Pineapple Production

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OVERVIEW

Pineapple production is an area with significant potential ranging from fresh fruit and organic pineapple to value added products including dried pineapple slices, wedges for toppings, tit bits, juice concentrates and other by-products that have attractive local and external markets. Improvement in production and productivity levels is paramount to the expansion of the value chain. Though these opportunities exist the industry has never been developed to compete on the world market. Currently, about four cultivars are grown in the island; Sugar loaf, Red Spanish, Rippley and to a lesser extent Smooth Cayenne. The smooth Cayenne is currently being re-introduced to Jamaica; as it is the variety most suited for commercial production. It consist of minimal spines, great flavor, produces in higher quantities, has a higher shelf life, as well as possessing the ideal shape for mechanical processing.

PROFILE OF THE INDUSTRY

Production in Jamaica has been sold mainly on the local fresh fruit market. In 2013**,** total local production was 19,185,000 kg while import of processed pineapple (including juice concentrate) was 8,877,177kg valuing US$32,395,166. Pineapple can be produced all year round, but the bulk of harvest comes in between May and July each year. Approximately 77.9% of the annual pineapple production occurs over the six (6) month period from April to September. The MD2 which is suited for processing promises the answer to the issues with the traditional varieties.

APPROACH

The Ministry of Industry, Commerce, Agriculture and Fisheries is seeking to substitute at minimum 86% of imported pineapple juice concentrate in the near to medium term. This will require an additional 80 hectares to satisfy raw material supply to the concentrate production market. The Ministry is also seeking to increase the volume of fresh pineapple available for local consumption to facilitate year round supply to local consumers including the tourist industry.

OPPORTUNITIES

According to FAOSTAT 2016, in said year Jamaica produced 25,296 tonnes of Pineapples. This is a meagre 2.9% of the total quantity produced Mexico; who is currently one of the world's top producers. To achieve the government's objective of substituting 86% of imported pineapple juice concentrate consumed locally, and to achieve a year round supply of the fresh fruit, additional production is required. This presents a lucrative and significant investment opportunity. The pineapple industry also presents a viable opportunity for investors to engage in value added product development such as pineapple slices, chunks and tidbits to create niche markets and expand consumption.

PINEAPPLE VALUE ADDED PRODUCTS

Pineapples are mainly consumed as fresh fruits, however, commercial production is geared towards the processing of pineapple into the following forms of products;

1. Canned fruit slices and chunks
2. Jams
3. Dried candied pineapples

By- Products

4. Vinegar
5. Citric acid
6. Enzymes
7. Wines

HOW ARE PINEAPPLES GROWN?

According to information provided by Rada extension services, Pineapples can be grown all across the country. Optimal elevation is between 1000-1500 metres which is 3300-5000 feet above sea level. Adequate rainfall should be between 500 and 2500mm or 20 -100 inches per year. The crop is grown can be grown on wide range of soils in Jamaica, however sandy loams with acid levels of PH 4-6 is preferred for optimal growth.

OPTIMAL GROWTH OPTIONS

Fertilizer

A vast amount of small farmers generally do not use commercial fertilizers for the production of Pineapples, However, for the crop to produce and grow at optimum levels it is recommended that the soil nutrients are properly managed.

According to RADA Extension Services, it is recommended that the crop be fertilized at the following rates.

620kg/hectares (546 lbs/acre)	23-10-20
860 kg/hectares (757lbs/acre)	16-5-19 or 16-9-18

Please note this is approximately 28g or 10z of fertilizer per plant.

ORGANIC FARMING

In the organic production of Pineapples it is recommended that various types of manures and compost be employed, applying 2 and 5 tonnes/hectare which is 1-2.5 tonnes per acre.

PLANTING MATERIAL

There are several planting materials which can be employed in the production of Pineapples.

