

**Guava Juice**  
**An Export Opportunity for Nepalese Farmers**

Erika Baker  
November 24, 2015  
AGR2150

## **Introduction to Guava in Nepal**

*Psidium guajava*, commonly known by its English name Guava, represents a great export opportunity for Nepalese farmers. Guava originated from the American tropics, but today is grown all over the world in tropical and subtropical climates (Faye, 2003, p. [Page 68-69]). Guava is one of the most adaptable tropical and subtropical fruit crops, as it can be grown up to an elevation of 2100 metres above sea level. Guava can grow in both humid and dry climates. In Nepal, Guava is grown in the Terai, inner Terai, and hilly region. It is grown from an altitude of 115 meters above sea level in Bara to 1600 meters above sea level in Terhathum. For the Nepalese, Guava is the second most important fruit crop following orange. Guava is a favourite among poor farmers as it is a relatively low maintenance crop that reaps great benefits, including generating income, providing nutrition for families, and yielding large amounts. Guava is a financially rewarding crop, especially in terms of the minimal amount of care required. Guava can reap 90 to 350 kg of fruits per plant per year (Shrestha, 2005, p. [Page 127]). For these reasons, it would be beneficial for Nepal to export Guava.

## **Current Growth**

Nepalese farmers have a tradition of including Guava trees in their home gardens. In the hill region, Guava is grown at a frequency of 42.78 percent in home gardens, and at a frequency of 26.67 percent in home gardens in the hill region (Gautam, Sthapit, & Shrestha, 2004, p. [Page 79]).

Guava is also commonly included in agroforestry. Guava trees are an addition to several farmers agroforestry. Alongside Lapsi, Soap nut, Tejpatta, Mango and Litchi,

Guava is a common species used by farmers in the middle hills region of Nepal in agroforestry in their farmlands (Pandit, Shrestha, & Bhattarai, 2014, p. [Page 47]).

While only 37 percent of farmers were growing Guava as their main crop, a majority of farmers included Guava as a secondary, intercrop (Shrestha, 2005, p. [Page 129]).

In Nepal, 30 percent of total guava orchards grow only local cultivars. However, 40 percent of guava orchards grow a mix of both local and improved cultivars. The improved cultivars include those from the neighbouring country of India, known as Lucknow 49 and Allahabad Safeda. The improved cultivars are being promoted in Nepal by the Fruit Development Directorate and the Department of Agriculture has been involved in the distribution of the improved Indian cultivars (Shrestha, 2005, p. [Page 130]).

### **Seasonality**

Guava trees bear fruit twice a year, in the rainy and winter seasons. However, the winter season bears higher quality fruit, which is in higher demand on the market. The Guava produced in the rainy season is watery, lacks flavour, and is often insect infested. Thus, since the fruit produced in the winter season is of higher quality, practices need to be taken to increase yields during this time. Practices taken in neighbouring India to increase yields should be used/further used by Nepalese farmers. These practices include bending and pruning. When practicing bending, the farmers bend the branches at the base, which opens up the central canopy. When practicing pruning, it is recommended to prune in the summer prior to flower initiation, as well as after the fruit has been harvested. Pruning prior to harvesting initiates growth of new shoots. It has been found

that yields in the winter season are maximized when pruning occurs at a 20 cm level in early May (Adhikari & Kandel, 2015, p. [Page 300]).

### **Agronomic Issues**

The main problem faced in the production of Guava is known as the Guava wilt. This is the largest constraint faced by farmers. Plants that are affected by wilting have a yellow colouration with leaf curling at the terminal branches. When faced with wilting branches become bare and do not produce new leaves or flowers. When branches are affected, the fruit does not develop and becomes black, hard, and stony. Other symptoms include the rotting of roots, and bark splitting. The duration of time it takes for the entire plant to become wilted varies, with some becoming completely wilted and dying after 15 days, while others may take around 250 days. There are two symptoms, known as slow wilt and sudden wilt. With slow wilt, it can take the plant a month to a year to wilt upon the initial appearance of symptoms; this differs from sudden wilt where it can wilt in 15 days (Misra, 2006, p. [Page 270-271]). To help with eliminating and/or lessening the presence of the wilt pathogen, farmers should focus on orchard sanitation, alongside intercultural operations. Although Guava wilt is seen as the main constraint, only approximately 4 percent of farmers used a chemical protection measure, for example, a fungicidal spray (Shrestha, 2005, p. [Page 132]).

Further, the main pests affecting Guava are fruit flies. *Bactrocera correcta*, commonly known as the Guava fruit fly largely affects Guava grown in India, Pakistan, Sri Lanka, Thailand, and Nepal. These fruit flies are one of the major causes of economic losses for Guava (Yahia, 2011, p. [Page 230]).

