

Lavender, Lavandin and other French Oils

By Bruno Lalande, Director, H. Reynaud et Fils, Montbrun-les-Bains, France

My purpose will be to present an overview of the main essential oils produced in France, trying to see, for each, specific points. First of all, I wish to locate for you the different productive areas. Many of you receive oils from Vaucluse or Basses-Alpes. You are familiar with Nice, Cannes, Marseillé on the coast, and in the middle, from the north to the south, the Rhone Valley.

Basses-Alpes (now named Alpes de Haute-Provence) produces the largest quantity of Lavandin Grosso (about 400 tons). Seventy percent of the French Lavender 40-42% grows in the Vaucluse mainly on the Plateau d'Albion. The

Hautes-Alpes has the main production of Lavender 50-52% and 48-50%.

The area of Drome has good Lavender in the north, and Lavandin Grosso and Lavandin Abrialis in the south. On the other side of the Rhone, Lavandin Grosso and Abrialis grow in the Ardeche and Gard.

Montbrun (see photo 1), where Reynaud et Fils has been established since 1898, is between Drome, and Vaucluse, Basses-Alpes and Ardeche, just in the middle of the productive areas.

Lavender

"Noblesse oblige," we have to begin with Lavender. (I shall pass by the successive sales slumps which have affected this oil. The result is a yearly production which has fallen from ninety tons, ten years ago, to about sixty tons now.) A great deal of effort has been put into making known the quality of oils from "Population Lavender." By "population," we mean a cultivation of individuals in each field. The different colors of flowers, from white to blue, show the blend very well. (See photo 2.) This kind of cultivation guarantees the typical quality of French oil, which is the same as at the beginning of the century when only wild Lavender was harvested on the mountains. We maintain the diversity of population by collecting seeds fallen from flowers on the distillery floors.

Photo 1

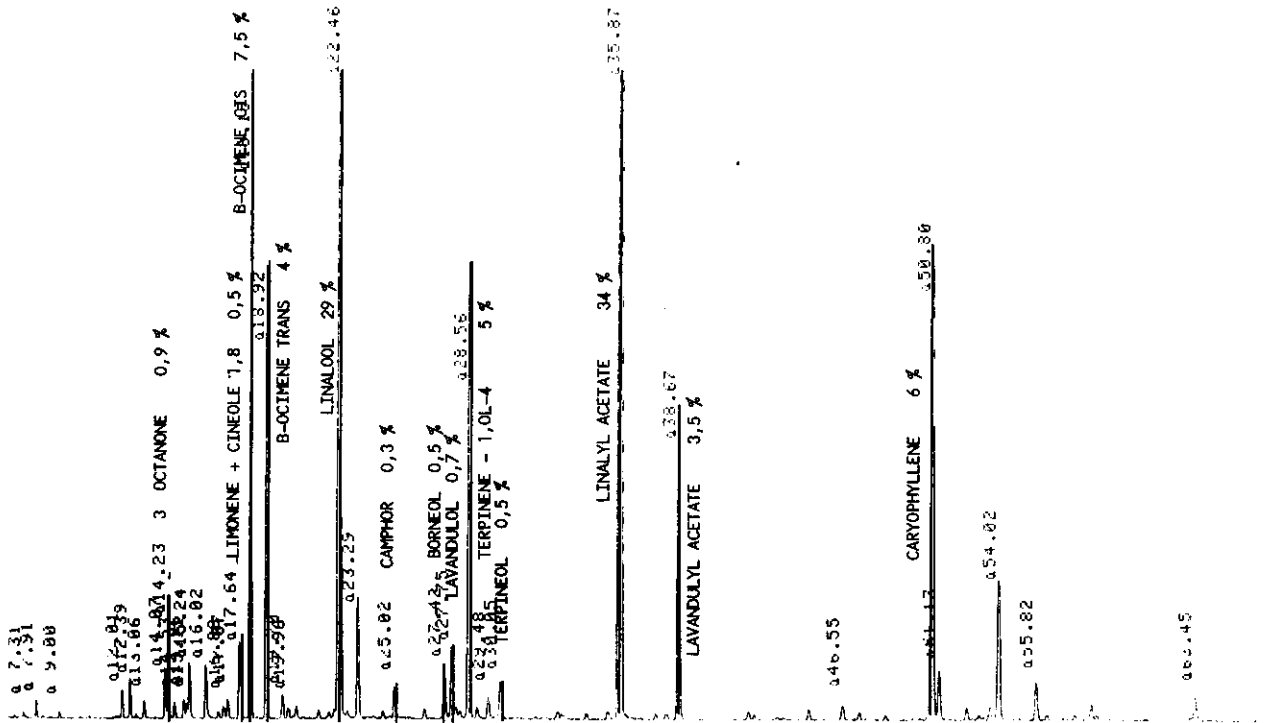


Figure 1

A typical chromatographic profile showing a normal balance of constituents in a French Population Lavender is shown in figure 1. In A.F.N.O.R. (which is the French specification organization), we have fixed a provisional standard for the main percentages of Population Lavender as follows:

