Chenin

Origins, characteristics and variations

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Name, etymology, synonymy, and homonymy

The name chenin has evidently been cited, and apparently for the first time, in 1534, by François Rabelais in his work: *The Very Horrific Life of Great Gargantua, Father of Pantagruel*, under the pen name Alcofribas Nasier, a book full of pantagruellism, where one finds this sentence (Book I, Chapter 15): "And, with big chenin grapes, a steam bath was prepared for Forgier's legs, so gentle was the treatment he was soon cured." This name would come from Montchenin[2,3] near Cormery, where this varietal would have been introduced, cultivated and noticed. Many synonyms exist for this variety depending on the different regions and countries where it has been propagated[4,5,6,7]. Among these, one can point out the names of: Anjou, Plant d'Anjou, pineau de la Loire, gros pineau en Val de Loire, bon blanc, franche in Charente-Maritime, rouchalin in Gironde, rougelin in the Lot, capbreton blanc, cruchinet, tite de crabe in Les Landes, pineau blanc in Aveyron; and abroad, agudelo,agudillo en Galice, steen in South Africa.
The main namesake can give rise to confusion due to an unfortunate synonym of Pineau d'Aunis, a completely different grape variety, with no particular genetic link with chenin and which is sometimes wrongly denominated chenin noir[8] when, in no case, is it the black form of the chenin.

History, origins and descendence

Some authors would date this grape variety as far back as the 11th, 10th and even the 6th century. However, though the presence of the vine seems well attested from those times in the Layon region and in Anjou, there is no certainty that it was already chenin. The results of molecular and genetic analysis can not, unfortunately, date its appearance with any certainty, but now clearly show that chenin is a descendant (a seedling) of savagnin. This helps to clarify some of the assumptions made as to its origin and discovery [13,14]. In this respect, it is noted that at the beginning of the 16th century, efforts were being made to improve the quality of wines by Thomas Bohier at the Château de Chenonceau, followed shortly after by his brother-in-law Denis Briçonnet, Abbot of Cormery, at the Montchenin manor on the slopes of the Echandon, trying to acclimatize famous vines coming from all over France and particularly from Anjou, Orléans, Beaune and Arbois. This type of approach seems to have developed during the reign of Francis I and it is probable at that time that not only cuttings but also seedlings from seeds were used. It is therefore without doubt that this grape variety appeared, coming from seedlings probably harvested near Arbois, and was then quickly identified for its good adaptation and its ability to produce high quality wines. Moreover, as a descendant of the Savagnin (a very important parent)[15] chenin has many half-brothers, such as the Sauvignon or the Verdelho of Madeira, whose proximities had been noted a long time ago thanks to the insight of winegrowers. Likewise, over time, and in particular by spontaneous crossings with the gouais variety, chenin also gave birth to a few other varieties, particularly colombard[12]. In South Africa it has also been used in programs of varietal creation by Professor Orffer who hybridized it with ugni blanc to produce chenel and weldra, and with crouchen to obtain therona[16].

Importance, Diffusion, Surface Area
In France and in the world

In France, chenin saw its surface areas reduce dramatically between 1960 and 1980 (less 7 000 ha), in relation to the crisis of sweet and dessert wines. Since then, they have stabilised (9 728 ha in 2013, 16th place in the varieties). It is included in 35 AOPs across France, Val de Loire, of course, but also the Dordogne, the Garonne valley, Landes, Aveyron and Languedoc. According to the appellations, it can be used alone to make varietals or as an accessory or supplementary grape variety in blends. These AOPs include dry, sweet or dessert, but also sparkling wines.

At the international level, chenin levels have also been in decline in recent years in most countries where it is grown. In Europe, chenin is listed in the catalogs of the following countries: Belgium, Bulgaria, Cyprus,

Italy, Malta, Portugal and the Czech Republic, though it is little cultivated in these countries. South Africa remains by far, the world leader[19] with 17 890 ha in 2013[20]. In total, it is estimated that there are 37 000 ha of chenin currently planted around the world, compared to 65 000 ha in 1990.

Ampelographic description and color of the berries

Identification of chenin:
• at the end of the young branch, which has a very strong density of coated hairs
• young leaves with bronze patches
• chenin's adult leaves have three to five clearly distinguishable lobes, with a slightly open petiolar sinus, or with slightly overlapping lobes
- on the lateral lobes, the teeth are medium-length, with convex sides, and the veins have a strong red anthocyanic pigment
- the leaf blade is quite bubbled and its underside has a moderately dense coat of flat-lying hairs
• flowers that are hermaphroditic
• berries that are elliptical in shape with presence of pips
The chenin is a grape variety with "white" berries and besides, it quite often referred to as "white chenin" abroad. However, there is also a pink-berry mutation that was selected in South Africa; its interest deserves to be specified.