**Benefits of Growing Guava**

Growing fruit trees is very beneficial for the Nepalese and their land. Growing fruit not only provides a steady source of long-term income, but also helps to combat soil erosion (“Fruit Plantations Provide Sweet,” 2015). Planting fruit trees in sloping lands aids in the conservation of soil and water (Gautam, Sthapit, & Shrestha, 2004, p. [Page 21]). Growing Guava will be beneficial for farmers because as stated above, Guava is a very adaptable plant and requires minimal care. This has the potential to benefit women farmers, since minimal care is required, it will allow them to reap more income for less work, and allow them to allocate their time to other tasks. In addition, as fruit trees can be intercropped, it offers additional income sources for farmers.

**Export**

Nepal should export Guava in the form of juice. As Guava is very limited in terms of trade of fresh Guava, it would be most beneficial for Nepal to export it as a juice. Guava juice is increasing in popularity in North American markets (Yahia, 2011, p. [Page 215]).

Canadian consumers provide a great market for Guava juice from Nepal, as Guava juice provides a large selection of health benefits. With a growing health consciousness, an increased awareness of the health benefits of Guava will increase demand. Guava juice is high in vitamins, minerals, fiber, and dietary antioxidants. As consumers increase demand for antioxidant rich products, Guava poses to be one of the highest in terms of antioxidant fiber intake (Yahia, 2011, p. [Page 239]). The market for Guava juice will be largest if the juice is pure, with no additives.

Post-harvest, the fruit should be stored at 15°C. This allows for gradual ripening of the fruit (Faye, 2003, p. [Page 74]). Several means of processing can be undertaken to process the Guava into juice. Nepal will need to develop a processing plant. This will likely be easier once companies see the growth of Guava in Nepal. If companies know that Guava is largely available in Nepal, they may want to begin to process juice with Nepalese Guava. There are several companies currently selling Guava juice that could begin using Nepalese Guava. These include, Tropicana, Minute Maid, and AC Fresh. Stores in Canada that may sell the Guava juice include Loblaws, Shoppers Drug Mart, and Walmart. Contact information for potential companies and stores are listed on the following page. In order to import the Guava juice into Canada, it must be ensured that the product meets the *Processed Products Regulations* under the *Canada Agricultural Products Act* (“Section E – Summary,” 2015).

### **Contact Information**

#### AC Fresh

- Email: kosman\_s@italthaigroup.com

#### Loblaws

- Phone: 1-800-564-6253  
519-982-7555

#### Minute Maid

- Contacted through the Coca-Cola Company
  - Phone: 1-800-438-2653

#### Shoppers Drug Mart

- Phone: 1-800-746-7737

#### Tropicana

- Phone: 1-800-237-7799

#### Walmart

- Phone: 1-800-328-0402

## References

- Adhikari, S., & Kandel, T. P. (2015). Effect of time and level of pruning on vegetative growth, flowering, yield, and quality of guava. *International Journal of Fruit Science*, 15(3).
- Faye, D. (2003). *Organic fruit and vegetables from the tropics: Market, certification and production information for producers and international trading companies*. Retrieved from [http://unctad.org/en/Docs/ditccom20032\\_en.pdf](http://unctad.org/en/Docs/ditccom20032_en.pdf)
- Fruit plantations provide sweet income for rural farmers. (2015, November 16). Retrieved from United Nations Development Programme website: <http://www.np.undp.org/content/nepal/en/home/presscenter/pressreleases/2015/11/16/fruit-plantations-provide-sweet-income-for-rural-farmers.html>
- Gautam, R., Sthapit, B., & Shrestha, P. (2004). Home gardens in Nepal. *Home Gardens in Nepal*. Retrieved from [http://www.unscn.org/layout/modules/resources/files/Home\\_Gardens\\_in\\_Nepal.pdf](http://www.unscn.org/layout/modules/resources/files/Home_Gardens_in_Nepal.pdf)
- Misra, A. K. (2006). Wilt of guava - a disease of national importance. *Indian Phytopath*, 59(3).
- Pandit, B. H., Shrestha, K. K., & Bhattarai, S. S. (2014). Sustainable local livelihoods through enhancing agroforestry systems in Nepal. *Journal of Forest and Livelihood*, 12(1).
- Section E - Summary of import requirements for food commodities. (2015, March 18). Retrieved from Government of Canada website:



<http://www.inspection.gc.ca/food/imports/commercial-importers/importing-food-products/eng/1376515896184/1376515983781?chap=6#s19c6>

Shrestha, A. K. (2005). Critical appraisal of management practices in Nepalese guava orchards. *Journal of the Institute of Agriculture and Animal Science*, 26.

Retrieved from Nepal Journals Online database.

Yahia, E. M. (Ed.). (2011). *Postharvest biology and technology of tropical and subtropical fruits* (Vol. 3). Woodhead.