Session 7. Table grape growing in tropical/subtropical environments and dormancy

Keynote address

Challenges and opportunities to growing table grapes in sub-tropical/ tropical regions

Patricia Coelho de Souza Leão

Embrapa tropical Semi-Arid, BE 428, Cm 152, Box 23, Zip Code 56302-970, Petrolina, PE, Brazil,
Tel:+55(87) 3866 3668, Email: patricia.leao@embrapa.br

Tropical and subtropical viticulture can be defined in five types according the Multicriteria Climatic Classification (Tonnieto and Carbonneau, 2004): tropical dry, tropical wet, tropical alternatively dry/wet, sub-tropical alternatively dry/wet and sub-tropical dominantly wet. They include a wide range of countries and very particular tropical viticultures in Brazil, Peru, Venezuela, Colômbia, Guatemala, India, Thailand, and others characterised as subtropical in the South of Brazil, Uruguay, Korea, Japan and others.

The vine adapts differentially in every climatic condition by imposing a particular management system, resulting in varied yield and quality of grapes. Thus, the focus here is going to be in the dry tropical viticulture, highlighting growing regions like Piura in northern Peru (05° 12'00"S 80° 38'00"W), Zulia in Venezuela (10° 57'51"N, 71° 44'8" W) and Petrolina and Juazeiro, in the Northeast of Brazil (9° 23'39"S, 40 ° 30'35"W). Viticulture in these regions are the nearest of the Equador line in the world and have higher similarities between them. São Francisco Valley can be considered as an example for this group as one of the pioneers and most technically advanced for growing table grapes. The climate presents an average annual precipitation of 505mm, annual average relative humidity of 60.7%, annual average temperature, maximum, and minimum, respectively 26.7°C, 32.0°C, and 20.8°C.

The main common aspects in viticulture under tropical climate are that vine grows continuously, there is no rest period in winter and can be made up to three crops at any time of year. As the buds do not come into physiological dormancy, they are apt to sprout at any time of year that pruning is performed. This is the main comparative advantage in tropical viticulture, the grower can decide what is the most convenient time of year for pruning and harvesting grapes as a function to achieve better prices in the market.

To produce table grapes in these conditions, it is possible to list the main technical challenges, as follows:

- Breaking dormancy and reducing apical dominance;
- Controlling of vigour and vegetative growth;
- Rational water and nutrients management;
- Management of clusters for growth and colouring of berries;
- Phytosanitary control;
- Controlling of ripening and ideal time to harvest.

In addition to these challenges in the field is also necessary to ensure post-harvest conservation of grape through appropriate methods and practices during packaging, storage and transportation to markets.

All the above mentioned challenges are associated with a major challenge that is to achieve sustainability, where the technical challenges are aligned to the use of efficient methods of business management in order to reduce production costs and ensure economic viability.

In conclusion, tropical viticulture is developing fast in the world and presents some comparative advantages. The better comprehension of the vine physiology to adapt in these environmental conditions and the advancing of new research approaches can be the key to obtain high quality grapes for the more strict markets and sustainability by combining yield stability and low production costs.

Reference

Tonietto J and Carbonneau A. 2004. A multicriteria climatic classification system for grape growing regions wordwide. *Agricultural and Forest Meteorology* **124(1-2)**: 81-97.