

Developping the ‘Ultimate Trail Tour’ for the Barbados National Botanical Gardens

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As part of the Barbados Interdisciplinary Tropical Studies semester, we were tasked with creating a Virtual Tour for the National Botanical Gardens of Barbados. The Gardens opened in 2019 with the goal of preserving local flora and providing space for relaxation, physical activity and exploration. The fruits produced by the trees planted here have also been suggested as a way to reduce the costs of importation and address the obesity epidemic stemming from a reliance on processed foods in Barbados (Go Barbados n.d.; Dorodnykh 2017).

Studies show that virtual tours are among the most effective ways to educate a wide audience, as they’re freely accessible online regardless of where one is in the world (Martínez-Graña et al 2013; El-Said and Aziz 2021). We chose to focus our virtual tour on highlighting the wide array of fruit trees that can be grown on the island and the different ways these can be eaten, as a means of promoting the production and consumption of fresh fruits. These include fruits like the mango, the jamun, the golden apple, the Baobab tree, and the Barbados cherry. We also found that some of the plants present in the Gardens, such as aloe vera, the Shak Shak tree, or bougainvillea, had medicinal properties and that different cultures have different uses for their various plant parts. This is a dimension we chose to include in our virtual tour, because we hope to demonstrate how valuable plants can be to humans and how important it is to protect them.

To further demonstrate the importance of conservation, we present the garden as the sum of all its parts: each plant has an important role to play in contributing to the ecosystem’s health and productivity. During our research, we discovered that these plants hold not only nutritional or cultural significance, but ecological importance as well. For example, the mango tree sequesters lots of carbon—which is an effective way of mitigating the effects of climate change—while the deciduous leaves of the golden apple tree help improve soil health (Tharanathan, Yashoda and Prabha 2006; Mohammed et al 2011). Other plants, which we refer to as “companion plants” featured in our tour may not necessarily be edible, but they perform other roles—such as attracting pollinators—that are crucial to the growth of other plants in the Gardens.

Given that the Gardens opened recently, they are still being developed and improved upon. As part of our project, we created labels for each of the plants highlighted in our virtual tour which feature a QR code linked to more information regarding the plants’ growth habits and uses (University of Denver n.d.). This step was to ensure that the findings of our research reached as wide an audience as possible. Thanks to the labels, anyone who visits the Garden—regardless of whether they view the virtual tour—will have the opportunity to learn more about the plants that surround them.

The final component of our project is to provide recommendations for other plants which may feasibly be grown in the Gardens and either produce food or help support the growth of those which do. Following literature on companion planting, we ensured that the plants recommended are diverse in their height, growing habits, and, most importantly, are compatible with the soil and climactic conditions of Barbados (Ponder et al 2019). For this reason, we placed an emphasis on plants that are naturally occurring on the island. These include: agave, plumeria, milkweed, the coconut palm, the breadfruit tree, wild guava, ginger, heliconia, and nasturtiums.

We consider our research as a prototype for potential developments at the National Botanical Gardens. Further research needs to be done on where to source these plants, how to propagate them, as well how to distribute the fruit that is produced on site.

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References

Barbados National Botanical Gardens. Go Barbados. (n.d.). <https://barbados.org/barbados-botanical-gardens.html>

Dorodnykh, E. (2017). Import dependency, and food and nutritional security in the Caribbean. *Economic and Social Impacts of Food Self-Reliance in the Caribbean*, 15–33. https://doi.org/10.1007/978-3-319-50188-8_3

El-Said, O., & Aziz, H. (2021). Virtual tours a means to an end: An analysis of virtual tours' role in tourism recovery post covid-19. *Journal of Travel Research*, 61(3), 528–548. <https://doi.org/10.1177/0047287521997567>

Martínez-Graña, A. M., Goy, J. L., & Cimarra, C. A. (2013). A virtual tour of geological heritage: Valourising Geodiversity using Google Earth and QR Code. *Computers & Geosciences*, 61, 83–93. <https://doi.org/10.1016/j.cageo.2013.07.020>

Mohammed, M., Hajar Ahmad, S., Abu Bakar, R., & Lee Abdullah, T. (2011). Golden Apple (*spondias dulcis* forst. syn. *Spondias Cytherea* Sonn.). *Postharvest Biology and Technology of Tropical and Subtropical Fruits*. <https://doi.org/10.1533/9780857092885.159>

Ponder, M. V., Frankie, G. W., Elkins, R., Frey, K., Coville, R., Schindler, M., Guerrero, S. L., Pawelek, J. C., & Shaffer, C. (2013). *How to Attract and Maintain Pollinators in Your Garden*. <https://doi.org/10.3733/ucanr.8498>

Tharanathan, R. N., Yashoda, H. M., & Prabha, T. N. (2006). Mango(*Mangifera indica* l.), “The king of fruits”—an overview. *Food Reviews International*, 22(2), 95–123. <https://doi.org/10.1080/87559120600574493>

University of Denver. (n.d.). *Reading plant labels*. Chester M. Arboretum. <https://www.du.edu/arboretum/visit/reading-plant-labels>

