# Indonesian oil of patchouli

By Benjamin Benveniste, Aroma Resources, Division of Biddle Sawyer Corporation, New York, NY

This report on patchouli oil is based on a fact finding mission, just completed, through all the major growing and distilling areas of Indonesia. Patchouli oil is one of the most important essential oils as a fragrance ingredient in major products on the market, and continues to be used by perfumers in their creation of new perfume fragrances.

Since no generally acceptable product has been created to replace patchouli, demand continues undiminished, and may well increase in the near future. The importance of this essential oil makes it imperative for the consuming industry to have frequent factual reports highlighting growing and distilling areas, the channels of supply, and factors that affect timely availability in the marketplace of good quality products.

It appears to us that the future location for the growth of the Indonesian patchouli industry seems to be the Aceh Region, located on the west coast of Sumatra. More specifically, the area between Celang and Tapktuang, a major producing area for patchouli 25 years ago, is being revived. As a result of a developing lumber industry at this time, new land areas that can be planted to patchouli are being made available. The industry is receiving firm support from the local government, designed to foster the agri-industrial development of the patchouli industry. The Aceh government extends financial and technical assistance to small farmers in the region, urging them to grow patchouli. Major shippers of the oil itself lend their support and encouragement to the local government to ensure the success of this project.

This area of western Sumatra currently produces approximately 1,000 kilos of patchouli oil per week. This is very small compared to the estimated production on the island of Nias, which is credited with a production record of 10 metric tons per week. Informed sources in the Aceh area are firmly convinced that within a year or two the region under review will be able to triple its production, and that by 1982 the province will produce 150 metric tons per year.

Price in the world marketplace for patchouli oil will have a major effect on annual production in all regions. The authorities of Aceh Province, local traders and major shippers, continue to emphasize the importance of an adequate financial return to the industry as being absolutely necessary to encourage the revival and the growth of the patchouli industry. They observe that patchouli oil in 1975 brought prices as low as $8.50 per kilo and that at such levels it was uneconomic for the industry to cultivate and to distill patchouli leaves.

The patchouli plant depletes the soil. In some regions the soil will permit one growing season; in others the soil is rich enough to support two or three growing seasons before the soil is denuded of nutrients. Small growers at the very onset, when they make the decision to cultivate patchouli leaves, realize that they will have to move their families and distilling units to a different location within two to three years.

The farmers' preference is to devote their small plots of land and family attention and labor to other cash crops, such as beans, potatoes, peanuts, or soya beans, which do not denude soil nutrients. Quite recently, the farming community had added the cultivation of cloves, rubber, and coffee. These products require a much longer period of time to obtain a salable crop, which ties the farmers and their families to the land on which they currently live. Their reluctance to undertake the cultivation of patchouli leaves, which obliges them to move every two or three years, must be overcome with adequate financial incentives.

The island of Nias today represents the major producing area for patchouli oil. Currently annual production there is estimated at about 500 metric tons. Informed opinion holds that production in this region has peaked and that within three to four years it will begin to decline. The underlying reason for this anticipated decline is that most of the virgin or arable lands will be exhausted.

Lands denuded of nutrients by earlier cultivation of patchouli leaves and subsequently replenished naturally, have been planted to coffee, rubber, and coconut trees. This is a long term and expensive commitment. Farmers are therefore reluctant to reintroduce the cultivation of patchouli leaves in these areas, fearing the loss of productivity that patchouli production would eventually cause.

The use of chemical fertilizers is unknown to small

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farmholders and there is an absence of the technology of such usage in the region. A few farmers who have some limited knowledge express concern that chemical fertilizers would reduce the oil content of the patchouli leaves very substantially.

The patchouli plant is propagated from cuttings and has continuous growth throughout the year. The optimum planting time in both Nias and the west coast of Sumatra is August through December, a period of heavy rainfall. During periods of drought or when rainfall is inadequate, propagation is delayed and this has an adverse effect on anticipated production. This is what the region experienced during the last planting season.

Patchouli cuttings are planted about 60 centimeters from each other. A fully grown plant can reach a height of 1 to 1¼ meters with a diameter of about 60 centimeters. It is difficult to walk through a healthy fully mature field. Such plantations as yet do not exist on the west coast of Sumatra, where most of the patchouli fields are young and the plants have reached a maximum height of 30-40 centimeters.

Many patchouli plantations in western Sumatra have been affected by disease, which will reduce the yield of patchouli oil. The disease in question has not yet been identified by the local agriculture authorities. It affects the roots of the plants causing the leaves to dry. The ultimate effect withers the plant.

The patchouli plant takes from 7 to 9 months to achieve full growth. The plant is cut at ground level during the collection season. If the soil is fertile enough to support another growth, the plant is only

pruned back so that the young stronger branches remain, and a second growth can be harvested a few months later.

Following the picking process patchouli leaves are spread out in the sun to dry for several days before being placed in baskets, where fermentation of the leaves commences. This is a most important part of this agri-industrial system, most necessary prior to the distillation process. A basket will hold 15 kilos of dried leaves.

