



# VITISPIWI

## The grafted vine of the varieties resistant to fungal diseases

The term PIWI derives from the German acronym that identifies the grapevine varieties resistant to fungal diseases, obtained by crossing grapevine varieties with American vine varieties resistant to downy mildew, powdery mildew and grey mold. The first crossings were made between late 1800s and early 1900s in France with the aim of selecting varieties resistant to phylloxera, as well as fungal diseases. From 1950 the so-called "new generation" crossings were carried out, resulting much more complex, since they were the result of multiple re-crossings with European cultivars. In Italy, these new varieties are registered in the national catalogue of grapevine varieties and in some regions (Friuli Venezia Giulia, Lombardia, Trentino-Alto Adige, Veneto), cultivation is allowed for the production of varietal wines with Geographical Indication.

The VITIS PIWI grafted vines arise from the collaboration of Vitis Rauscedo with the Freiburg State Institute of Viticulture (WBI-FR) and the German nursery Rebschule Freytag, for the propagation and distribution in Italy of certified plants of the German PIWI varieties, as well as for the registration and classification in Italy of new PIWI varieties. Vitis Rauscedo is also member of PIWI International, the association that since 1999, has been promoting the information exchange between research institutes, nurseries, wine growers and producers of PIWI wines, encouraging the diffusion of varieties resistant to fungal diseases.



## THE PROTECTION STRATEGY FOR VITIS PIWI GRAFTED VINES AFTER THE PLANTATION

The PIWI varieties are not immune to downy mildew, powdery mildew and grey mold, but they tolerate the fungal infections for which they have been selected, according to the pathogen pressure and the environmental conditions. The tolerance mechanism is triggered when the pathogen hits and enters the tissue of the plant that responds by necrotizing these areas, which remain very limited and often invisible, thus preventing the sporulation of the pathogen.

Therefore, 2 to 4 preventive treatments are recommended: 1 or 2 treatments in the pre-flowering phase and 1 or 2 treatments in the post-flowering phase. Even treatments based on copper and sulphur are recommended in order to limit the development of new fungal strains and counteract the infections of other fungal pathogens (anthracnose, black rot, dead arm). It is also important to protect the PIWI varieties from the insects and parasites of the vine (moths and mealybugs), with particular regard to the vectors of the grapevine yellows.





# VITISPIWI

## Bronner



### ORIGIN

The Bronner variety belongs to the collection of the Freiburg State Institute of Viticulture.

It is the result of the selection work of Norbert Becker, who crossed Merzling and "Gm 6494" in 1975.

The variety was named after the pioneer grape grower and chemist Johann Philipp Bronner (1792 - 1864), native from the Baden area.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is medium-large in size, commonly winged and averagely to very compact. The weight of the bunch is often of 280-300 grams.

### RESISTANCE TO DISEASES

downy mildew +++

powdery mildew +++

grey mould +++

### WINE FEATURES

The wine obtained from the Bronner variety belongs mostly to the neutral wines.

It shows analogies with Pinot Blanc, with reminiscent aromas of pear, apricots and apple-quince and a mild acidity. Good quality is gained by high ripening and moderate yields.

### GRAPE GROWING

For this variety the ideal environmental and soil conditions resemble those of Pinot blanc. Drought locations are, however, to be avoided. For budding, flowering and ripening Bronner follows the Pi- not varieties with a delay of about 7/10 days. Ripening is relatively late despite early flowering. Given the great vigour it is important to keep considerable distance between the plants within the row and choose e.g. a training form like the double guyot system with shoots turned down to have balanced vine plants. Given the weight of the grape berries and the compact structure of the bunches, it is recommended to intervene on the potential yield.

### BREEDING CENTRE

Staatliches Weinbauinstitut Freiburg



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# VITISPIWI

## Cabernet Blanc



### ORIGIN

Cabernet Sauvignon and resistance partners are the genetic parenthood of this cultivar, selected in 1991 by the Swiss grapevine breeder Valentin Blattner. Several years of trial analysis have been closely attended by Volker Freytag. Due to his efforts, the cultivar has finally been nominated in 2014 for the grape cultivars list throughout Europe. Cabernet Blanc has become a shooting star among the New cultivars. Besides Germany it covers an increasing acreage in the UK, Benelux and France.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The berries are of mixed size due to incomplete fertilization in bloom.