- 3-Octanone—2 maximum
- Cineole 1,8—1.5 maximum
- Limonene—0.5 maximum
(here included in the same peak as Cineole)
- β -Ocimene cis—between 4 and 10
- β -Ocimene trans—between 2 and 6
- Linalool—between 25 and 38
- Camphor—less than 0.6%
- Lavandulol—0.3 minimum
- Terpinene -1 ol -4—between 2 and 6
- α Terpeneol—1 maximum
- Linalyl acetate—between 25 and 45
- Lavandulyl acetate—2 minimum

Photo 2

Lavender drops to a maximum of 25 kilos with an average of 15.

Lavandin

We hear so frequently the *reproche* of imposing Grosso instead of the usual Abrialis that I have to explain again why French growers made

Photo 3

the change. The photos will show this more clearly. In photo 3, we see an 18-month-old Abrialis field. Photo 4 is a Grosso Plantation at the same age and in the same soil. You can appreciate the quicker development of the plant.

You understand that such a great difference between plant types involves differences in oils and yields. Abrialis, ten years ago, used to produce 100 to 120 kilos per hectare, but has now

Photo 4

dropped to a maximum of 80 kilos/hectare. That production must be compared to the yield of Grosso which is between 150 and 200 kilos/hectare.

We have arrived at the present situation where, out of an average availability of 1,000 tons/year, Abrialis represents 200 tons, Grosso represents 700 tons, and the others represent 100 tons, being Super, but also 33/70 or 41/70. All varieties appeared with Grosso in the 1970s but without success.

