

Investment Profile- Sweet Potato

Overview

Sweet Potato (*Ipomoea batatas*) is a warm weather vegetable belonging to the convolvulaceae family originating from parts of Central and South America. It is the third most widely grown root tuber in Jamaica, after yams and cassava. The plant stores its food in its tuber, emanating in different colours- yellow, white and red. Optimal production of sweet potatoes occurs in sandy soils, warm climatic conditions, and nutrient and soil moisture availability. These provide the ideal medium to support maximum productivity, however due to soil's natural variability in structure and nutrients, technical soil tests must be simplified and engineered to suit the crop requirement.

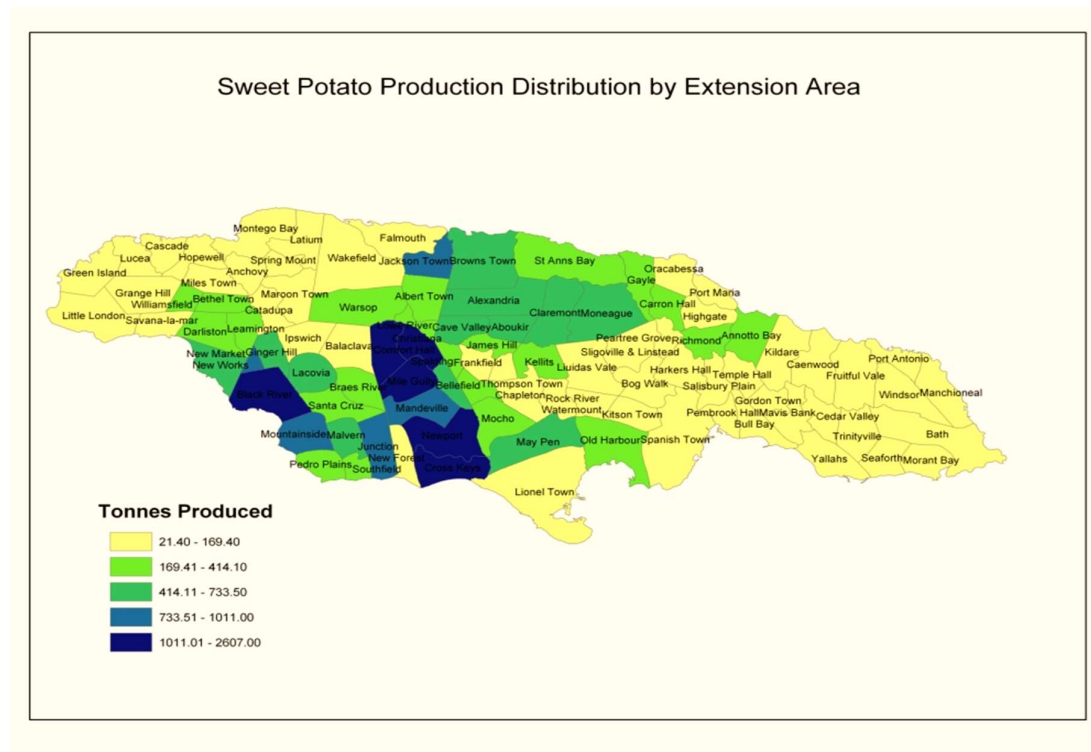
The sweet potato is an excellent source of carbohydrate and is a major staple in the average Jamaican's diet. It is one of the most highly demanded tubers in Jamaica, required in the export and fresh food markets as well as in the agro processing industry. Traditionally, the majority of sweet potato produced on the island is consumed domestically with just over 2% making it to the export market. Overall only about 1% of the world's total sweet potato production is traded on the world market as it is used to satisfy domestic demand in most countries.

Jamaican Sweet Potato Production

Areas Produced

Sweet Potato can be cultivated island-wide but does best on fertile, friable, well-defined, free draining soils. The ideal production areas are St. Catherine, St. Ann, St. James and St. Elizabeth. Historically, the parishes of Manchester, St. Elizabeth and St. Ann have been the major producers, boasting approximately sixty nine percent (69%) of total production. The tuber is available all year round and matures in approximately 4 months.

(source: www.rada.gov.jm).