Type of Planting Material	Description
Suckers	This is the most desirable option. When employing this method, expect new plantlets to arise from buds at ground level.
Crowns	This is the top of the fruit and is known as the most uniformed planting material

Slips	When this methods is employed, new Plantlets are produced on the fruit stalk just below at the base of the fruit.
Stumps	This is the remainder of the plant after it has been harvested

It is recommended that the planting material be taken through the following process:

1. Strip excess dry and or dead leaves and rotten tissue to expose young root and rotten tissues.
2. Turn cut end or base upwards, allowing to harden and dry for a few days before planting
3. After drying for a few days, dip the cut end/base in a mixture of fungicide and insecticide in order to reduce infection
4. Allow to dry again before planting

RAPID MULTIPLICATION

Various rapid propagation can be used in the production of pineapple. The methods includes:

1. Tissue Culture
2. Micro-propagation using stem and shoot subdivisions
3. Treating the plant with chemicals may also result in new plant formation

LAND PREPARATION

Prior to the planting of Pineapples, the land should be cleared of all bushes. Suckers may be planted using the minimum tillage system. The farmer should fork the strip across the contour using what is called the A-Frame as a guide. It is recommended that mulch is placed between the rows and the plants to control weed and reduce the loss of soil.

Pineapple plants are placed 40-60 cmor 16-24 inches within double or triple rows, making it 50cm or 20 inches apart. Suckers should be 7 cm or 3 inches deep and planted in a V-shaped pattern.

HOW TO PROTECT THE CROP

There are many treats to pineapples; which includes the attacks of nematode, mealy bugs, and rats. It is therefore critical to control the production of weed during the early stages of crop production. This can be done by employing pre-emergence herbicide, mulch or manual removal.

HARVESTING

Under ideal conditions the pineapples should yield between 25-50 tonnes/hectres. Havesting is dependent on the size, age and type of pineapple in production. Based on this information harvesting may commence at 18 months subsequent to planting. Afterward, each plant is able to produce 1 fruit annually. A fruit which present as three-quarter (3/4) green from the top is considered as mature and should be reaped over a period of time. Growth hormones such as ethylene, smoke, acetylene can be used to enhance the production of pineapples out of season

SWOT ANALYSIS

Strengths **Smooth Cayenne** ✓ Great flavor ✓ Long shelf life ✓ High production volumes ✓ Great for creating by-products and value added commercial items	**Weaknesses** ✓ Not a cash crop, thus may require a little more time before harvesting
Opportunity ✓ Import substitution	**Treats** ✓ Highly susceptible to mealy bugs, rats and nematode attacks ✓

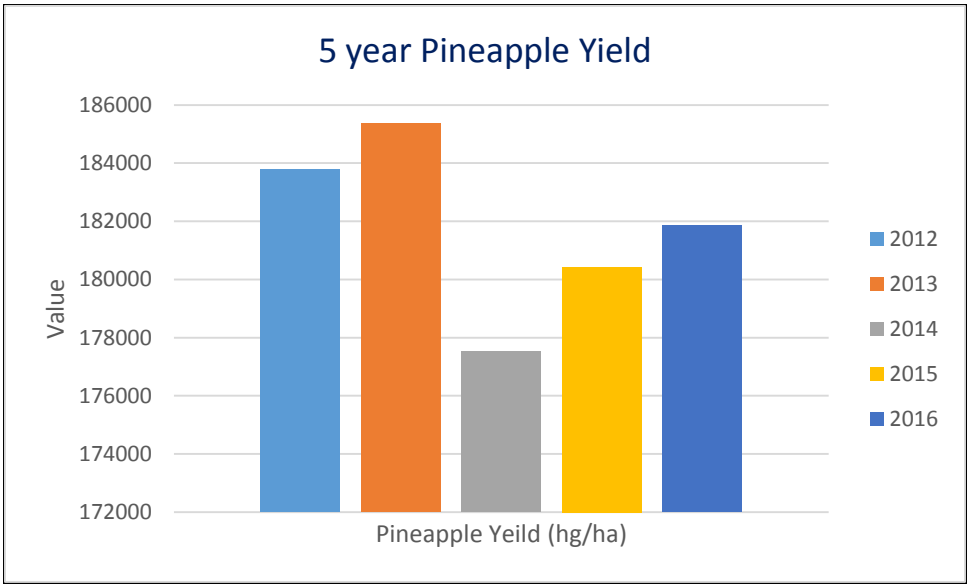
BENEFITS OF PINEAPPLE

Pineapple provides numerous health benefits to the consumer, few of which are listed below:

