

Bois de Rose Oil: A Glimpse into the Past

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As chance would have it, Dr. George Clark and I were discussing his article on linalool (pg. 49), and he mentioned that he had in his possession an heirloom from his dad, a 1942 vintage sample of Bois de Rose oil from Dodge & Olcott (ten years before, the name of Fritzsche became part of the moniker).¹ It immediately occurred to my suspicious, skeptical and sleuthing nature that this was the perfect opportunity to examine the oil to see what resemblance it bore to the existing quality of Bois de Rose oil of today. As I suggested this to George he replied, "Great idea! You write the article." So much for the history of this article. Now onto the history of Bois de Rose.

Bois de Rose oil, as it exists today, comes primarily from two sources in Brazil, Empresa Industrial Ltda., and I. B. Sabba.² While there is limited supply of rosewood oil, there is plenty of pure synthetic linalool (the free of dihydro linalool variety) which can bolster the short supply. At one point, in the early 1950s, Bois de Rose oil ranked as one of the top 15 "biggest" essential oils in the world.³ Today, at approximately 100 tons per year, it is in peril of extinction. In a somewhat ironic fashion, Bois de Rose, due to its lower price was used as an adulterant for linaloe wood oil. As we examine the following sequence, we can view from an historical perspective the economic pressures that brought us to the point that we are at today.

At one point in time, Bois de Rose oil was used in perfumes, colognes, soaps, detergents and a wide variety of functional products. Today its use is quite limited, like the supply, to fine colognes and applications where the effects of trace ingredients play an important olfactory role.

It seems a shame that the economic forces imposed by competition and demand have so

Table I. Linalool Containing Oils

Bois de Rose Cayenne from Guiana

Adulterated and replaced by lower priced:

Linaloe Wood Oil from Mexico

Adulterated and replaced by lower priced:

Bois de Rose from Brazil and Peru

Also playing a part as a major competitor:

Ho Leaf Oil from Formosa

All of these oils were, in the end, largely replaced by synthetic linalool.

greatly reduced the use of these natural oils. The difference in odor is significant. The use of the natural oils automatically incorporates many trace terpenes and powerful oxygenated components which perform much better and introduce a lively character to the finished product. There are over 60 components in Bois de Rose, while synthetic linalool has only one component with a few trace impurities. Unfortunately, there are far too few people and companies who can successfully resist such powerful economic pressure.

Be that as it may, history is history. I have taken advantage of this unexpected opportunity to take a glimpse into the past a few years before I was born, to examine and compare the qualities of three commercial samples of Bois de Rose oils (see Table I).

The odor differences in the samples are, as might be expected, not very great. The 1942 oil is more camphoraceous and piney. This may be a result of the higher α -terpineol and oxidation products of linalool. It is also possible that the

Table II. Comparison of Bois de Rose Oils

<u>Constituent</u>	<u>% 1942</u>	<u>% 1977</u>	<u>% 1988</u>
alpha-pinene	0.22	0.38	0.50
camphene	0.02	0.02	0.01
benzaldehyde	0.01	-	-
methyl heptenone	0.40	0.30	0.40
beta-pinene	0.50	0.40	0.50
myrcene	0.23	0.10	0.10
limonene + eucalyptol	2.60	2.00	1.70
phellandrene beta	0.16	-	-
linalool oxide cis*	1.75	1.27	1.06
linalool oxide trans	1.54	1.11	0.71
linalool	65.46	78.79	77.50
terpinen-4-ol	0.60	0.40	0.37
terpineol alpha	11.98	6.06	5.94
neral	1.22	0.81	0.60
geraniol	1.75	1.89	1.80
geranial	1.72	1.04	0.80
terpinyl acetate**	1.38	-	-
caryophyllene beta	0.48	0.22	0.20
cadinene	0.22	0.42	0.35

*The oxides of linalool will form over time. The increase in linalool oxide can be seen in the comparison in Table I.

**This is the first time terpinyl acetate has been found in Bois de Rose oil.

pine oil aroma comes from the addition of pine oil fractions to the original oil.

At the outset of this investigation, I expected to find that the 1942 oil would prove to be the pure unadulterated sample. I am once again reminded that a good scientist never has preconceived notions, and that adulteration is not a modern invention.

As we examine and compare these oils, we can focus on a few significant details (see Table II). In the 1942 sample, linalool is only 65% while the other two are in the 80% range. The α -terpineol is at 12% while the other two are at 6%. From this, we might conclude one of a few possibilities: (1) The 1942 oil is of a different chemotype or genotype where the linalool content was naturally lower and had as a result higher concentration of α -terpineol and trace ingredients.⁴ (2) That the 1942 oil was adulterated with terpineol and various fractions of pine oil which was common at that time.⁵ This may explain the existence of terpinyl acetate which was reported for the first time by the author. There is no terpinyl acetate in the other two oils. (3) That the 1977 and 1988 oils were adulterated with synthetic

linalool. (4) It is, of course, possible to have a combination of these events taking place and, as usual, make matters more complex than they might appear.

In any event, this has been an interesting glimpse into the past. As described earlier, I am naturally skeptical of adulteration. In the case of Bois de Rose oil, it is quite easily accomplished. One must always be willing to expend the effort required and employ a good quality control system to maintain and monitor the quality of oils like Bois de Rose which are easily targets for adulteration.

References

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