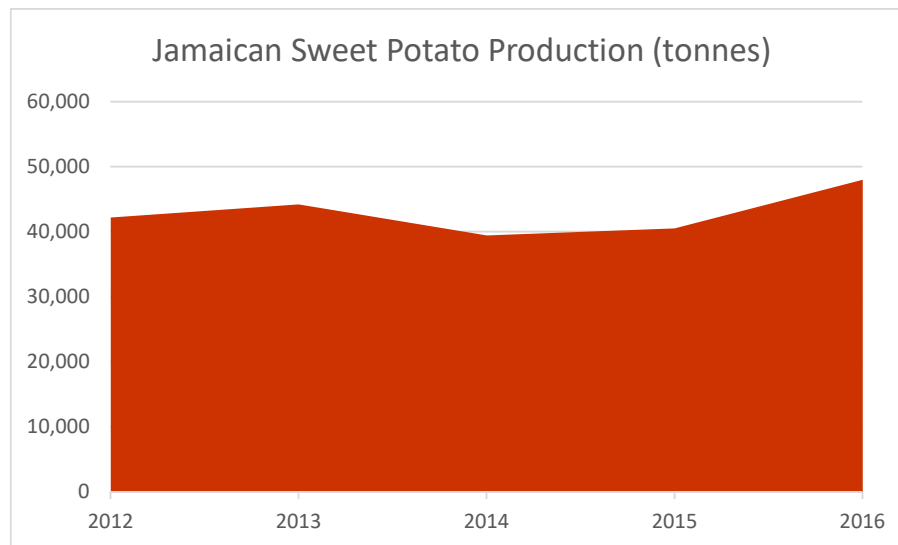
Cultivars

Although numerous varieties of the tuberous root can be distinguished locally, the Uplifter, Quarter Million, Eustace, Big Red, Clarendon, Blue Bud and Dor are most popular; the beauregard variety was imported to boost production mainly for the export market. Tubers may have smooth or irregular ribbed surface and the skin and flesh may range from pure white through cream, yellow, orange or pink to a very deep purple depending upon the amount of various carotenoid pigments present and the presence or absence of anthocyanins (plant pigments). Jamaican consumers give preference to smooth, red skin types with white flesh. Among the local varieties, the Uplifter with its yellow flesh is in high demand by the ethnic population in the export market.

Cost of Production

According to www.rada.gov.jm, the cost to establish a hectare of sweet potato is \$680,000. Marketable yield is 17,000 kg with a cost of production of \$40.00 / kg. Sweet potato will fetch prices ranging between \$80 and \$192.