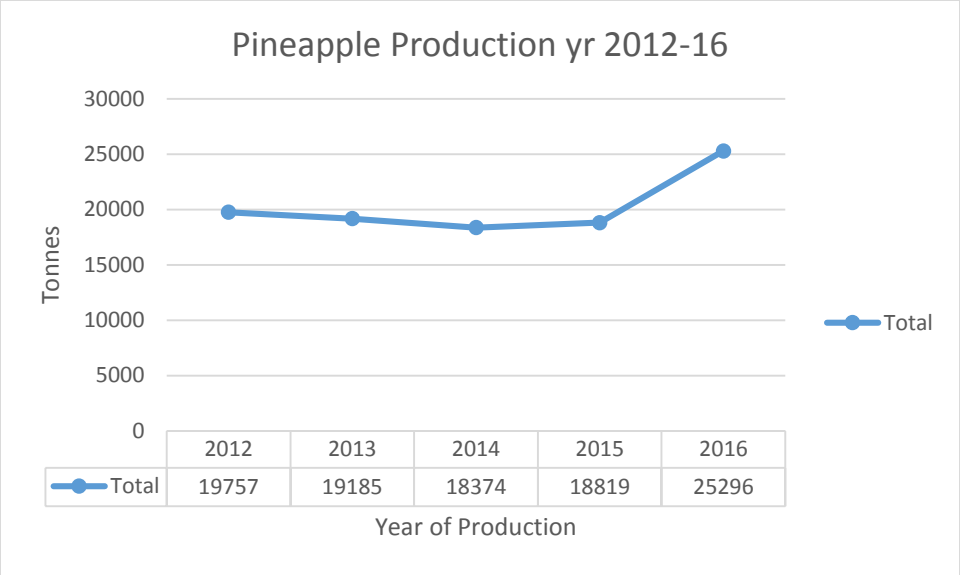
- ✓ Naturally high in fiber which improves digestion
- ✓ Contains a good array of vitamins and minerals; including calcium, manganese, vitamins A and C, as well as folic acid.
- ✓ Contains a key phytonutrients call bromelain which is recognized for its *anti*-inflammatory *and* anti-microbial effects.

ANALYSIS OF THE LOCAL MARKET

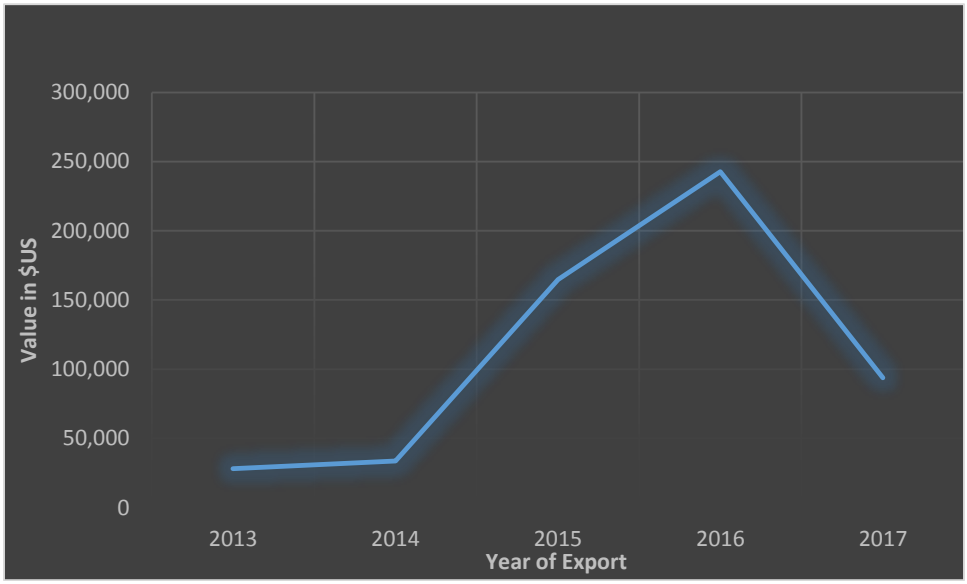
5 Year Pineapple Yield (Local)



