

## COLD HARDY WINE GRAPES



# Frontenac Gris

Released in 2003, this variety is known for its vigor and high disease resistance. The 'gris' in the name Frontenac gris is a nod to the gray color of the skin of these grapes. The pink-berried variant produces wine with a characteristic peach flavor but retains many of the same viticultural characteristics as the original Frontenac cultivar.

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## FRUIT CHARACTERISTICS

Frontenac gris vines grow loose, medium-sized, conical clusters averaging 131 g and typically 18 cm in length. These grapes produce wines with good body and are known for their strong fruity flavors, especially peach and pineapple with hints of honey. Wines are typically produced in a white wine style, with the tint of the skins producing white wines with a hint of salmon color. Depending on the season and winemaking techniques the color can be much darker.

## HARDINESS

It is a very hardy variety, and in trials it has been proven hardy as low as -35 °F. It is as hardy as Frontenac and Frontenac blanc, and marginally less hardy than Itasca. This variety is reliably fruitful on secondary buds that typically are not injured in Minnesota's cold winters.

## VIGOR

Frontenac gris has moderately high vigor.

## BUD BREAK AND HARVEST TIMING

Frontenac gris has an early-midseason bud break. This midseason-harvested variety has an average harvest date of September 27th in east central Minnesota. However, some growers choose to harvest later which leads to lower acidity and increased concentration of flavors and color. This includes late harvest and ice wines.

## HARVEST PARAMETERS

Frontenac gris should be harvested when the soluble solids (sugar content) are between 23 and 26 °Brix and at a pH around 3. Its titratable acidity levels can be as 14 g/L in the juice. Yeast selection and amelioration can reduce the overall acidity and raise pH in the wine products.

## TRAINING SYSTEMS

Frontenac gris can be trained onto Vertical Shoot Positioning (VSP), High Wire (HW), or Geneva double curtain training systems depending on the grower's preference. Its semi-trailing growth habit makes it suitable for HW, but can also be trained to VSP.

## BUDS AND CLUSTERS PER VINE

Six to eight buds per linear foot of cordon (trellis) or 35 to 50 buds per vine with 6 foot spacing is ideal. Shoot thinning can be used to manage overly productive vines and to properly crop the plant. Frontenac gris can have up to 3 clusters per shoot. Each vine may produce up to 12 lbs of fruit.

## PRUNING AND CANOPY MANAGEMENT

Proper bud placement can help ensure vine balance. Vines have on average a bud every 2.5-3 inches. When spur pruning, maintain 3-3.5 spurs per linear foot, and shoot thin to 2 shoots per spur. Spur and cane pruning are both acceptable for Frontenac gris. Trunk, cane, and spur renewal should be planned for and carried out regularly to reduce disease pressure and maintain vine productivity. This proactive approach will promote the long life of the vineyard. Winter injury and disease can weaken vines over time. Training new canes to become cordons is one way to establish and repair gaps along the trellis.

Fruit zone leaf removal and shoot thinning can both be used to promote a balance between vegetative and reproductive growth, and expose fruit to sun to enhance ripening.

## PEST SUSCEPTIBILITY

Frontenac gris performs well against pests, but research done at University of Minnesota vineyards show that it is moderately susceptible to powdery mildew and leaf phylloxera. It has low to moderate susceptibility to black rot, and very low susceptibility to downy mildew and bunch rots, like Botrytis. A fungicide program, especially around bloom, that addresses these pests will help ensure a healthy crop.

## FOR MORE INFORMATION:

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