering (see picture 2). This is done by breaking the petals and the stamencase off the flowerbed. This can be done by hand or with a tweezer. The result is a flower of which only the sepals, the ovary and the style are left (see picture 3).



Picture 4



Picture 5

The paternal line produces the pollen. This is collected in a small glass in which a vibrating needle frees the pollen. (the tool is made out of an electric toothbrush or an electric razor (see picture 4). To pollinate the emasculated flowers the stamen is put on a spoon and the stigma is tipped in the pollen (picture 5).



Picture 6



Picture 7

To be able to recognize a crossed flower a petal is taken off when emasculated. The now marked fruit can start to grow (picture 6 and 7). The ripened fruit are mashed and the fruitmass is fermented in a short time. Hereby the film around the seeds is dissolved and is now easily separated from the pulp by sieving and rinsing with water. After drying the hairy seed is collected. To improve the ability to sow the seed is polished (picture 8 and 9).



Picture 8



Picture 9