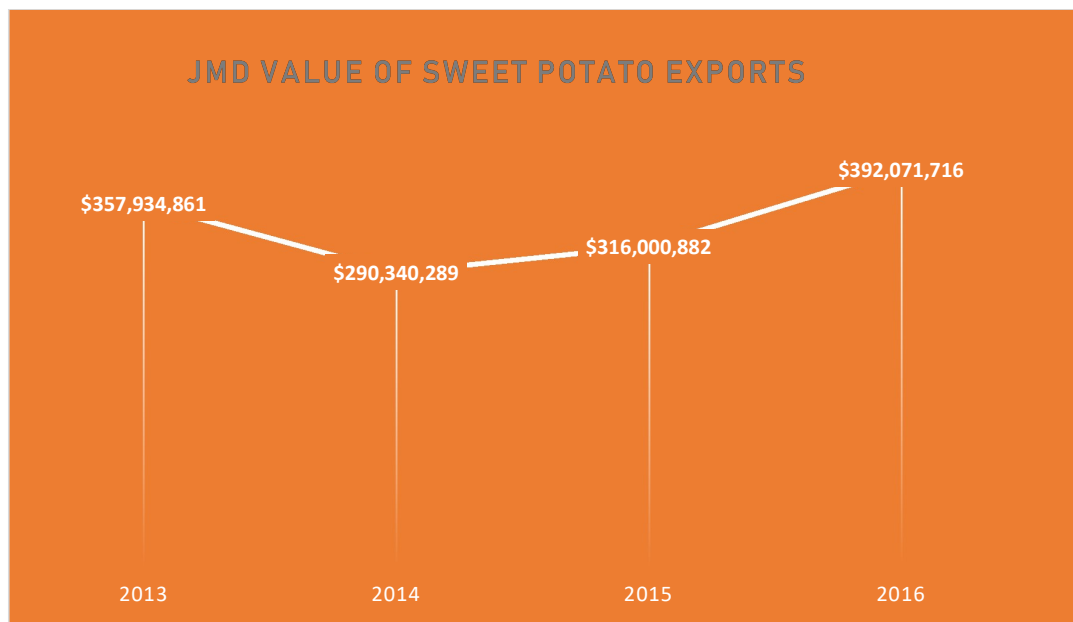
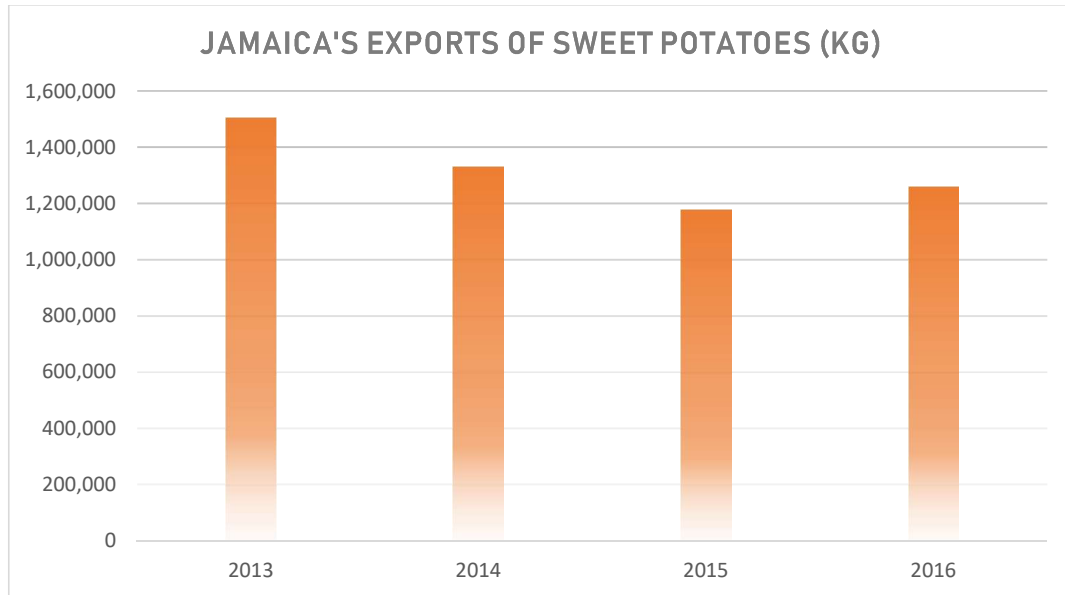
Investors in sweet potato production can expect a ROI of at least 100%.

