

AN OVERVIEW OF SOME IMPORTANT ESSENTIAL OILS AND OTHER NATURALS

The IFEAT Socio-Economic Sub-Committee has now finalised its report on the socio-economic impact of petitgrain oil Paraguay production. This is the sixth of twelve reports due to be produced by the committee on the importance of specific naturals to the livelihoods of those involved in their production. Previous reports have covered the production, processing and marketing of patchouli, cornmint, citronella, jasmine and geranium. The twelve products chosen for analysis by the committee have been picked because of their high impact on the lives of those involved in producing them and the large number of people affected.

IFEATWORLD will continue to give updates on the work of the Socio-Economic Sub-Committee, chaired by **George Paul**, over forthcoming months and report on the production of the other six vital raw materials that are included in the committee's remit. This is an important study for IFEAT, as the information gathered could help to reinforce federation views in future legislative/regulatory discussions.

PETITGRAIN

Petitgrain Oil Paraguay (*Citrus aurantium* L. var. *Paraguay*) syn (*Citrus aurantium* var. *bigaradia* Hook f.)

INTRODUCTION

Petitgrain oil Paraguay is widely used in fragrance compositions for all kinds of perfumery products, cosmetics and household chemicals. Its sweet, woody-floral, citrus odour has many applications from "Narcisse Noir" (created by Caron in 1911) to most popular toiletries, washing products and many others. Its easily obtainable modifications (eg no bergaptene, low limonene) extend its range of applications. It is also an important therapeutic ingredient of aromatherapy mixtures. Valuable in therapy for depression, anxiety and sleeplessness petitgrain Paraguay also has antimicrobial properties and is used in pharmacy against acne and mycosis, especially in feet. It is listed in British, US and EU Pharmacopeia. ISO Standard 3064:2000.

The weather and temperature of the Oriental Region of Paraguay are very beneficial for the bitter orange tree (*Citrus aurantium* ssp.) from which the raw materials are picked for petitgrain oil production. In this region 80% of the species is cultivated and 20% grows wild.

Paraguay is the main producer of petitgrain oil. The main production departments are San Pedro (accounting for around 92% of production), Canindeyú, Cordillera and Caaguazú (Fretes and Martínez, 2011).

The total production of petitgrain oil in Paraguay amounts to 200 tonnes per year, accounting for over 80% of global production. Around 98% of the production in Paraguay is exported (Amigo, 2011).

PRODUCTION AND PROCESSING CHARACTERISTICS

Petitgrain oil is produced by steam distillation of harvested leaves and twigs from the bitter orange tree. This tree is sown from seed and can take up to 5 years for the first cutting and distillation, and can last up to 35/40 years. Producers let the plant grow only up to an average of 1.7 to 1.9 metres in height, in order for the plant to be filled with leaves and to make the cutting easier. The task of cutting the leaves, as well as the distillation process, requires a lot of manpower; as there is no mechanisation. The harvest normally takes place twice a year, although harvesting can be carried out all year long. Around 70-80% of the total annual harvest is carried out between October and February, with 20-30% carried out between April and June.

The distillation is still carried out onsite, at farm level. Wooden home stills, which normally have a capacity for 400 kg of leaves, are used. One still is used by several farmers located nearby. The wood used for making the stills is generally from the native tree, the yvyraró. The leaves yield around 0.30 to 0.35% of oil, and the main components of petitgrain oil are linalyl acetate and linalool.

SOCIAL AND ECONOMIC CHARACTERISTICS

Production is totally dependent upon smallholders. About 15,000 families depend to some extent on the production of petitgrain oil. The average size of a plantation is around 1 to 2 hectares. Petitgrain oil is a very important oil for farmers producing it as it is considered a saving account for farmers; when there is no income from any other alternative product they distill petitgrain oil which means cash for them all year long (Amigo, 2011; Fretes and Martínez, 2011). It is improved with time if properly stored.

CONCLUSIONS

The production of petitgrain oil Paraguay has been carried out for more than 100 years and is an important source of cash income for approximately 50,000 to 60,000 people (15,000 families) involved in the plantation, production, intermediation and trading of the oil. It has a turnover of about US\$ 8.0 million in value. About 98% of the oil is exported. The natural oil has no synthetic substitute due to its balanced composition of terpenes, esters and sesquiterpenes; a composition which is fundamental in its use within the fragrance industry.

REFERENCES:

- Amigo, R., (2011). *Essential Oils of Paraguay*. In: IFEAT International Conference 2011. Barcelona, Spain 6 – 11 November 2011. London: IFEAT.
- Fretes, F. and Martínez, M., (2011). *Aceites Esenciales. Análisis de la cadena de Valor*. Paraguay: USAID/Paraguay. **ISO 3064:2000**. Oil of petitgrain, Paraguayan type (*Citrus aurantium* L. ssp. *aurantium*, syn. *Citrus aurantium* L. ssp. *amara* var. *pumilia*).
- ISO 4720:2009**. Essential oils. Nomenclatura.
- Serie Perfiles de Productos para la Exportación**. *Aceites Esenciales. No 4, Edición (2010)*. REDIEX (Red de Inversiones y Exportaciones) – Ministerio de Industria y Comercio



Eco friendly transportation of branches with leaves



Cutting leaves and tender stems from branches



Loading leaves to wooden distillation unit

