

# PROMOTING JAMAICAN HOT PEPPER



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## Crop Profile

The hot pepper (**Capsicum chinense**) belongs to the family Solanaceae. Peppers are widely grown in Jamaica and in recent years have grown in popularity locally and in overseas markets. Hot peppers are warm weather crop, and have little tolerance for cold. There are two varieties in Jamaica which are of economic importance namely the Scotch Bonnet and the West Indian Red. The Jamaican Hot Peppers, like other chili peppers, contain capsaicin. Capsaicin is the chemical compound responsible for the level of heat in a pepper. On the Scoville heat scale, Jamaican Hot peppers rank at 100,000 -200,000 SHU or Scoville Heat Units<sup>1</sup>.

Hot pepper is used either in its fresh form or in several value added forms primarily for the manufacturing of sauces. Jamaica is world renowned for its flavoured Jerk sauces; with its main ingredient being our Jamaican peppers. This authentic product has gained worldwide acceptance as a premium product from the island of Jamaica labeled under the brand “Jerk”. Consequently, it is being sold at a premium price in overseas markets. The core advantage that the Jamaican jerk sauces have is unique taste and aroma, which give the sauces competitive advantage over other rival brands in the external market. Jerk sauces and fresh Scotch Bonnet Peppers complement our famous Jerk meats which the island endorse as “a must have” once you visit Jamaica.

Generally, the hot pepper market in Jamaica can be characterized by alternating periods of abundance and scarcity due mainly to demand and supply cycles that do not coincide. While demand for hot peppers from the agro processing and local markets remains relatively constant throughout the year, supply fluctuates due to weather and temperature factors. During the winter months pepper supply is at its lowest, whilst demand is at its highest.

The Ministry of Industry, Commerce, Agriculture and Fisheries; Agricultural Services Unit assist farmers by creating linkages with overseas and domestic buyers for Jamaican hot peppers.

Hot pepper is being identified as a priority commodity for the Caribbean. In 1998, an assessment of the export competitiveness of non-traditional crops and livestock activities in the Caribbean indicated that hot pepper had significant potential for successful and competitive production in the region<sup>2</sup>. This assessment

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<sup>1</sup> <http://www.scovillescaleforpeppers.com/Jamaican-hot-pepper-scoville-units-shu/>

<sup>2</sup> <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.551.3265&rep=rep1&type=pdf>

is still accurate and relevant in today's market and can be attested by the high demand being required by the export and agro processing sectors. The high demand for Jamaican sauces placed high importance on Jamaican hot pepper.

Hot peppers are grown island -wide . However, in 2017 the parishes of St. Elizabeth, St. Ann, St. Mary, Hanover and Westmoreland were the major producers boasting 62.6% of total production.<sup>3</sup>

### **Agronomic Requirements**

#### **Soil Type**

Hot pepper can be grown on different types of soils with pH range of 6.0 to 7.5 (slightly acid to slightly alkaline soil). However, it prefers well drained fertile loam or clay loam.





### **Why Invest in Hot Pepper?**

**The production of hot peppers in Jamaica is found to be attractive to investors as peppers are:**

- Relatively easy to grow
- Climatic conditions locally are favourable for production
- High demand for fresh and value added pepper products in the local and overseas market
- The crop is profitable
- Quick turnover of capital invested

### **Health Benefits**

A few of the health benefits to be derived from consuming peppers are as follows:

1. Capsaicin is shown to hinder the growth of some cancerous tumors
2. Topical forms of capsaicin are recognized treatment for osteoarthritis pain
3. Burns fat resulting in weight loss
4. Protects your heart and improves circulation
5. Prevents sinusitis and relieves congestion.
6. Improves Digestion

## Estimate of Hot Pepper Production (kg) by Quarter, 2013- 2017

**Table 1**

Quarter	Hot Pepper Production Volume - Kilogram				
	2013	2014	2015	2016	2017
January - March	3,075,000	4,188,000	3,631,000	4,003,000	3,324,000
April - June	3,972,000	3,749,000	3,394,000	4,257,000	3,638,000
July - September	4,147,000	2,716,000	2,703,000	3,817,000	3,779,000
October - December	4,010,000	3,448,000	3,384,000	3,989,000	3,779,000
<b>Total</b>	<b>15,204,000</b>	<b>14,101,000</b>	<b>13,112,000</b>	<b>16,066,000</b>	<b>14,520,000</b>

Source: Agricultural Marketing Information Division

An examination of the production of hot peppers by quarter, over the last 5 years, reveals that there is no discernable period where production is at an extremely high or low level. It further highlights the fact that production of hot peppers can be undertaken successfully throughout the year as showed in table 1.