They do have a robust skin. In addition, the cluster is medium and loose in structure, so the grapes are less prone to botrytis.

### RESISTANCE TO DISEASES

downy mildew +++

powdery mildew ++

grey mould +++

### WINE FEATURES

Depending on the oenology regime and fruit maturity, the wine styles range from New Zealand style Sauvignon Blanc to exotic fruit driven wines. Complex wines with a mature acidity and thus promising aging potential are often vinified in the "Fumé blanc" style.

### GRAPE GROWING

The cultivar peaks in ripeness about the same time as Pinot Blanc. The berries start veraison late in season but comfortably reach high sugar and aroma ripeness. Deriving from Cabernet genetics, the growth is vigorous and upright. Canopy ventilation benefits from the characteristic big leaves.

### BREEDING CENTRE

Volker Freytag



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# VITISPIWI

## Helios



### ORIGIN

The Helios variety belongs also to the collections of the Freiburg State Institute of Viticulture.

It too is part of the selection work conducted by Dr. Norbert Becker by crossing Merzling x (Seyve-Villard 12 481 x Müller-Thurgau) in 1973.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is medium-large in size and averagely compact.  
The yield can reach up to 15 t/ha.

### RESISTANCE TO DISEASES

downy mildew +++  
powdery mildew ++  
grey mould ++

### WINE FEATURES

The wine produced from Helios grapes can be described as fruity and juicy with a distinct bouquet and a vivid acidity.  
The Helios wines are light with a fruity note reminiscent of Müller-Thurgau.

### GRAPE GROWING

The grape growing conditions required for this variety are similar to the environmental and soil conditions typical for Pinot Gris.  
The budding, the flowering and the closure of the bunch are simultaneous to that of Pinot Gris, whereas it anticipates the latter by a few days as far as the softening of the grape berries is concerned. In general, Helios has no particular demand to location, environment or soil and therefore produces quality grapes even in less ideal sites.

### BREEDING CENTRE

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# VITISPIWI

## Johanniter



### ORIGIN

The Johanniter variety belongs to the most popular PIWI varieties. It is the result of a combination of crossings performed in 1968 between Riesling x (Seyve-Villard 12-481 x (Ruländer x Gutedel)). This variety was dedicated to Johannes Zimmermann, in charge of the grapevine cultivation and selection at the Freiburg State Institute of Viticulture at that time. It is thanks to his work that the PIWI selections were carried out in a practical way and with great foresight.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is medium to large in size, cylindrical shaped and compact.  
The grape berries are medium to large with small dark dots on the skin.

### RESISTANCE TO DISEASES

downy mildew ++  
powdery mildew ++  
grey mould +++

### WINE FEATURES

The wines obtained from Johanniter grapes reveal a soft acidity reminiscent of the Pinots with a full body and a medium tannic structure. Its bouquet has a mild aroma of melon, citrus fruits from the lemon family and apple-quince.

### GRAPE GROWING

The plantation of Johanniter is recommended in the ideal sites for the Pinot varieties, avoiding the risk of late frost during the early budding. In terms of plant development and appearance it resembles Riesling. Ripening occurs in the same period of Pinot Blanc.

### BREEDING CENTRE

Staatliches Weinbauinstitut Freiburg





# VITISPIWI

## Muscaris



### ORIGIN

The resistant variety Solaris and the aromatic variety Muskateller are the parents of the Muscaris variety, which was selected in 1987 by Nobert Becker at the Freiburg State Institute of Viticulture. The aim of this selection was to find a variety similar to Muskateller with an early ripening and low levels of acidity, in addition to a reduced sensitivity to botrytis thanks to straggly grape bunches.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch has a medium to large structure and depending on the position, it can be slightly compact to compact. The grape berries are medium to large in size, greenish-yellow in colour with a thick skin.

