

Seasonal tomato varieties trials campaign: 2021 campaign

In the 2021 season, eight tomato variety trial stations are being set up in collaboration with processing units and nurseries. These trials (Table 1) are conducted at the same cultivation level as the production fields. The fertilization program adopted is that of the farmer to evaluate the conduct of the varieties subject of the trials. The fertilization doses as well as the quantities of irrigation water to be applied vary according to the type of soil, the quality of the irrigation water, the climatic characteristics of the growing region...

Table1. Mapping of trials

Trial area		Number of varieties	
CapBon	ManzelHorr	17	
	ManzelHorr	17	
Kairouan	Sidi Abdallah	20	
Sidi Bouzid	Sidi Bouzid	20	
Gafsa	Sidi Aich	20	
	AwledZid	20	
Béja	MedjezElbab	8	
Jendouba	Brahmi	8	

Purposes

- To study the real productive potential and quantitative and qualitative characterization of the different varieties of tomato of season available on our market.
- To study the suitability of tomato varieties for processing.
- To elaborate a data base of the different criteria of productivity and quality of the tomato varieties (To be updated every season).

Plant materials

24 varieties were subject to these trials: Perfectpeel, Albatros, Topsport, CXD255, Savera, Heinz9661, H1879, H4107, Ercole, Gladis, Elba, Vasco, H1884, Farah, Firenze, H1886, Dorra, Sabra, H7709, Saada, Pietrarosa, Alysse, Noura and Nemageant.

Experimental design

In each station, the varieties are randomly distributed in a randomized block design with three replications. These areas are managed, at the cultivation level, in the same way as the production fields. The recommended irrigation method is the drip system associated with a localized fertilization "La Fertigation". The fertilization program adopted is that of the farmer to evaluate the behavior of the varieties subject to the trials. The fertilization doses as well as the quantities of irrigation water to be applied vary according to the type of soil, the quality of the irrigation water and the climatic characteristics of the growing region.

Analyses of fruit productivity and quality

For each test plot, preliminary analyses will be performed during an intermediate stage (10 to 15 days before harvest) followed by a second phase of analysis at the final harvest date. During each phase of analysis, 5 samples will be taken at random per block and per treatment (variety). Each sample will be composed of all the fruits (including green and rotten fruits) from the harvest of three plants taken at random.

The processing yield per ha will reflect the amount of healthy tomato per ha that can be processed after deducting the mass of waste (green and rotten fruit) per ha. The dry matter rate will be evaluated by the °Brix degree, measured with a portable digital refractometer.

The yield in °Brix per ha will be the quantity of juice that can be obtained after the transformation of the production of one ha of healthy fruits after deduction of the mass of waste.

The reference potential will be the yield in °Brix that can be obtained under ideal production conditions (yield produced = 100% of the expected yield) and with average waste rates of around 10% and average soluble sugar contents of around 5°Brix. The color will be taken by direct reading of the a/b index on a colorimeter.

Estimation of the revenue generated by one ha for each tomato variety. The rates of green fruits and rotten tomatoes will be deduced from the yield weight.

Statistical analysis

The statistical analysis of the data will be carried out using the program "SPSS Version 20.0.0". It will be possible to verify each time if significant differences, at the 5% threshold, exist between the different treatments and the different blocks considered.

The database, the result of this work, will be updated each season to be available to manufacturers, nurseries, collectors and producers. It represents a useful tool in the choice of varieties to select the most productive and most suitable for processing (grouped ripening, °Brix ...) especially that the sector tends to adopt a structure of payment to the quality of tomato fruits.