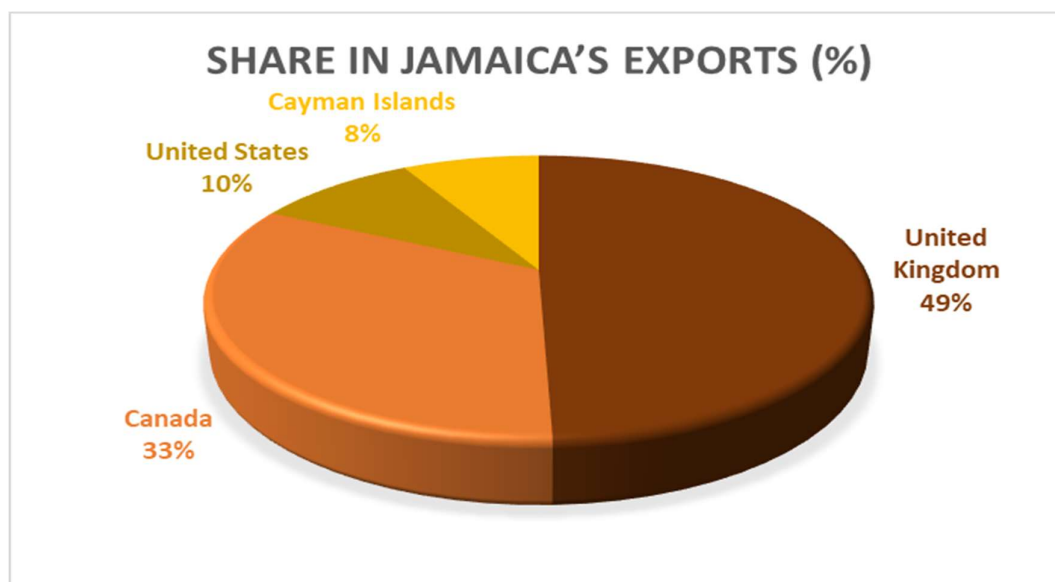


Year	2012	2013	2014	2015	2016
Production (tn)	42,164	44,224	39,412	40,535	48,006
Area Reaped (ha)	2,468	2,561	2,364	2,405	2,752
Yield (t/ha)	17.08	17.27	16.67	16.85	17.44

Jamaican Sweet Potato Exports

Over the period 2013-2016 Jamaican sweet potato exports averaged 1,316,952 kg. Combined, the United States, Canada and the United Kingdom accounted for over 90% of total exports.





According to the Statistical Institute, Jamaica exported 1,257,795 Kg (1257.795 tonnes) of sweet potatoes in 2016; this represents 0.7% of total world exports for sweet potatoes ranking Jamaica 20th in exports of the product.

The United Kingdom, Netherlands and Canada imported the highest value of sweet potatoes over the past three years with UK demand growing exponentially. With the United Kingdom holding the highest share of Jamaica's sweet potato exports this presents a major opportunity for Jamaica. The value of UK imports of sweet potato have grown by 31% between 2012 and 2016 and in just one year -2015-2016, the value of UK sweet potato imports have grown by 11%. The United Kingdom is the largest importer of sweet potatoes accounting for 24.8% of world imports.

Jamaica's other major market Canada, which accounts for 10.3% of the world's sweet potato imports has also seen a growth in the value of imports of 4% over the 2012 to 2016 period and 2% from 2015 to 2016.

As sweet potato is not highly cultivated in Europe, it presents the greatest opportunity for Jamaica to increase its production to meet the rapidly growing demand for the produce.

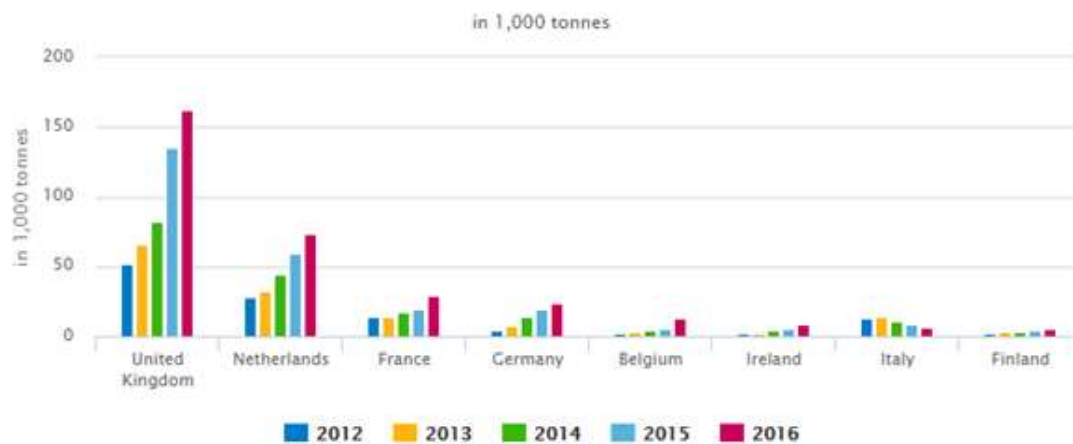
Based on rising demand, Spain has ramped up production and the value of UK imports from Spain has grown significantly between 2012 and 2016.