### RESISTANCE TO DISEASES

downy mildew +++  
powdery mildew ++  
grey mould ++

### WINE FEATURES

The Muscaris variety reveals what its name promises. The wines present an intense Muscat aroma with a note of tropical fruits. The fullness of its bouquet is balanced in the mouth with a full body and a pleasant acidity as well as a mild smoky note.

### GRAPE GROWING

The Muscaris variety grows well in average sites. A strong rootstock is highly recommended in case of poorer sites. The planting site should be chosen considering the early budding of this variety so to avoid the late frosts of May. It is resistant to winter frost. In unfavourable years, the Muscaris variety can tend to desiccation of the rachis. Ripening is similar to Müller-Thurgau.

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# VITISPIWI

## Solaris



### ORIGIN

The Solaris variety was selected in 1975 by Norbert Becker at the Freiburg State Institute of Viticulture. It is a combination between Merzling and "Gm 6493" with a genetic footprint from Moscato ottonel. The name recalls the remarkable ripening characteristics of this variety. An early ripening and a high sugar content are typical for this "sun catcher". Winemakers from the Baden area have dedicated a great effort to obtain also renowned dessert wines from Solaris grapes.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is medium to large in size and not very compact.  
When ripe the grape berries are amber coloured.

### RESISTANCE TO DISEASES

downy mildew +++  
powdery mildew +++  
grey mould ++

### WINE FEATURES

The wine is very rich with a note of fruity and mild acidity. A marked hint of apple-quince, Mirabelle plum, almond and caramel can be obtained by varying the pressing times and the cold fermentation.

### GRAPE GROWING

It is unpretentious with regards to the environmental conditions and it has an excellent frost resistance. Solaris is very early in ripening. Harvesting in early September is not a rarity. All these aspects are to be evaluated when choosing the vineyard site. Sites in high altitudes or positioned to the north are favourable.

The typical vegetation is strong with a prostrate posture, characteristics to be taken into consideration when choosing the training and pruning system in order to ensure a good bunch drying. A large space of 2,5 m<sup>2</sup> per vine and the double guyot system with shoots turned down is also recommended so to avoid millerandage typical of this variety.

### BREEDING CENTRE

Staatliches Weinbauinstitut Freiburg





# VITISPIWI

## Souvignier Gris



### ORIGIN

Souvignier Gris belongs to the group of PIWI varieties of the Freiburg State Institute of Viticulture. The crossing between Cabernet Sauvignon and Bronner was selected by Norbert Becker in 1983.

It has been appreciated by winemakers and wine cooperatives from the Baden area to the west of Switzerland and on the Lake of Constance thanks to the generous yields and the good planting and sanitary conditions.

The character of this variety allows to make both still wines and base wines for refermentation.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is medium to large in size, not very compact and cylindrical in shape. The grape berries are medium sized and have a pink skin.

### RESISTANCE TO DISEASES

downy mildew +++

powdery mildew ++

grey mould +++

### WINE FEATURES

The wine of this variety is neutral to slightly fruity comparable to Pinot wines.

The bouquet recalls mild notes of fruit such as melon, apricot jam and apple-quince juice.

In the mouth there is a light and fruity acidity with a delicate tannicity that gives well-structured wines a persistent aftertaste.

### GRAPE GROWING

The vines show an average vigour. Low basal fertility is to be taken into consideration to establish the pruning system. Desiccation of the rachis can occur depending on the year and the soil. The ripening period is comparable to that of Pinot Blanc.

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# VITISPIWI

## Cabernet Cortis



### ORIGIN

The Cabernet Cortis variety was selected by Norbert Becker at the Freiburg State Institute of Viticulture in 1982 from the crossing between Cabernet Sauvignon x Solaris.

The purpose of this selection was to obtain a red variety suitable for the colder climates of the German wine regions with a range of aromas, extracts and tannic structure comparable to the classic international grape varieties.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is long-limbed, cylindrical shaped, slightly winged and relatively sparse. The size of the grape berries resembles that of the Pinots.

