

# Survey of Pineapples and Their Place on Dominica

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## **Abstract**

Pineapples have been a part of the Dominican agricultural system since their introduction to the island in the mid-1900's. With the fall of the banana industry in the Caribbean after the institution World Trade Organization reforms in the late 1990's, Dominica's economy has suffered greatly. With a largely agriculturally based economy, a combined increase in pineapple production and other market-stable fruit crops could help stabilize the future of the country.

## **Introduction**

Dominica's economy has been based highly on agriculture since the time of the French invasion in the 17th century. Over the years Dominican farmers have experienced periods of boom or bust for the most part, growing many different cash crops including coffee, sugar, limes, and bananas. World markets have always dictated the varieties of crops grown on the island, and farmers across the country have always taken hold of a single crop and become less and less diversified until they almost completely relied on that crop as their economic lifeline. Throughout history the ever-changing world market situation has controlled demand for these crops, and each time their demand declined, the country has been sent into an economic tailspin. This was indeed the case with the banana industry on the island toward the end of the 1990's.

Since their introduction onto the island, pineapples have been farmed as a non-traditional crop. Their minimal labor and soil quality requirements make them an excellent contender in the agricultural future of the island. Many factors affect the pineapple's worth as a suitable large-scale crop on the island, but none as much as the world market.

There are many varieties of pineapple in world today, including the smooth cayeene, #4 and #11 pineapples, and the red spanish pineapple, which is the variety most Americans purchase when buying the fruit in cans. On the island of Dominica, there are four varieties of pineapple. Of these, the smooth cayeene, #4, and #11 are by far the varieties most highly produced. The smooth cayeene pineapple was one of the original varieties of pineapple found by Columbus and other early explorers in Latin America. The smooth cayeene pineapple was introduced in Hawaii in 1886, and has been the major variety grown there ever since (Compton, 1983). In the 1970's, this pineapple was introduced by the Chinese to Dominica and has been harvested on a small scale by farmers. While in 1995 less than one ton of pineapples were recorded as having been produced (Evans, 1997), the descent of the banana market in the Caribbean in the 1990's has caused farmers to branch out in their agricultural endeavors. To fill the void left by the banana industry, the production of pineapples, among numerous other fruit and vegetable crops, have been expanded.

## **Materials and Methods**

Interviewing those currently involved in the pineapple production system on the island was the main method used for data collection. Available text on the subject was minimal due to the recent history of its agricultural growth in Dominica. Interviews were conducted with the following people, both well versed in the Dominican pineapple industry:

Michael J. Lu, Chief consultant  
The ROC Technical Mission  
Embassy of the Republic of China

Almario Casimir, Technical Officer  
Dominican Ministry of Agriculture and the Environment  
Division of Agriculture

## **Results**

Pineapples are a fairly easy crop to farm in a high-rainfall area, requiring minimally acidic soil, and 80 or so inches of rain per year. The introduction of pineapple plants to an area requires the planting of a seedling plant. Usually these seedlings are planted side by side on bedded rows, with approximately 60cm of space between two plants. Between the beds in a field, a narrow work area is left unplanted and level with the ground for the farmer to tend to his crop. An initial layer of fertilizer, optimally decomposing manure (Williams, 1998), is laid down across the field. Sheets of thin plastic are then placed over the beds to minimize weed growth and topsoil loss. Small holes are punched through the plastic and the seedlings are planted through these holes. Using this planting technique, an open acre of land should be able to support up to 16,000 pineapple plants. Pineapples do not grow well in rocky areas, and the sand content in the soil dictates the sugar content in the fruit.

Flowering stimulants include asceteline and kabay, a byproduct of steel production. Some farmers apply ice cold water to their plants at night, which shocks the plant's system, and has also been known to make it flower. Once a pineapple is planted, it will take fourteen to twenty-two months for the fruit to ripen enough for harvest. The plants grow on average to two to four feet high, sprouting pointed leaves in a stacked fashion up to the top. As the fruit begins to mature, the plant produces a "sucker", which is a secondary pineapple plant that sprouts from its base. This sucker can be left in the ground to replace the fruiting plant which will die after its fruit is harvested. Small sprouts called slips also grow horizontally from beneath the fruit at the top of the plant, and these too can be used as seedlings for planting. Though pineapples are naturally a seasonal fruit, there are ways to induce flowering.