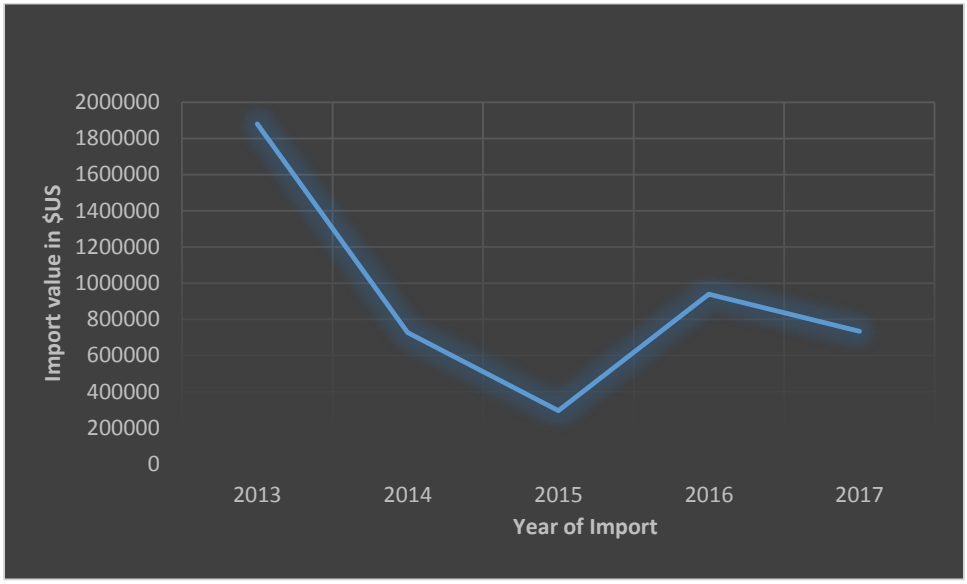
Data extracted from FAOSTAT February 20,2018



5 Year Local Export



5 year Local Import



FORMS IN WHICH PINEAPPLES ARE BEING IMPORTED VS EXPORTED

Pineapple is imported and exported in a variety of forms. The main ones are outlined in the table below.

Forms of Import	Forms of Export
Pineapples fresh or naturally dried	Pineapples fresh or naturally dried
Frozen Pineapple	Pineapples artificially dried
Pineapples provisionally preserved but unsuitable in that state for immediate consumption.	Other pineapple juice of a Brix value greater than or equal to 20 n.e.s.
Pineapple-based jams jellies and marmalades.	Other pineapple-based juices
Pineapples otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	

