PRACTICE ABSTRACT 8

Interesting tomato traits for hobby variety selection

The fruit typology is the principal target to consider for selecting cultivars for hobby purposes. Tomato types with different shape and size of the berry are available. The most common types are a) beefsteak, a salad tomato with a large size and smooth and thin skin; b) globe, the typical round tomato with average size and shape from round to slightly elongated; c) cherry, a small round tomato including several long shelf-life accessions; d) plum, mostly characterized by a small and oval shape; e) elongated, characterized by rectangular/cylindrical shape; f) flat, of different sizes and typically with many ribs. This list is not exhaustive since a broad level of variability is encountered in the thousands of existing tomato cultivars with flat, pear, heart shape as well as regular or irregular size.

The predominant colour is red, although a wide variety can be found with types typically ranging from yellow, orange, pink, brown, and purple with streaks of different colours. Differences in tomato colour are due to accumulation of different carotenoids, which have powerful antioxidant properties. When chlorophyll (green) is combined with red, we have brown tomatoes. Purple tomatoes result from accumulation of anthocyanins, which are also antioxidants, in the peel. Colour is not related to taste, which is very variable within each colour type, as well as within each shape group.

Variation in shape and colour of tomato (Jaime Prohens, Universitat Politècnica de València, 2021).

The intensity of green in the top part of the fruit, the degree of firmness (from soft to firm) and ribbing (from weak to strong) are other important traits to consider for selecting your favourite variety.

Other traits related to plant architecture such as growth habits, from determinate (1.0–1.5 meters), to indeterminate with heights up to 3.5–4.0 meters, or inflorescences types such as uniparous, fishbone or compound are relevant.

Different types of inflorescences (María José Díez, Universitat Politècnica de València, 2019)

When new combinations of traits are desired, crosses can be made between plants from varieties exhibiting the desired traits. Many video tutorials on the World Wide Web show you how to make the crosses, like here and here (links are not affiliated with BRESOV).

Some of these desired traits may then show up in the hybrids which can be left under natural pollination. In the genetically variable offspring plants with the desired traits can be selected

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THE PROJECT

BRESOV
SHAPING THE FUTURE OF ORGANIC BREEDING & FARMING

BRESOV aims to tackle the nutritional challenges of a growing world population and changing climatic conditions by enhancing productivity of different vegetable crops in an organic and sustainable farming infrastructure. BRESOV works on broccoli, snap bean and tomato as those staple vegetable crops have significant roles in meeting our global food and nutritional security goal, and under organic conditions can contribute to storing carbon, introduce nitrogen and improve organic soil quality.

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