## **Discussion**

In today's world fruit market huge conglomerate pineapple producers such as Dole and Chiquita possess very large portions of the market share, holding monopolies in some cases. Nearly 90% of produced pineapples are canned, with the remaining 10%

making up the fresh fruit and organically grown pineapple markets (Collier, 1985). Dominica's farming culture does not lend itself to competing with these huge companies due to the prevailing system of small farms and the individualized farming mindset. Although this is the case, the pineapple industry, among other diversified crops, may offer the economic stabilization that Dominica's economy needs.

The pineapple is a popular fruit with a strong stable world market. Though there are numerous large-scale companies operating in the US and Latin America producing pineapples for canning, the fresh fruit and especially the organically grown pineapple markets have room for growth from competitors. The demand for organic fruits and vegetables in the United States and the United Kingdom has grown considerably in the past decade and corporate farms are not easily able to accommodate such market changes. For Dominican farmers still reeling from the decline of world banana markets, this means an opportunity to convert their land to pineapple production and help bring their country out of its current economic recession. NIPPA, the Nature Island Pineapple Producer's Association is an alliance of farmers and business men working together to collectively market and expand pineapple production on Dominica. If a farmer wants to convert to pineapple production, he can sign with the association and get a fifty percent discount on the seedlings he must purchase to begin production. To become a part of the association a farmer must own at least 2,500 plants. The Embassy of The Republic of China is also a large contributor to agricultural growth of the pineapple on Dominica. The Taiwanese were the first to import pineapples into Dominica, and the embassy supplies important information on the intricacies of pineapple growth to perspective farmers. When a farmer decides to plant for the first time, the Chinese will donate the use of farm implements and seedling plants to aid farmers in the development of new plantations.

Of the three main types of pineapples found in Dominica, the most popular for fresh fruit production is the #11 pineapple. It contains an average of 19% sugar in a sandy soil, and has a sweeter taste than the other varieties. The #11 is the sweetest of the pineapple varieties on the island, but usually has a pear shape. This non-uniform shape does not lend itself well to canning, and therefore the smooth cayeene and #4 varieties, which have uniform oval shaping, are preferred when producing for canning. #4 and #11

pineapples both bear very prickly exteriors and are difficult for farmers to handle at harvest, while smooth cayeene pineapples are much smoother. Smooth cayeene pineapples are also larger on average than the other two varieties, and hold more water when ripe. All of these are considerations for farmers looking to break into specific pineapple production markets.

Springfield Station has become interested in developing a pineapple plantation on its land. Mona Dill, manager, has allotted approximately two acres of relatively flat land near the station for this project. The land has few rocks and fertile soil. It has very light tree cover which allows plenty of light to reach the ground and receives much more than the 80 inches of rain per year needed by pineapple plants. The soil acidity in the area is yet to be measured, but with pineapples' large acceptable soil acidity levels, the land will most surely support them. Inspection of the land by the Chinese Embassy has confirmed the capacity of the land for pineapple growth. The Chinese have recommended production of smooth cayeene pineapples on a quarter-acre plot for a year, expanding the planting area to a full two acres the following year. Considering the land and soil characteristics of the plantation, and the optimism of the Chinese Embassy's consultant, the future of pineapple production at Springfield Station looks positive.

## **Conclusion**

Though the pineapple's current agricultural base in Dominica is small and unconcentrated, the world market for the fruit is very stable. The growing organic fruit markets in the United States and the United Kingdom will further increase demand for the fruit. The pineapple canning industry, though mostly dominated by large corporations, also has room for growth from smaller producers. With increased pineapple production and agricultural diversity, Dominica's economy can grow and stabilize to better the future of the island and its people.

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