Phenology and climate requirements

Farming method have to be carefully chosen / thought about -

Period of bud break: 1 day before chasselas.
Flowering period: 1 day after chasselas
Period of veraison: 2 and a half weeks to 3 weeks after chasselas.
Period of maturity: 3 weeks to 3 weeks and a half after chasselas [21,22].
Chenin is thus characterized by an early bud burst which makes it susceptible to spring frosts, and a relatively long cycle with a varietal heliothermic index (date of bud break to harvest date) of 1895. It should be noted that after a spring frost, the secondary buds which can restart are then not very fertile. In terms of vegetation and physiology, chenin shows a very good ability to adapt to hot, tropical or equatorial climatic conditions. This in turn means it is possible to grow this grape variety in these types of regions. On the other hand, its high sensitivity to bunch rot should be taken into account, where the grapes are concerned, it is also quite sensitive to roasting or scalding. Leaf removal must therefore be carried out with precaution and consequently the manner of farming the vineyard must be done with careful consideration of the plant and its specific requirements for optimum growth.

Agricultural and agronomic capacities

Chenin is a medium to strong variety. Its twigs have a semi-erect to erect growth with an average diameter and short internodes. Removing unwated shoots is often useful or necessary in the spring or early summer, to balance the vegetation, promote aeration, improve the microclimate of the berries and facilitate the winter size of the following year.
Chenin is a fertile variety, which can be cut short (and grown in a goblet, for example) or with a long stem (Guyot for example) and whose production potential depends on conditions of cultivation and agronomic fertility of the soil where it is implanted. Under vigorous conditions chenin can produce bunches in relatively large quantities and may also be subject to drying of the stalks.
The most commonly used rootstocks are, in descending order, the riparia glory of Montpellier, the SO4, the gravesac, the MGT 101-14 and the fercal[23]. Problems of affinity have sometimes been reported with 3309 C and today this rootstock is practically discontinued with chenin growing.

Sensitivities to diseases and pests

Chenin is particularly susceptible to gray rot, acid rot, powdery mildew and wood disease (Eutypiose, esca, ...). It is also susceptible to excoriosis, burr knots and cutworms (larvae of the vine moth). On the other hand, it is less affected by mildew, black rot and anthracnose.

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Characteristics of grapes and wines

Chenin clusters are medium to large, conical, sometimes winged (with one or two fins) and they can be Very compact. The berries are small to medium. According to the types of soil (limestone vs. schist, for example) their agronomic fertility and the conditions of cultivation, chenin can produce either sparkling wines or dry wines,or sweet wines. The acidity potential of chenin is high, making it one of its main characteristics. The wines obtained are elegant, generally quite lively, nervous, with the possible presence of floral aromas (acacia, hawthorn, linden...), fruity (quince, mirabelle, citrus, guava, ...) and honey.

Variation clonale et travaux de sélection
Clonal variation and selection work

There is a remarkable clonal polymorphism[24] with chenin and affects the villosity ("wooly chenin"), adult leaf cutting, anthocyanin colouration, veins and twigs, vigor, fertility, precocity, shape, compactness and size of clusters and the shape of the berries may sometimes be very elongated, oval, and pointed ("*tite de crab*"). To gather and preserve this diversity, a conservatory was installed in 3 successive stages in Montreuil-Bellay in addition to the 54 accessions currently kept at the IFV at the Domaine de l'Espiguette of the 296 introduced since 1963, and 24 accessions in the collection of Domaine de Vassal (INRA) [25].

The first stage of the conservatory was 1983-1984 by Mr. Remoué and his team (INRA) following surveys carried out in the department of Maine et Loire (sectors of Puy-Notre-Dame, Saint-Aubin-de-Luigné, Concourson-sur-Layon, the Pommeraye and Martigné-Briand). The second part was planted in 1990 following surveys in the vineyards of Indre-et-Loire and more particularly in the areas of Vouvray, Montlouis, Vernou-sur-Brenne and Savigny-en-Véron. In the third instalment, added in 1998 following surveys carried out by ATAV Val de Loire (integrated since then within the IFV Val de Loire - Center division) in very old vines of the average valley of the Loire. The conservatory now has some 300 accessions. Between 1999 and 2002, a first follow-up Allowed for the pre-selection of 12 accessions from study collections on three well-differentiated plots (units terroirs, meso-climates, cultural practices, rootstocks). The target criteria were early cycle, berry quality and low to medium yields. At the end of 6 years of experimentation, 4 new clones were approved by the CTPS in December 2014, which compliments the range of the 8 clones previously selected: the 220 (the oldest - 1973 - and the most diffused, versatile, balanced, good quality), 278, 416, 417, 624 (more productive clones), 880, 982 (adapted to the production of dry wines) and 1018 (very early, low productivity, good propensity for over-maturation). These are clones:

- 1206, suitable for the production of sweet wines with a high sugar content, less productive and appreciated in tastings;
- 1207: early, suitable for the production of sweet wines, with a good sugar content, less productive and giving the best results in tasting sweet wines;
- 1208: early, adapted to the production of dry wines with good sugar content, less productive and the best results in dry wine tasting;
- 1209: late, suitable for the production of dry white wines with a lower sugar content, high acidity and appreciated in tasting in the early years.

This conservatory now comprises a collection which is extremely interesting and important for the future. It is a unique tool to advance the knowledge of this remarkable grape variety and vine-growing know-how. It is essential to continue to complete it, to maintain it, study and value it.

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