

Nepalese Sugandha Kokila Oil

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Introduction:

The evergreen, *Cinnamomum glaucescens* (syn. *Cinnamomum cecidodaphne*), part of the Lauraceae family, is native to Nepal and grows wild in the districts of Dang, Rolpa and Salyan in the Rapti Zone (Rema, Krishnamoorthy, Sasikumar, Saji & Mathew, 2002). This species is a diploid and can grow to an altitude of 1300 meters (Ravindran, Nirmal-Babu & Shylaja, 2003). *Cinnamomum glaucescens* is recognized as an aromatic plant, meaning it has an elevated level of essential oil (Gurung, 2013). Using steam distillation, the dried berries of *Cinnamomum glaucescens* produce the essential oil commonly known as sugandha kokila oil (Ravindran *et al.*), which is yellow in colour and has a camphoraceous, spicy aroma (HPPCL, 2011). This product can be used as a fragrance in soaps, detergents, cosmetics, perfumes and industrial fragrances (Gurung, 2013). Sugandha kokila oil is also used in indigenous medicine as a demulcent and stimulant (Rema *et al.*). The Nepal Trade Integration Strategy 2010, identified Medicinal and Aromatic Plants (MAPs) as one of Nepal's top twenty goods and services with export potential (Sharma & Shresetha, 2011).

Wild Harvesting:

Citizens of Nepal have been collecting wild herbs and berries from the natural environment for centuries, where both women and men traditionally carry out the harvesting practice (Rawal, 1995). Today, the harvesting of MAPs is regulated by The Department of Forests, under the Ministry of Forests and Soil Conservation (Rawal, 1995). While wild aromatic and medicinal plants are the property of the government, any citizen is free to harvest them after applying to the

department of forests and paying government royalty fees (Rawal, 1995). However, non-timber forested species, such as *Cinnamomum glaucescens*, are over harvested, and if the current rate of collection continues, they may disappear from Nepalese forests (Maraseni, 2008).

Cultivation:

Alternatively to wild harvesting, *Cinnamomum glaucescens* has been successfully cultivated (UNDP/GEF, 2012), and cultivation further promotes species conservation (Maraseni, 2008). A ranking scale was established by ABTRACO (2006), assessing mode of domestication, cultivation and social beliefs from farmer or forest users perspective, to rank the suitability of MAPs for farming. With the highest ranking being five, and lowest zero, sugandha kokila ranked four out of five (ABTRACO, 2006). This demonstrate that *Cinnamomum glaucescens* is not only physiologically appropriate for cultivation but also has a high chance to be adopted by farmers, when compared with other MAPs. Furthermore, the GEF Small Grants Programme ran a successful project mobilizing two indigenous Nepalese communities, promoting the knowledge and tools to cultivate sugandha kokila (UNDP/GEF, 2012). The project amended the two involved communities' local forestry operation plan to include the conservation of *Cinnamomum glaucescens* (UNDP/GEF, 2012). The two communities involved planted *Cinnamomum glaucescens* 13ha of community forests, in addition to 6ha planted on private land (UNDP/GEF, 2012). Increasing the market demand of sugandha kokila oil will not only benefit the farmers and producers in Nepal but also encourage the conservation of *Cinnamomum glaucescens*. As the market grows, the plant will

increase in value, encouraging more cultivation of the plant and therefore increase conservation efforts. Also, three women-run forest nurseries established, responsible for growing 30,000 seedlings of sugandha kokila, sapindus, cinnamon, zanthoxylum, lemon and asparagus (UNDP/GEF, 2012). Creating women run nurseries empowered women to learn new skills while playing an important role in the cultivation of sugandha kokila and other products. Additionally, 86 households were supported in developing suitable infrastructure for the processing of sugandha kokila (UNDP/GEF, 2012). This project is an example of how the cultivation of sugandha kokila using a community approach can empower women and conserve this endemic plant.

Production:

The majority of MAPs are exported to India to be processed (Rawal, 1995). However, as *Cinnamomum glaucescens* is considered an at-risk species due to over-harvesting for monetary gains, this species can only be exported after processing occurs within Nepal (Rawal, 1995). Therefore, sugandha kokila is processed within the country, using distillation units operated by local people. MAPs have been processed in Nepal since 1981 with the government establishment of Herbs Production and Processing Co. Ltd. (Rawal, 1995), which today supports 600 families that are involved in the cultivation and processing of MAPs (HPPCL). Currently, there are an estimated 112 distillation units operating across Nepal (Gurung, 2013), the majority of which are located in the Terai regions. Distilling the product in Nepal will result in a unique product and provide steady revenue for the rural, low-income population (Rawal, 1995).

Distillation Process:

Sugandha kokila oil is a product of steam distillation from the dried berries of *Cinnamomum glaucescens*. Steam distillation reduces wasted material and lowers production costs (Sharma & Shrestha, 2011). This process enables the sugandha kokila oil to be distilled at a temperature significantly lower than its boiling point (FAO, 1992). The steam breaks through the plant material and releases the essential oils, along with the steam, after which they rise upward into a connecting pipe leading them to the condenser (FAO, 1992). In the condenser the steam and essential oils are cooled and liquefied. Due to differences in density, the essential oil will float on the surface of the water and be siphoned off (FAO, 1992). The essential oil is then filtered to remove any impurities (Gurung, 2010). Finally, the quality of the oil needs to be verified and is stored in container made of glass, stainless steel, aluminum, epoxy coated drums or food grade high-density polyethylene containers (Gurung, 2010).