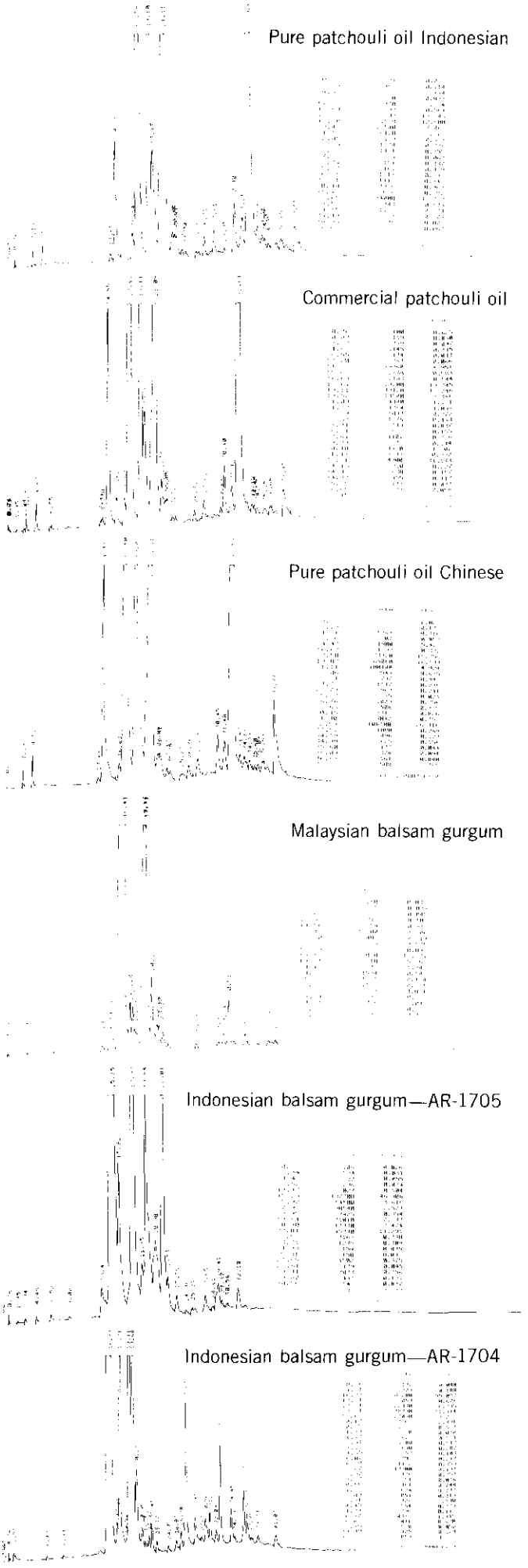
A hectare of land planted to patchouli will produce 2 to 4 metric tons of fresh leaves. Adequately sun-dried, the leaves lose 80-85% of their wet weight. In other words, one metric ton of wet patchouli leaves will yield 150 kilos of dried leaves.

The distilling factories in western Sumatra and in Nias are primitive. They are located near good supplies of water. However, in periods of inadequate rainfall, production stops due to insufficient water for the distillation and cooling process. The leaves are stocked during such periods.

A normal distillation unit will be charged with 90 kilos of dried leaves. It takes about 6 hours to complete the steam distillation process. Depending upon the quality and maturity of the leaves, there is an oil yield of between 1.8% and 2.2%.

The primary distilled oil is traditionally moved to terminal markets on Thursday of each week. Local collectors make their round of the distilleries daily to collect oil from the small producers. There is sound reason for this system, as adulteration of patchouli oil is not normally done by the farmer or the distiller. This is normally done by the traders at the delivery points—the so-called terminal markets.

The quantity of patchouli oil produced by a single distillation unit is limited. Therefore, whether the oil is taken to terminal markets or picked up by collectors at the distillation sites, deliveries are small and as a matter of interest, local sales are delivered in small cans or soda bottles.




While the law in Indonesia specifically prohibits the adulteration of patchouli oil, it is nevertheless done on a large scale. The main adulterating is with balsam gurgum, which occurs in Sumatra. The authorities on the island of Nias prohibit the importation of balsam gurgum, but smuggling is easy and a constant activity.

From Nias exportable patchouli oil is moved to the coastal port of Sibolga and reforwarded to Banda Aceh or Medan by truck. The traveling time, Sibolga to Medan, takes about 12 hours. Likewise, patchouli oil ready for export from western Sumatra is moved to Medan by truck.

There is hope and belief that the current drought in western Sumatra and on the island of Nias may end by May of this year. This should increase the delivery of patchouli oil to world markets. The demand is heightened by the realization, especially in western Europe, that the production of patchouli on the island of Nias is declining and that plant disease and drought conditions in western Sumatra adversely affect production.

Obviously, production that depends upon local economic conditions, as well as the international prices for patchouli oil, climate and soil conditions, and the laws of supply and demand will combine to have great effect on the future costs and the availability of patchouli oil.

Indonesian statistics indicate that 368 metric tons were exported in 1977, 533 metric tons in 1978, and while official figures for 1979 are as yet unavailable, there is general agreement that total exports range between 550 and 600 metric tons.