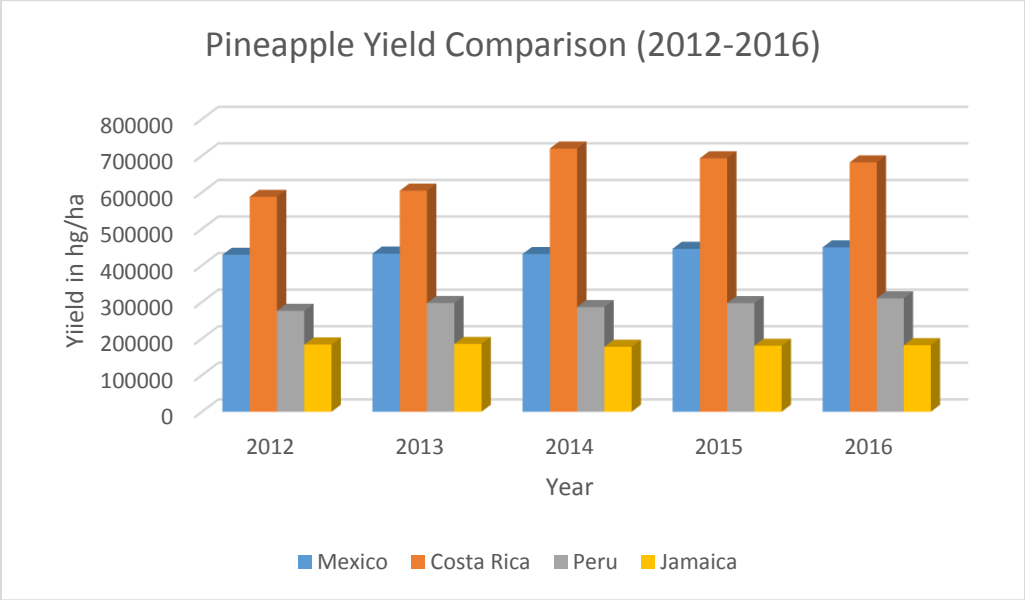
Pineapple juice of a Brix value not exceeding 20 concentrated not in retail packages	
Other pineapple juice	

WHERE DO WE GET OUR PINEAPPLES?

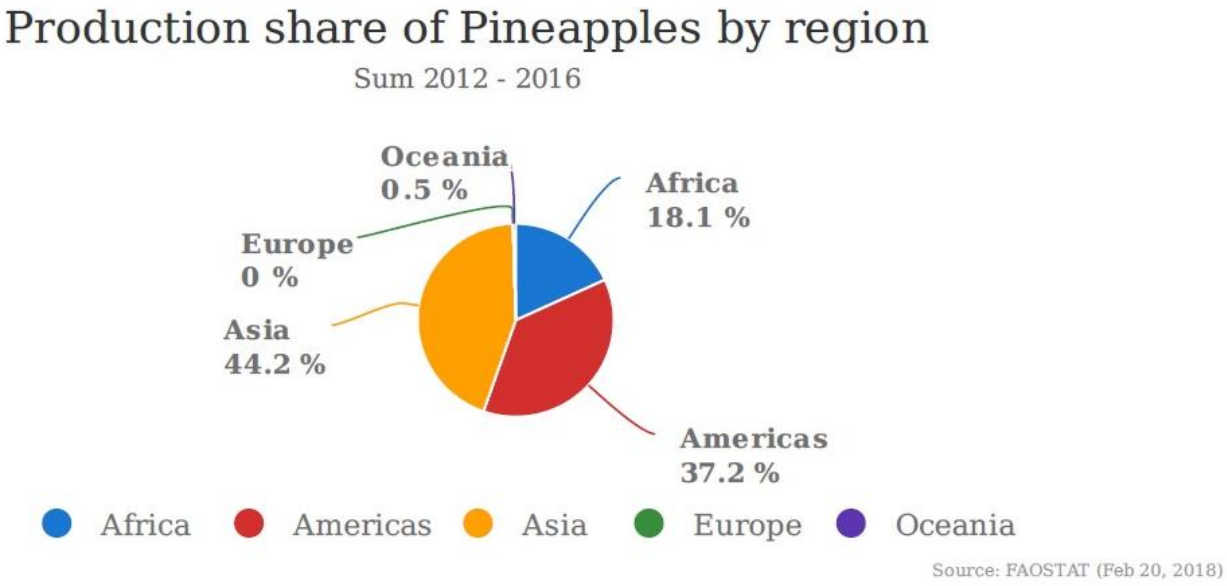
Jamaica currently import Pineapples to, and Export Pineapples from the following countries:

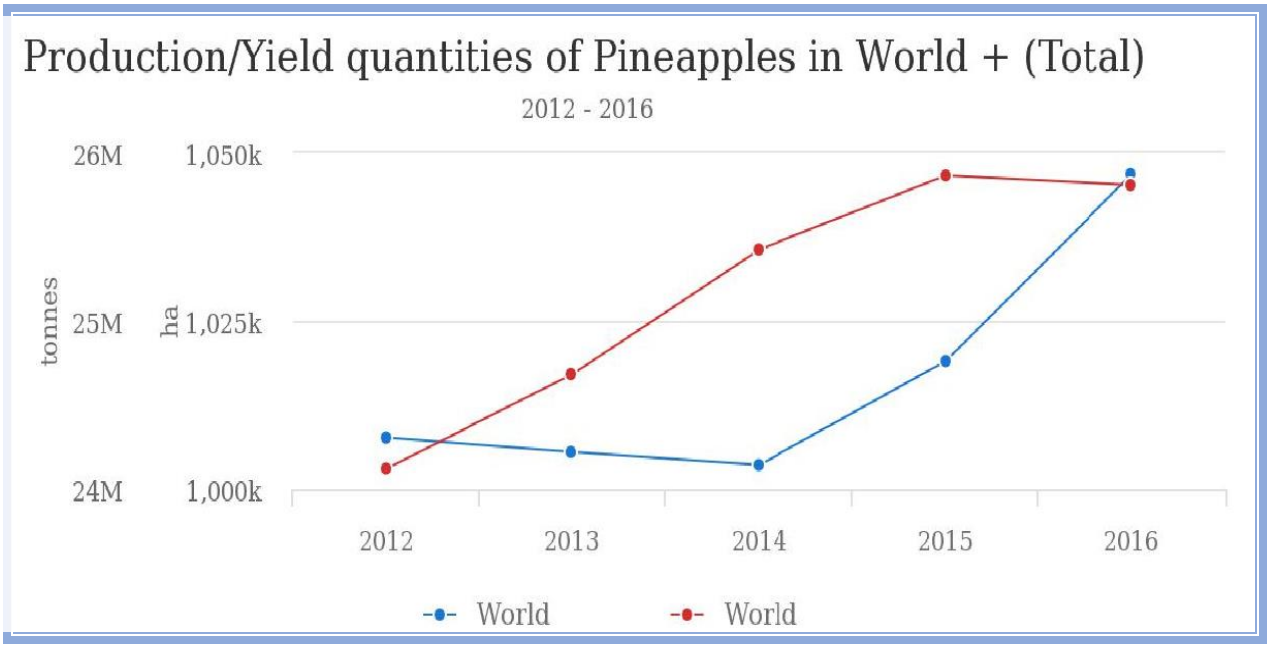
Export Partners	Import Partners
Canada	United States of America
United Kingdom	Guatemala
Saint Lucia	Canada
Anguilla	Costa Rica
Antigua and Barbuda	Philippines
Aruba	Spain
Barbados	Thailand
Bermuda	Belize
Cayman Islands	Turkey
Curacao	Dominican Republic
Dominica, Commonwealth of	Mexico
Dominican Republic	Puerto Rico
Guadeloupe	
Guyana	
Montserrat	
Saint Kitts and Nevis	
Saint Vincent and the Grenadines	
St. Maarten (Dutch part)	
Suriname	
Trinidad and Tobago	
Turks and Caicos Islands	
United States of America	

The table below outline the total local yield over a five (5) year period (2012-2016), in comparison to the yield of three of our top Import partners.



WORLD YIELD AND PRODUCTION OF PINEAPPLES




Production/Yield quantities of Pineapples in World + (Total)
2012 - 2016
26M
25M
24M
tonnes
1,050k
1,025k
1,000k
ha
2012
2013
2014
2015
2016
World
World

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