Generally, the hot pepper market in Jamaica is affected by periods of abundance and scarcity due mainly to demand and supply cycles that do not coincide. While demand for hot peppers from the agro processing and local fresh markets remains relatively constant throughout the year, supplies fluctuate due to weather and temperature factors.

**Table 2**

Estimate of Hot Pepper Area Reaped By (Hectare) Quarter for the years 2013- 2017						
Quarter	Hectare 2013- 2017					Total
	2013	2014	2015	2016	2017	
Jan-Mar	251	295	261	277	240	1,324
April - June	297	274	255	300	253	1,379
July - Sept.	319	217	210	264	262	1,272
Oct.- Dec.	294	252	259	280	282	1,367
<b>Total</b>	<b>1161</b>	<b>1038</b>	<b>986</b>	<b>1121</b>	<b>1038</b>	<b>5,342</b>

Source: Agricultural Marketing Information Division

An examination of the production of hot peppers by quarter, over the last 5 years, reveals that there is no discernable period where production in hectares was extremely high or low. This indicates that farmers were basically consistent with the amount of land used in pepper production.

## FARMGATE PRICE (\$/kg) BY QUARTER 2013-2017

**Table 3**

<b>Hot Pepper (J\$/kg.)farmgate prices for the period 2013-2017</b>					
<b>Quarter</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
January – March	264.16	284.15	237.70	254.06	379.26
April – June	186.39	184.78	237.71	238.52	323.33
July – September	178.48	246.15	259.68	256.67	327.15
October – December	219.38	217.62	273.69	299.75	349.93
Annual Price Average in the local market	208.75	234.14	251.53	261.80	344.05

Source: Agricultural Marketing Information Division

During the period in review 2013-2017 annual average farmgate prices increased steadily. Comparing first quarters over the period 2013- 2017 reveals that in year 2017 farmgate price was at its highest.

### **Profitability**

An observation of the 2017 percentage margins for the cost of production-farmgate and farmgate-retail (appendix 4) revealed that it was profitable to produce and sell Scotch Bonnet and West Indian Red peppers in the various market outlets.

## Target Markets

The main channels for the marketing and supply of local fresh peppers are given below.

1. Restaurants
2. Agro Processors
3. Supermarkets/Retailers
4. Hotels
5. Higglers
6. Wholesalers
7. Exporters

**Table 4**

<b>Total Hot Pepper Fresh and semi-value added forms exported (kg) during the Five year review period 2013-2017</b>			
<b>Year</b>	<b>Volume (Kg)</b>	<b>Value JA (\$)</b>	<b>US ( \$)</b>
<b>2013</b>	58,395	27,749,457	276,694
<b>2014</b>	58,429	21,307,749	196,434
<b>2015</b>	64,848	22,938,173	196,590
<b>2016</b>	253,603	70,639,512	565,063
<b>2017</b>	474,973	142,423,747	1,112,124
<b>Total</b>	<b>910,248</b>	<b>285,058,638</b>	<b>2,342,905</b>

Source: Statistical Institute of Jamaica

Total fresh and semi value added processed forms showed extra ordinary percentage gains during the review period 2013 to 2017. Export quantities and value for this market segment grew by 713.38% and 301.93% respectively when comparing the performance of 2013 with 2017. This market segment represents fresh, grounded, crushed and dried peppers.

There are several forms in which hot peppers can be prepared and marketed namely:

- Pepper mash
- Dried/Dehydrated pepper
- Ground/Crushed Dried Pepper
- Sauces



## Current Business Opportunity

In a meeting held with the Jamaica Agro processors Association (JAPA) on April 11, 2018 members spoke about the lack of Scotch Bonnet Peppers availability for the raw material input for sauces. The association was only able to satisfy 55% of the sauce market; leaving a gap of 45% unfilled.

**Table 5A Exports of Hot Pepper Sauce (kg) by Destination for the Period 2013-2017**

Destination	2013	2014	2015	2016	2017	Total
USA	352,410	498,633	555,369	533,912	356,966	2,297,290
UK	78,336	39,100	16,814	47,093	94,484	275,827
Canada	139,868	177,050	169,678	204,292	158,477	849,365
Others	97,927	105,089	95,285	137,469	88,210	523,980
<b>Total</b>	<b>668,541</b>	<b>819,872</b>	<b>837,146</b>	<b>922,766</b>	<b>698,137</b>	<b>3,946,462</b>

Source: Statistical Institute of Jamaica

During the five year period accumulated exports for Hot Pepper Sauce was 3,946,462 kilograms. The three main export destinations were the United States of America, Canada and the United Kingdom.

