



TRADITOM KIDS SUMMER SCHOOL

Tomato is the second most consumed vegetable in the EU and a major dietary source of many nutrients, vitamins and antioxidants. Since tomato was introduced to Europe in the 16th century, local farmers have been developing a large number of varieties that have shaped the genetic diversity of the traditional European tomato. The aim of **TRADITOM** (traditom.eu/) is to valorize the genetic diversity stored in traditional tomato varieties and to increase their resilience in order to prevent their steady replacement by higher yielding, hardier and often less tasty modern cultivars.

TRADITOM KIDS is a scientific dissemination activity workshop aiming to bring **TRADITOM** research to children, encouraging motivation for and enjoyment of science, while involving them as active participants in research. The **TRADITOM KIDS** activities have been designed to be interactive to increase children's awareness, through play and hands-on experimentation, on the importance of the genetic variability, and genetic resources conservation, by focusing on the case of traditional tomato. **TRADITOM KIDS SUMMER SCHOOL** is organized to last one and a half hours and is directed towards groups of 25 children from 5th and 6th grades that are registered for the Universidad Politécnica de Valencia Summer School. The **TRADITOM KIDS** Workshop will be led by **TRADITOM** researchers from the Instituto de Biología Molecular de Plantas (UPV/CSIC) and Instituto de Conservación y Mejora de la Agrodiversidad Valenciana (UPV), with the help of the corresponding summer school mentors and the collaboration of Joan Casals from Fundación Miguel Agustí (UPC). At the end of the workshop, all participating children will receive a diploma acknowledging their participation in the **TRADITOM KIDS** workshop "for their valuable contribution to science".

TRADITOM KIDS SUMMER SCHOOL workshop is organized in two modules:

- Biodiversity and Nutrition
- Tomato domestication and human biodiversity: taste

The following concepts will be introduced:

- Genetic variability and biodiversity reduction
- Evolution and living organism adaptation ability
- Health and diverse nutrition

Biodiversity and Nutrition

Children will learn the importance of biodiversity for the preservation of species, using tomato as an example as well as for the production of food and other agricultural products. The corresponding benefits for mankind including nutritional aspects will be introduced.

A playful combination of activities will be carried out by all kids in groups to get familiar with the analysis of tomato variability. As many traditional and commercial tomato varieties have been developed on the basis of traits such as the taste, size and color, we will provide the groups with a traditional and commercial collection of fruits with different sizes, colors and shapes. By matching the different types of fruits that are being displayed in a reference chart against the different tomatoes, the children will classify each fruit to 9 different shapes, 3 size types and 4-5 colors. At the end, we will count how many of the traditional tomatoes fit in each shape, color and size category. The results of the traditional tomatoes will be compared with those of modern tomatoes sold in large supermarkets and the outcomes will be discussed on the basis of biodiversity.

Tomato domestication and human biodiversity: the taste

One of the main consumer concerns is the loss of taste in most commercial tomato varieties. In the first part of this module we will perform an activity directed to evaluate the traditional and commercial tomato quality through a **blind taste test**. To do that, each child will be assigned a number. Blindfolded with the help of a scarf, children will taste and compare wedges of different traditional and modern tomatoes and indicate their individual preference

Taste perception is in part determined at the genetic level and this could have an impact on food preferences and nutritional habits. To illustrate the taste genetic diversity in participant children, we will perform two activities:

- **Taste perception test:** the ability to perceive tastes is strongly related with the ability to perceive the PTC (Phenylthiocarbamide), a compound not found in nature that has a bitter taste. The PTC strips (provided by a school supply company for this purpose) allow to sort individuals on the basis of their ability to perceive the bitter taste of PTC. Some individuals perceive nothing, others a strong taste but the majority find it slightly bitter. Children will be sorted as supertasters, tasters or non-tasters on the basis of their perception of the tomato taste.

- **Taste buds stain:** the ability to perceive taste is strongly related with the taste buds number and density in the tongue. Supertasters have much more of the fungiform type of buds by square centimeter than non-tasters. To evaluate the number of fungiform taste buds, we will stain the children's tongues with a blue lollipop (obtained from a local candy store). Pictures of each child's tongue will be taken and the number of taste buds will be counted to sort them as supertasters (35), tasters (35-15) or non-tasters (less than 15).

At the end of this activity, children's preference for traditional or modern tomatoes will be discussed on the basis of children's and tomatoes diversity.

This TRADITOM kids workshop will run in 8 groups of 25 children each (8-10yrs) during 8 different sessions on July 20, 21 and 22nd, 2016 as part of the UPV summer school at the Universidad Politécnica de Valencia, Spain.

TRADITOM People involved:

Clara Pons

Salvador Soler

Mariola Plazas Avila

José Luis Rambla

María José Díez Nicols

Jaume Prohens

Antonio Granell

Joan Casal Missio

The results and pictures of the **TRADITOM KIDS SUMMER SCHOOL** will be uploaded in the UPV Summer School web (experimenta.upv.es) and on the **TRADITOM** project webpage (traditom.eu/es/)



Where: University Polytechnic of Valencia Campus

When: 20-22 July 2016 from 09:00 to 13:30

Info at: experimenta.upv.es and traditom.eu