Limitations and Recommendations:

For the cultivation and production of sugandha kokila to be adapted on a large scale, several barriers need to be overcome. Firstly, farmers are hesitant to cultivate MAPs compared to traditional crops (i.e: rice and wheat) because they have limited market information and access to quality seeds (Sharma & Shrestha, 2011). Additionally, farmers must wait longer to profit from MAPs than traditional crops due to longer gestation periods. These limitations need to be addressed if Nepal is to proceed with a large-scale production of sugandha kokila oil. Therefore, there needs to be a partnership between government and the private industry to

supply farmers with MAPs market information (Sharma & Shresetha, 2011). Additionally, there should be accessible information and training programs along with the availability of quality *Cinnamomum glaucescens* seeds (Sharma & Shresetha, 2011). To address long gestation periods and fluctuating market prices, implementation of a community forest is a viable option and should be evaluated on a community basis.

Export Potential:

Consumer Demand In Canada:

Internationally, there is a preference towards plant-based products versus their synthetic counterparts, and global trade of MAPs and essential oils is growing annually as a result (Sharma & Shresetha, 2011). It is estimated that by 2050, the global trade of MAPs and their products will reach 5 trillion U.S. dollars (Gurung, 2013). In Canada, the flavour fragrance industries are growing due to an increased demand for natural fragrances (ACC, 2013).

Marketing and Organic Certification:

Newcomers to the essential oil market in Canada must devote time and resources to marketing their products (AAC, 2013). Many companies are loyal to the consistent quality and supply of their existing supplier (AAC, 2013). Therefore, sugandha kokila oil needs to be promoted as a unique, natural and certified-organic product while ensuring its quality (Sharma & Shresetha, 2011). However, the cost of organic certification is very high as usually Nepali traders rely on certifiers from India (SAWTEE). For sugandha kokila oil to be exported successfully, the benefits of certification will likely outweigh the costs. There has been an increased global

demand for natural and organic herbal products, especially in developed nations (Sharma & Shresetha, 2011). In today's essential oil market, to be considered a high-quality product, MAPs and essential oils must be certified organic (Sharma & Shresetha, 2011). Internationally, products with organic certification have good market access and high value (EIF, 2015). Although not certified, 95 % of the commercial herbs from Nepal are natural, organic and wild (EIF, 2015). With the potential of organic and natural certification, this product will be more desirable to Canadian consumers and have an increased market value.

Product Diversification:

Similar to most essential oils, sugandha kokila oil, is a diverse product due to the array of uses for manufactures. Companies that sell essential oils, such as Essence Nepal and Lotus Garden Botanicals, describe sugandha kokila oil as “A gift to perfumers from the Himalayan Kingdom of Nepal” (Essence Nepal, n.d. ; LGBO, b.d.). Sugandha kokila oil's uniquely spicy scent is ideal for beauty products and toiletries, including soaps, detergents, cosmetics, massage oils, lotions, hair treatments and perfumes (LGBO, n.d.). Sugandha kokila oil would be a beneficial addition to a variety of products produced by a number of Canadian retailers; a list of examples is available below. Examples of existing beauty products that use sugandha kokila oil include Laurel Lead and Berry All-Natural Soap, produced by Herbaria Soap, and Shine and Protect Hair Mist produced by Omved. The variety of potential products allows access to a number of Canadian markets.

Conclusion:

The export Sugandha kokila oil is a viable and promising export for the Nepalese people. Promoting the cultivation of *Cinnamomum glaucescens*, using a community approach can have positive results, empowering women and promoting conservation (UNDP/GEF, 2012). Processing the product using steam distillation in Nepal will create a unique and quality product while providing jobs for rural, low-income population (Rawal, 1995). To address current limitations, support from both the government and private industry to ensure farmers are updated with market information, training programs and quality *Cinnamomum glaucescens* seeds is essential (Sharma & Shresetha, 2011). Sugandha kokila oil is a diverse product with many uses as a natural fragrance. With proper marketing, organic certification and increased Canadian demand for natural fragrances (AAC, 2013), the export of sugandha kokila oil is a viable and promising trade opportunity for the people of Nepal.

Example Canadian Importers:

Lush

http://www.lush.ca/on/demandware.store/Sites-LushCA-Site/en_CA/Blog-Posts?cid=blog_support-for-nepal

The Body Shop

<http://www.thebodyshop.ca/en/index.aspx>

Aveda

<http://www.aveda.com/discover/index.tpl#section=mission>

Get Real, 100% natural skin and hair care products

http://www.cranberrylanaturalbeauty.com/?utm_source=cranberrylane&utm_medium=main-page-red-buttons&utm_term=main-site&utm_content=med-links&utm_campaign=main-site-links

Sephora

<http://www.sephora.com>

Manitoulin Soap Factory

<http://manitoulinsoapfactory.com>

The Great Canadian Soap Company

<http://www.greatcanadiansoap.com>

The Wild Prairie Soap Company

<http://www.wildprairiesoap.ca>

The Rocky Mountain Soap Company

<http://www.rockymountainsoap.com>

Existing Products:

Laurel Leaf and Berry All Natural Soap

<http://www.herbariasoap.com/laurel-leaf-and-berry-soap.html>

Shine and Protect Hair Mist

<http://www.omvedstore.in/products/1698-shine-and-protect-hair-mist.aspx>

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