

Grafted Vines: one assertion in the Portuguese Viticulture

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Abstract

In the last quarter of century XIX, American vines imported to England came to a microscopic insect which lives in and feeds on their roots, and which rapidly spread throughout Europe. American varieties have developed a tolerance for the presence of this pest, Phylloxera, but European varieties, which had never before been exposed to it, sickened and died, nearly wiping out wine production in Europe.

In consequence, the great destruction of vineyards defined a radical changing in the cultivation technician and in the multiplication process.

The best solution founded was the grafting of the traditional varieties onto Phyloxera resistant rootstock, normally hybrids of American *Vitis*. Several techniques of grafting were created in the field, but all of them with the success depended upon the climate: good or bad as the year. This climate conditional, more accentuated in the areas of latitude north limited for the vine culture (Germany and north of France) obliged to the development of table grafting process to cross the faults with the grafts in the field.

A Grafted Vine is a plant that results from a table grafting, supported by mechanical or pneumatic machines. The common widespread machine is the omega grafting, this first cuts the *Vinifera* bud and next inserts a suitable rootstock cane, while the machine holds the cut *Vinifera* in place; with a second press/cut, the rootstock is cut and now fits like a puzzle piece with the *Vinifera* bud. Successful grafting only requires that a vascular connection take place between the grafted tissues, obtainable under controlled conditions of temperature and humidity, and finally the rooting process occurs in nursery.

This technique, developed in Germany, was introduced in Portugal in the beginning of 80's of the last century, owing to hand grafting in the field be a specialist skill and so endangered. The first plants in the Portuguese market became by Grafted Grapevine Nursery Plansel and by 'Amândio Galhano' Viticulture Station (EVAG), nearly 1985.

Since then and mainly after 2005, the new plantations in Portugal are made mainly with grafted vines, material virus free and genetic selected, offering the best quality besides the grate price than the traditional material.