**5B Exports of Hot Pepper Sauce (Value US\$) by Destination for the Period 2013-2017**

Destination	2013	2014	2015	2016	2017	Total
USA	1,429,694	1,485,608	1,670,658	1,551,836	1,577,958	7,715,754
UK	377,399	79,684	37,136	100,277	187,215	781,711
Canada	577,203	543,787	420,378	584,987	660,276	2,786,631
Others	465,200	498,891	242,267	175,382	327,998	1,709,738
<b>Total</b>	<b>2,849,496</b>	<b>2,607,970</b>	<b>2,370,439</b>	<b>2,412,482</b>	<b>2,753,447</b>	<b>12,993,834</b>

Source: Statistical Institute of Jamaica

Jamaica's total Hot Pepper Sauce export value over the last five years 2013-2017 was US\$12.9 million. Agro processors exported an annual average of two point six million United States dollars (US\$ 2.6M) worth of Hot Pepper Sauce.

## Preclearance and External Markets

It is important to note that Jamaican peppers feature on the USDA preclearance list of 52 horticultural commodities, which essentially allows for expedited trade with the United States and related territories. Through preclearance; fruits, vegetables, root crops, and flowers are inspected and/or treated to ensure that they are pest/soil/disease free for export. This facility augurs well for export expansion into the North American market for Jamaican peppers.

## **Global Trade**

Global production of fresh chillies and peppers amounts to nearly 30 million tonnes annually and Mexico is responsible for 7 percent.

## Appendix 1

Parish	Clarendon
Extension Area	May Pen
Crop	HOT PEPPER (WI RED)
Crop Maturity	3 Months
Reaping Period	9 Months
Planting Distance (l x w)	
cm	30 x 150
inches	12 x 60
Planting Population	8712
Terrain	Relatively Flat Land Farm
Land Preparation	Mechanical
Irrigated/Rain fed	Irrigated
Area	0.4 hectare
Man-day Charge (excluding lunch)	\$2,000
Projected Marketable Yield (Kg)	12,273
<b>Cost of Production \$/Kg</b>	<b>\$72</b>

Labour Operations	Unit	No. of Units	Cost/Unit	Total Cost
Land Cleaning	MD	5	2000	10000
Ploughing	tractor	3	2500	7500
Harrowing	tractor	2	2500	5000
Furrowing	tractor	1	2500	2500
Lining Irrigation Hose	MD	3	2000	6000
Planting	MD	3	2000	6000
Pesticide Application	MD	18	2000	36000
Weed Control	MD	30	2000	60000
Fertilizer Application	MD	5	2000	10000
Harvesting	MD	85	2000	170000
<b>Lunch</b>		149	500	74500
<b>SUBTOTAL</b>				<b>\$387,500</b>

### Material Inputs

Planting Material	each	8712	15	130680
Water	month	12	2000	24000
<b>Fertiliser:</b>				
Soluble	bags	9	8500	76500
NPK	bags (50 k	3	5300	15900
<b>Insecticide</b>				33750
<b>Fungicide</b>				19000
<b>Herbicide:</b>				
Broad Spectrum	litre	2	1600	3200
<b>SUBTOTAL</b>				<b>\$303,030</b>

### Other Costs

Contingencies (10 percent of labour and material)				69053
**Tools discounted for 5 years				8400
Land Charges per crop cycle				10000
Supervision (15 percent of labour and material)				103580
<b>SUBTOTAL</b>				<b>\$191,033</b>
<b>TOTAL OPERATING EXPENDITURE PER CROP CYCLE</b>				<b>\$881,563</b>

## Appendix 2

Parish	Trelawny	
Extension Area	Falmouth	
Crop	SCOTCH BONNET PEPPER	
Crop Maturity	3 Months	
Reaping Period	6 Months	
Planting Distance (l x w)		
	cm	60 x 90
	inches	24 x 36
Plant Population	7260	
Terrain	Relatively Flat Land Farm	
Land Preparation	Mechanical	
Irrigated/Rain fed	Irrigated	
Area	0.4 hectare	
Man-day Charge (excluding lunch)	\$2,000	
Projected Marketable Yield (Kg)	12,727	
<b>Cost of Production \$/Kg</b>	<b>\$81</b>	

Labour Operations	Unit	No. of Units	Cost/Unit	Total Cost
Land Cleaning	MD	5	2000	10000
Ploughing	tractor	5	2500	12500
Harrowing	tractor	3	2500	7500
Furrowing	tractor	2	2500	5000
Lining Irrigation Hose	MD	2	2000	4000
Mulching	MD	8	2000	16000
Planting	MD	6	2000	12000
Pesticide Application	MD	32	2000	64000
Weed Control	MD	10	2000	20000
Fertilizer Application	MD	1	2000	2000
Harvesting	MD	80	2000	160000
<b>Lunch</b>		144	500	72000
<b>SUBTOTAL</b>				<b>\$385,000</b>