Value of United Kingdom Sweet Potato Imports from Spain (Thousands of US dollars)

2012	2013	2014	2015	2016
1,145	1,975	4,883	11,926	14,650

Even with increased production in Spain the UK demand for the produce still presents a huge opportunity for investors in Jamaican sweet potato production. The proliferation of ethnic and exotic food in restaurants, dedicated sections in supermarkets and food stores geared at supplying fresh produce, the world demand is expected to continue to trend upwards.

Main sweet potato importers in Europe, including European trade 2012-2016



Unit Values (USD cost per Tonne) of Sweet Potatoes from World's Top 20 Exporters

Exporters	Quantity Unit	Unit value (USD/unit)
World	Tons	966
United States of America	Tons	1129
Netherlands	Tons	1337
Viet Nam	Tons	1298
Spain	Tons	892
China	Tons	1128
Lao People's Democratic Republic	Tons	1129
Egypt	Tons	1129
United Kingdom	Tons	979
Canada	Tons	563
Israel	Tons	1057
Japan	Tons	3479
Honduras	Tons	424
Indonesia	Tons	795
Brazil	Tons	360
Dominican Republic	Tons	727
France	Tons	1406
Belgium	Tons	1354
Germany	Tons	1630
Senegal	Tons	828
Jamaica	Tons	2064

Source: www.trademap.org

Grading

The Ministry of Industry Commerce Agriculture and Fisheries of Jamaica outlines that sweet potato quality is primarily based on firmness, colour, shape, uniformity and maturity. Bulbs should be free from decay, diseases, defects, pest and pest damage. Sweet potatoes should be of similar varietal characteristics, clean, mature, fresh and firm.

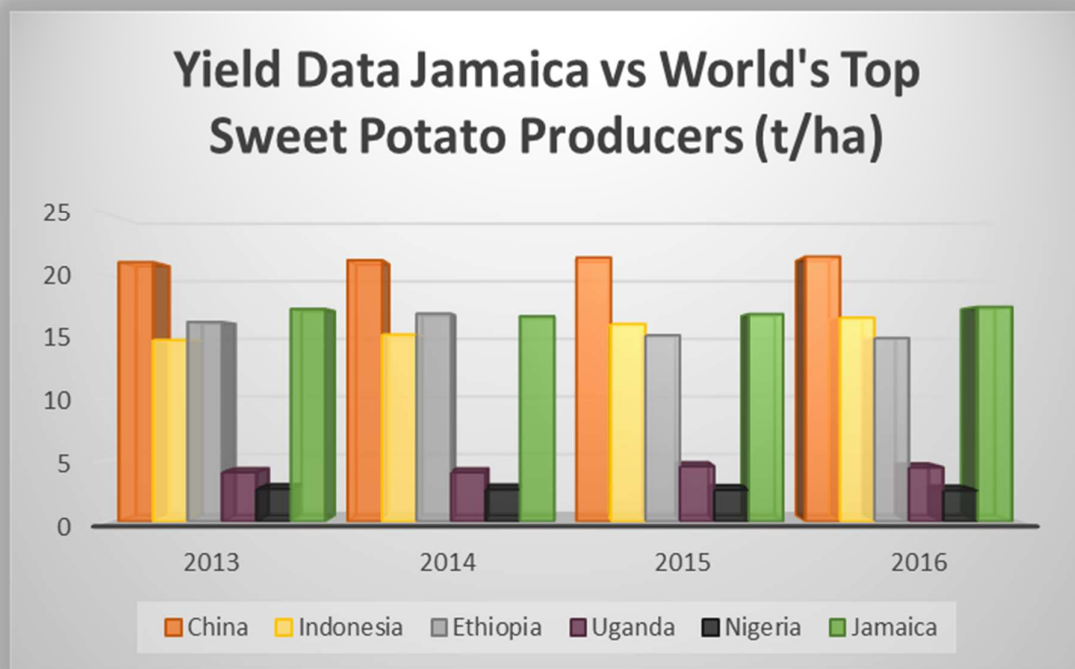
Characteristics	Grade 1	Grade 2	Grade 3
Size	Weight range of between 0.5kg to 1kg (1.1 to 2.2lb). Not less than 3 inches (76mm) in diameter at the widest section.	Weight range of between 0.5kg to 1kg (1.1 to 2.2lbs.). Not less than 3 inches (76mm) in diameter at the widest section.	A range of sizes.
Colour	Uniformed colour, typical of the variety.	Uniformed colour, typical of the variety.	Uniformed colour, typical of the variety.
Shape	Well shaped to type. Not lopsided or otherwise deformed. Tuber tapered towards the ends	Fairly well shaped to type Tuber tapered towards the ends.	A range of shapes within the variety.
Firmness	Does not yield to pressure.	Does not yield to pressure.	Yield to moderate pressure.
Appearance	Well trimmed, completely free from decay, pest damage, diseases, green discolouration, sprouts, bruises, growth cracks and any other defects.	Fairly well trimmed, completely free from decay, pest damage, diseases, green discolouration, sprouts, bruises, growth cracks and any other defects.	Completely free from decay sprouts, discolouration, pest and pest damage.