### RESISTANCE TO DISEASES

downy mildew ++  
powdery mildew ++  
grey mould ++

### WINE FEATURES

When harvested at the peak of ripeness, Cabernet Cortis strongly resembles the intense wines obtained from Cabernet grapes. Its high level of extracts and polyphenols are visible in its deep red colour going into tones of violet. The taste is spicy with notes of freshly ground pepper, currant jam and almost too ripe elderberries. Thanks to its tannic structure, Cabernet Cortis wine is suitable for long ageing in wooden barrels or bottles.

### GRAPE GROWING

This variety is characterised by a strong vigour and an erect posture. Ripening is reached about a week before Pinot Noir.

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# VITISPIWI

## Cabertin



### ORIGIN

The crossing of Cabernet Sauvignon and resistance cultivars has been performed by Valentin Blattner in 1991. The breeding goal was to find a specimen of Cabernet genetics that matures earlier and more evenly with a smooth tannic profile. Volker Freytag is responsible for the performance of trials in the vineyards as well as microvinification.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is long and pyramidal. Small, round berries are arranged in a loose set. The waxy skin layer protects from infection by fungi esp. botrytis.

### RESISTANCE TO DISEASES

downy mildew +++  
powdery mildew ++  
grey mould +++

### WINE FEATURES

Wines made from Cabertin do have many attributes of the genetic parent Cabernet Sauvignon. Characteristic are black currant, black and red pepper, mocha and spicy tobacco. There is a good tannin structure present. In vintages which allow a long maturity, the tannins become round and soft. In seasons of lesser ripeness, the tannins may be astringent and rough. A prolonged barrel-aging is advantageous for longevity of wines.

### GRAPE GROWING

The peak maturity is reached at similar time to Merlot. Deriving from Cabernet genetics, the growth is vigorous and upright. Canopy ventilation benefits from the characteristic big leaves.

### BREEDING CENTRE

Volker Freytag





# VITISPIWI

## Pinotin



### ORIGIN

The cultivar "Pinotin" has been a result in 1991 of the breeding works of the Swiss Valentin Blattner. It is a crossing between Pinot Noir and a resistant cultivar. Volker Freytag has closely attended trials and microvinification to promote this cultivar among winegrowers and in science and administration. As a result, Pinotin has been officially confirmed in 2014 in the European and German grape cultivars list.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is long, unshouldered and shows a loose berry set. The berry is round of medium diameter and thick skin. Because of its loose berry set the maturity progresses evenly during veraison.

### RESISTANCE TO DISEASES

downy mildew +++  
powdery mildew +++  
grey mould ++

### WINE FEATURES

The colour of the wine is a ruby-red and the aroma is reminiscent of black cherries and the aroma with low acidity and tannin levels and thus produces easy drinking, fruity red wines.

### GRAPE GROWING

The cultivar reaches its optimum ripeness in the first half of September, comparable to Regent or Pinot Madeleine. The vigour is medium similar to Pinot Noir but the canopy tends to grow more vertical.

### BREEDING CENTRE

Volker Freytag





# VITISPIWI

## Prior



### ORIGIN

Even the Prior variety belongs to the collection of the Freiburg State Institute of Viticulture. It is the result of Norbert Becker's selection work of a crossing between (Joan Seyve 234- 15 x Blauer Spätburgunder) and (Merzling x (Zarya Servera x St. Laurent)) performed in 1987.

### AMPELOGRAPHIC FEATURES OF THE VARIETY

The bunch is medium to large in size and averagely to very compact; it is wide in structure with a short and marked tip. The flavour is reminiscent of sweet cherry. The yields can reach 14 t/ha.

### RESISTANCE TO DISEASES

downy mildew +++  
powdery mildew +++  
grey mould +++

### WINE FEATURES

The grapes of this variety offer wines rich in colour and tannins with a bouquet that varies from neutral to slightly fruity. In young Prior wines it is possible to scent aromas of wild berries. On the palate the wine develops a pleasant and persistent enveloping effect.

### GRAPE GROWING

Ripening is late, after Pinot Noir, hence a suitable site for the vineyard is required to guarantee a sufficient ripening period.

### BREEDING CENTRE

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