Material Inputs				
Planting Material	each	7260	15	108900
Mulch	rolls	2	40000	80000
Water	month	9	1500	13500
<b>Fertiliser:</b>				
Potassium Nitrate	bags	8	6500	52000
Mono Potassium Phosphate	bags	6	7500	45000
Magnesium Sulphate	bags	4	2000	8000
Sulphate of Ammonia	bags	3	4000	12000
<b>Insecticide</b>				69000
<b>Fungicide</b>				29000
<b>Herbicide:</b>				
Broad Spectrum	litre	3	1600	4800
<b>SUBTOTAL</b>				<b>\$422,200</b>

Other Costs				
Contingencies (10 percent of labour and material)				80720
**Tools discounted for 5 years				8400
Land Charges per crop cycle				10000
Supervision (15 percent of labour and material)				\$121,080.0
<b>SUBTOTAL</b>				<b>\$220,200</b>
<b>TOTAL OPERATING EXPENDITURE PER CROP CYCLE</b>				<b>\$1,027,400</b>

## Appendix 3

### List of pepper agro processors

Processor	Contact Name	Parish	Phone Number
Busha Browne	Mr. Winston Stona	Kingsnton	754-3587 / 861-3460
Caribbean Herb & Spice	Dalton Roseway	St. James	836-6317
Central Food Packers Ltd	Paul Bravo	St. Catherine	984-3118 / 819-0205
Chin's Farm Ltd.	lloyd Chin		985-9614 / 476-3600
Gary's Pepper Products	Mr. Phillip Gary	Westmoreland	918-0395
Grace Food Processors	Ms. Carleen Henry	Kingsnton	923-6027
Island Food Processors	Mr. Michael Canton	Kingsnton	922-3991
King Pepper	Mr. Dudley Eaton	Trelawny	954-4462-3 / 817-9960
Tastees Ltd.	Mrs. Tai		968-6634-6
Tijule Company Limited	Mr. Haughton	Clarendon	986-4873
Tweedside Processors	Lorna Kong	Kingsnton	926-6964
Walkerswood Caribbean Foods Ltd.	Mr. Woodrow Mitchell	St. Ann	917-2318-9
Walkerswood Caribbean Foods Ltd.	Mr. Rupert Grant	St. Ann	917-2647-8
Yaad Style Herbs & Spices	Alanzo Bernard	St. James	836-6317
Jamica Exotic Flavours and Essences Company Ltd.	Mr. Norman Wright	Manchester	961-4142
West Best Foods Ltd.	Mr. Andrew Morales	Westmoreland	955-0812 / 909-9764
Stanmark Processors	Mr. Canute Sadler	St. Thomas	706-3344/909-2245
St. Mary Processors	Donald Duncanson	Kingsnton	992-4258
Island Packers Ltd.	Michael Ming	Clarendon	928-3435 / 9950958
Spur Tree Processors			

#### Appendix 4

Year	Price (\$/kg)		% difference Between Scotch Bonnet Farmgate - Retail
	Farmgate	Retail	
2017	344.05	601.46	74.82

Source: farmgate prices were done by the AMID whilst retail prices was extracted from the Jamaica Agricultural Marketing System (JAMIS)

Retail margin percentage to Farm gate showed that Scotch Bonnet Peppers were sold at a premium price.

3B

Year	Price (\$/kg)		% difference Between Scotch Bonnet COP - Farmgate
	Cost of Production	Farmgate	
2017	81.00	344.05	324.75

Source: farmgate prices were done by the AMID whilst the COP were provided by the Economic Planning Division

3C

Year	Price (\$/kg)		% difference Between West Indian Red COP -Farmgate
	Cost of Production	Farmgate	
2017	72.00	344.05	377.85

Source: farmgate prices were done by the AMID whilst the COP were provided by the Economic Planning Division

3D

Year	Price (\$/kg)		% difference Between West Indian Red Farmgate - Retail
	Farmgate	Retail	
2017	344.05	479.33	39.32

Source: farmgate prices were done by the AMID whilst retail prices was extracted from the JAMIS

## Reference

Statistical Institute of Jamaica (STATIN) .....Export data for the period 2013-2017

Ministry of Industry, Commerce, Agriculture and Fisheries (MICAF)..... Agricultural Marketing Information Division provided Farmgate, production data and crop area reaped

MICAF – Economic and Planning Division ... Cost of Production data

MICAF – Land Management Division provided soil type

Hot pepper is being identified as a priority commodity for the Caribbean..

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.551.3265&rep=rep1&type=pdf>

Scoville heat scale..... <http://www.scovillescaleforpeppers.com/Jamaican-hot-pepper-scoville-units-shu/>

Benefits of Hot Pepper, <http://you.naturesplus.com/benefits-of-eating-hot-peppers/>