

## Grapevine pruning: some principles

Professor Alain Deloire  
[alain.deloire@supagro.fr](mailto:alain.deloire@supagro.fr)

Grafting is the process of connecting two varieties to achieve a plant that produces the above ground canopy and crop (cultivars of *Vitis vinifera* L., called scion) and below ground a root system from bred *Vitis* species (*Vitis berlandieri*, *riparia*, *rupestris*), referred to as the rootstock. The rootstock which will produce the root system must be resistant or tolerant to soil issues such as Phylloxera, and abiotic problems like salinity or calcium (chalk).

The main grafting methods used for grapevine are:

- Omega graft (mechanized technique used by most nurseries)
- Cleft graft (not really used currently by nurseries; could be used for direct hand grafting in the field)
- T-bud, chip bud and bark grafts (hand grafting used in the vineyard).

Successful grafting in plants requires the development of a functional vascular system between the scion and the rootstock. Understanding the spatial organisation of the graft interface is important for the evaluation of new rootstock genotypes and for the development of new grafting technologies.

### References

- BESTER A.J., KRAEVA E., DU PLESSIS A., SCHMEISSER M. AND DELOIRE A. 2012. Use of X-ray micro-computed tomography for detection and studying of grapevine grafting-disorders. South African Society of Viticulture & Oenology, Poster.
- CARBONNEAU A., TORREGROSA L., 2018. Le greffage de la vigne. *Revue des Jardins de France, Société Nationale d'Horticulture de France* - N° Special 2018, 92 p.
- DELOIRE A. 1981. Etude histologique du greffage herbacé de combinaisons compatibles du genre *Vitis*. *Vitis* 20, 85-92.
- DELOIRE A., GRENNAN S., 1982. Influence de solutions hormonées sur l'histogenèse de greffes compatibles du genre *Vitis*. *Le Progrès Agricole et Viticole*, 5, 122-124.
- DELOIRE A., BERNARD A.C., 1982. Etude histogénétique du greffage ligneux de combinaisons compatibles et incompatibles du genre *Vitis*. *Le Progrès Agricole et Viticole*, 1, 29-32.
- D'KHILI B., MICHAUX-FERRIERE N., GRENNAN S., 1995. Etude histochimique de l'incompatibilité au microgreffage et greffage de boutures herbacées chez la vigne. *Vitis* 34 (3), 135-140.
- MILIEU M., RENAULT-SPILMONT A.S, COOKSON S.J., SARRAZIN A., VERDEIL J.L, 2012. Visualization of the 3D structure of the graft union of grapevine using X-ray tomography. *Scientia Horticulturae*, 144, 130-140.
- VALAT C., GRENNAN S., DELOIRE A., 1982. Accidents sur greffés-soudés à la suite de l'emploi d'hormones lors du greffage sur table. *Le Progrès Agricole et Viticole*, 4, 80-82.

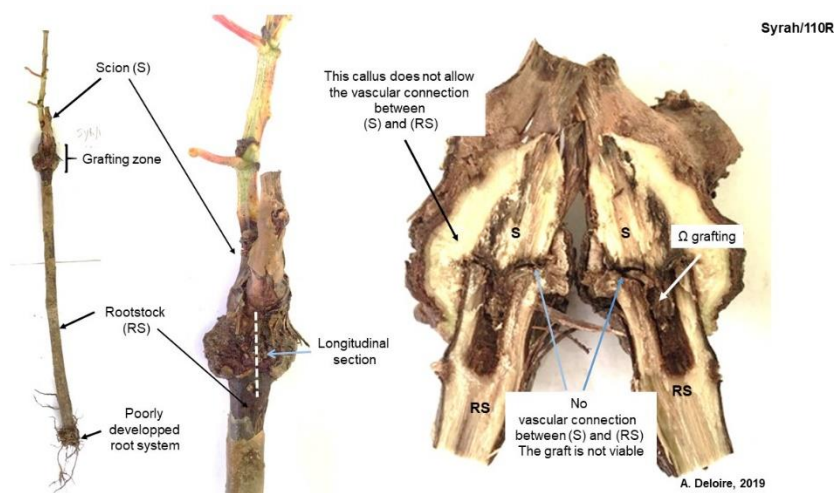


Figure 1: Example of grapevine grafting disorders (Shiraz/110R, omega grafting)

Acknowledgments: Thanks to Dr Suzy Rogiers (DPI-NSW, Australia) for English proof reading.