Five years ago, the proportions were equal

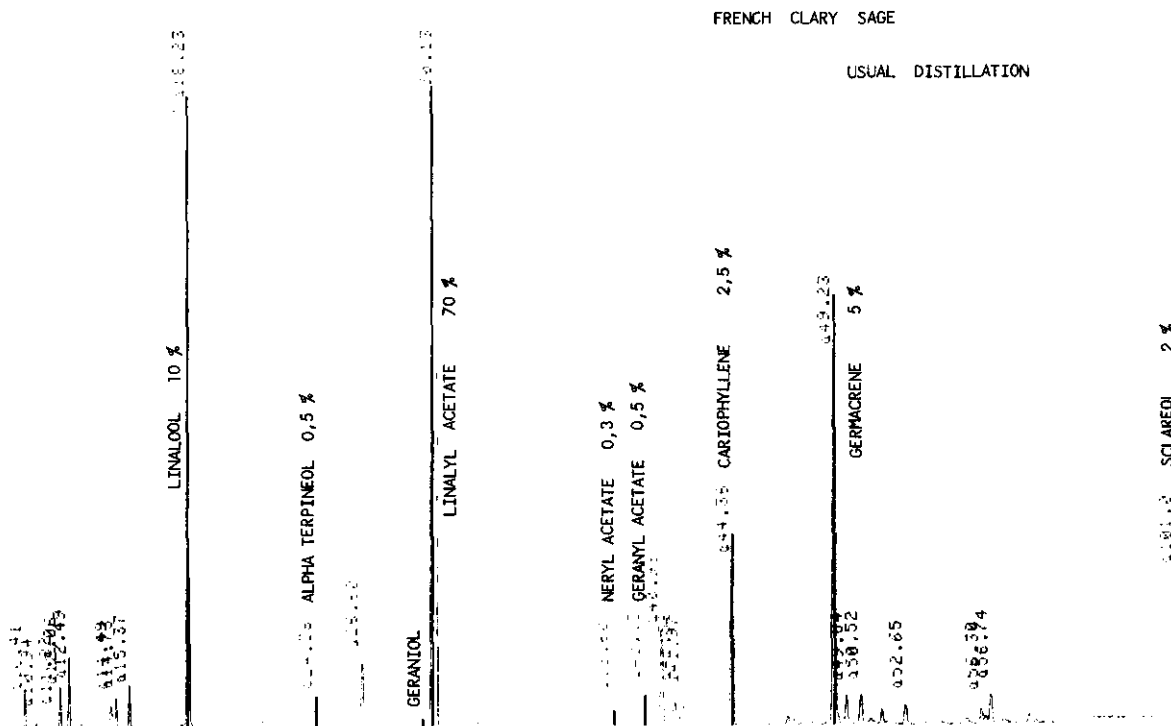


Figure 2

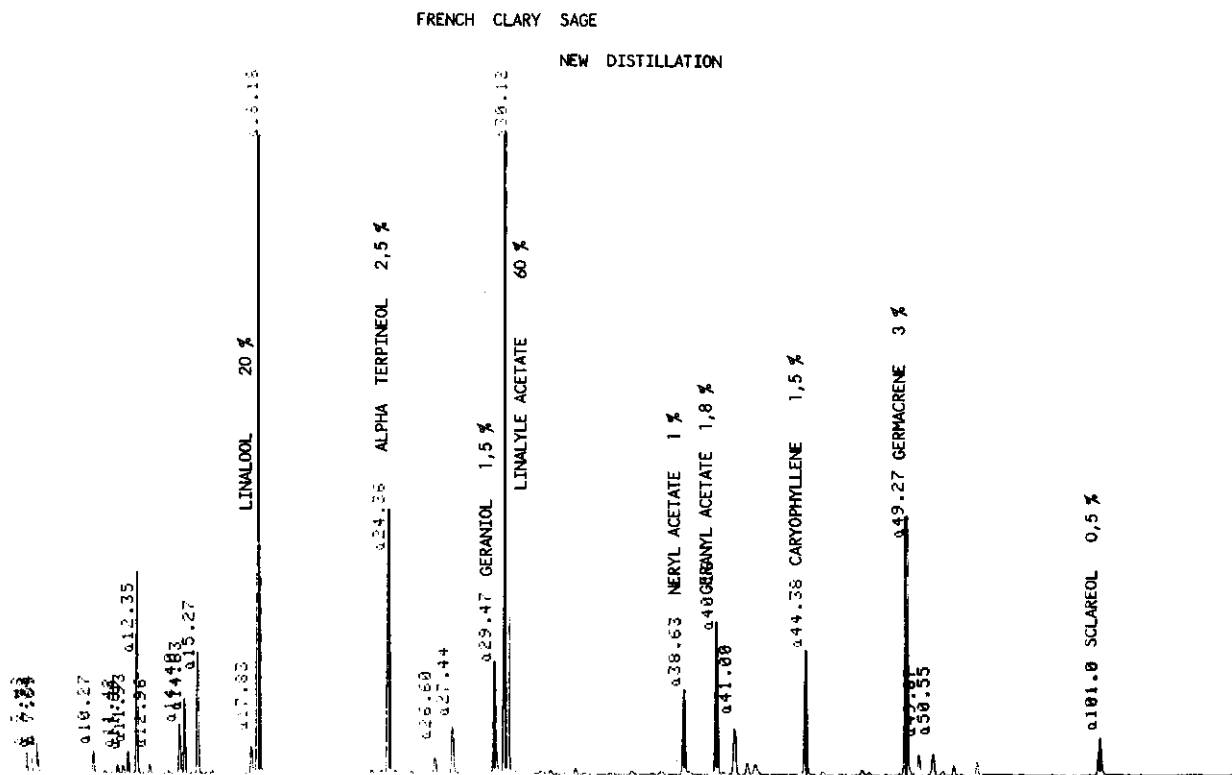


Figure 3

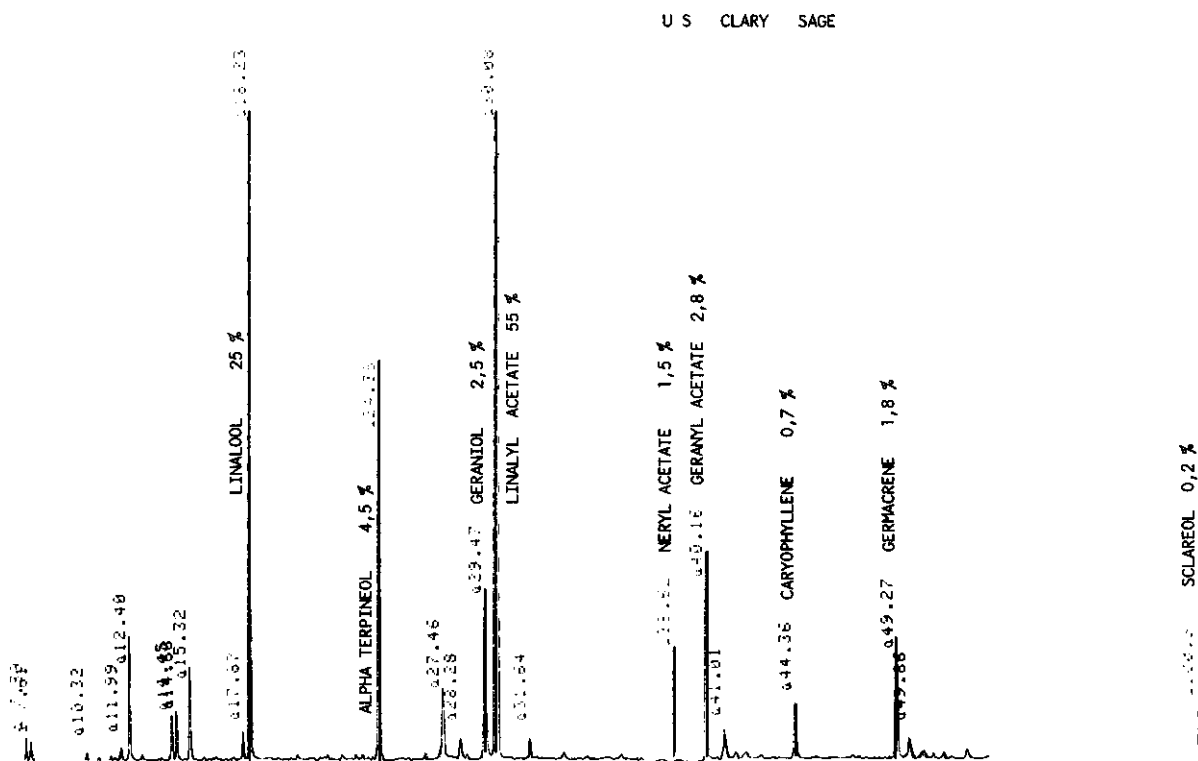


Figure 4

between the production of Abrialis and Grosso, around 400-500 tons available for each. In 1974 Grosso availability was only 200 tons.

We should remind ourselves that the life span of an Abrialis plantation decreased from ten years during the 1960s to an average of four to five years now. We have to face up to a problem of degeneration. The arrival of Grosso with its greater resistance and productivity marked the end of growers' problems but the beginning of ours.

A.F.N.O.R. established chromatographic profiles of each oil which you can see in Table I.

Table I. Provisional A.F.N.O.R. Specifications for Lavandin Flower Oils

<u>Constituent</u>	<u>% in Abrialis</u>	<u>% in Grosso</u>
Cineole 1,8	6-11	4-7
beta-Ocimene-cis	1.5-4	not fixed
beta-Ocimene-trans	3-7	not fixed
Linalool	30-38	25-35
Camphor	7-11	6-8
Borneol	2-4	1.5-3
Lavandulol	0.5-1.5	0.3-0.5
Terpinene 1 ol 4	less than 1%	2-4
Linalyl acetate	20-30	28-38
Lavandulyl acetate	1-2	1.5-3

Photo 5

Clary Sage

Now, just a few words about Clary Sage (see photo 5) because some French farmers are trying to improve the yield by modernizing traditional distillation. With the old method, stems of sage are dried and left uncut before the distillation. This year, a quarter of the crop (which is around 3,000 k) has been distilled from green sage and chopped.

Profiles of sage oils obtained are quite different. In the new way, one not very far different from American oil, the content of linalool increases from 10% to 20-25%. Of course, linalyl acetate decreases from 70% to 60% and less. Alpha terpineol, geraniol, geranyl acetate, and neryl acetate increase. But the main important difference will be the lower content of sclareol, germacrene and caryophyllene, which affect the odor and power of this oil (see figs. 2, 3 and 4).

Cypress

Because it is a typical winter production, I wish to end with Cypress (see photo 6). The branches come from hedges. In Provence, windbreaks are needed to protect the fields. We

Photo 6

have a very strong, cold and well-known wind called *mistral*, which blows from the north to the Mediterranean throughout the Rhone Valley.

Early vegetables grow in the south of this valley. During fall and winter, farmers cut the hedges to limit the shadow as much as possible on the future crops.

To understand why the price of the oil obtained from cypress branches is quite high (around FFRS 300.—; US \$35.—), you must realize that the maximum yield is 0.5% from the branches' weight after a distillation of twenty hours.

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Reynaldo Cicuttini (Chemoil) with Carlos Benaim (IFF)



Stan and Betty Lou Allured (both of Perfumer & Allured)