INTRODUCTION

The quality of Cognac spirits is unanimously recognized throughout the world. This is the result of the determination shown by the wine-growers and traders in conquering a quality market. For the professionals of the region, wine-growers and traders, it was necessary to:

- determine the best growing areas, as the vineyards were extended
- select vine varieties which were better adapted to distillation; hence the appearance of the Ugni blanc variety.
- combat diseases of the vine for a harvest of healthy grapes
- harvest and process in keeping with traditional methods, while integrating inevitable developments in mechanization
- perfect the stills, helped by a fruitful collaboration with local manufacturers, notably in determining the best proportions between the volume of the pot, that of the cap and swan's neck and the length of the condenser coil
- improve distillation techniques by carrying out two successive distillations, and producing a spirit which is smoother and finer, and higher in alcohol
- respond to the desires of a consumer who is more and more exacting
- select and encourage the best spirits
- research with the cooperers to find the best oak casks for aging
- combat fraud by respecting the inherent characteristics of products of the area
- increase analytical and organoleptic controls.

THE GEOLOGY AND THE 'CRU' (GROWTH AREA)

The geographical area used for cognac production is split administratively by the decrees of 1 May 1909 and of 15 May 1936. It includes nearly all of Charente Maritime, a very large part of Charente and some neighboring communes of Deux-Sèvres and of the Dordogne. The vine area totals some 82 000 ha. Within this geographic zone were formed subdivisions of designated areas or 'crus' (decree of 13 January 1938), as a function of the particular characteristics of the spirits produced (Audemard et al., 1973):
• Grande Champagne,
• Petite Champagne,
• Borderies,
• Fins Bois,
• Bons Bois,
• Bois Ordinaires.

THE VINE VARIETIES

According to the decree of 11 March 1971, the wines destined for distillation to obtain Cognac spirits must originate from the following wine varieties:

• principal vine varieties: Ugni blanc, Colombard, Folle Blanche,
• auxiliary vine varieties are accepted up to a maximum proportion of 10 % of the blend: Semillon, Blanc ramé, Jurançon blanc, Montils, Select.

The Ugni blanc variety today represents more than 95 % of white grape varieties of the region. It is a late vine, vigorous and productive. It gives, in the Cognac region, wines with very high acidity and low alcohol, appropriate for distillation. The spirits are fine, fragrant and a little dry.

The Colombard, a late-ripening vine variety, is a good producer. It is sensitive to oidium disease and grey rot. The wines are of good quality, fragrant and with an odor of flint. The spirit lacks a little fineness. The Folle Blanche is unfortunately sensitive to black and grey rot. It gives spirits that are rounded and rich, with a greater bouquet, a long-lasting aroma and appropriate for long aging.

The Montils, classified as ‘recommended’, is a good producer. The spirits are fine and floral. Galy et al. (1992a) demonstrated big differences between these vine varieties for three alcohols whose origin is linked to the variety: hexanol, cis-3-hexenol, α-terpineol (Table 9–1). These differences exist independently of the year of harvesting, the location and the winemaking or distillation techniques. The Folle Blanche and the variety obtained by crossing it with the Ugni blanc (INRA 8476) are richer in α-terpineol. The Colombard shows the highest levels of hexanol, while the Ugni blanc contains the most cis-3-hexenol.

On tasting, the spirits of the different vine varieties also present specific characteristics (Table 9–2):

• the Montils is appreciated for its fineness and the intensity of its aroma
• the Folle Blanche possesses aromas that are less fine, but very rounded which develop well with aging
• the Colombard, is described in terms reflecting the high levels of hexanol (‘green’ flavor) of the spirits.

Table 9–2 shows the potential of two vine varieties of the Appellation Contrôlée zone, Montils and Folle Blanche, put aside today in favor of the Ugni blanc.

| Table 9–1 Average levels of the three most discriminant compounds in spirits (mg/l of spirits at 70% vol.) |
|--------------------------------------------------|----------|-------------|-----------|
| Vine variety | Hexanol | cis-3-Hexenol | α-Terpineol |
| Montils | 17.5 | 0.59 | 0.19 |
| Folle Blanche | 11.7 | 1.19 | 0.41 |
| Ugni blanc | 13.4 | 2.16 | 0.20 |
| Colombard | 39.1 | 1.46 | 0.17 |
| Folignan* | 4.1 | 0.08 | 0.65 |

*A variety obtained by crossing Folle Blanche with Ugni blanc which is being tested but is not yet authorized for cognac.