Sweet Potato Grading Specification (source: Ministry of Industry Commerce Agriculture and Fisheries)

Yield

The world's top producer of sweet potato is China with a yield of 21.51 (t/ha) in 2016 and total production of 2,126,989 tonnes for the same year. Most of China's production is used in the domestic market for animal feed.

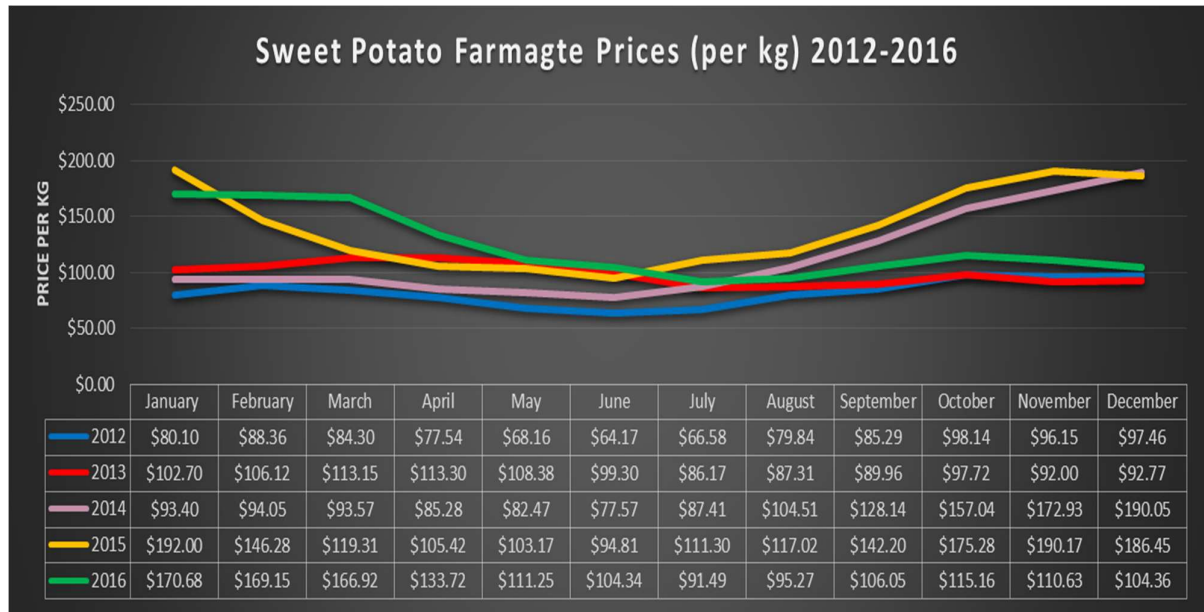
Jamaica's yield for the crop is on par with the world's top three producers and significantly higher than Uganda and Nigeria who round out the top five countries with the highest production.



Yield Comparison of Jamaica vs. Top Sweet Potato Producers (t/ha)

Country	2013	2014	2015	2016
China	21.06	21.22	21.43	21.51
Indonesia	14.75	15.20	16.05	16.57
Ethiopia	16.21	16.89	15.13	14.92
Uganda	4.01	4.00	4.50	4.41
Nigeria	2.66	2.62	2.58	2.53
Jamaica	17.27	16.67	16.85	17.44

Local Market



Sweet potatoes in its fresh form is currently the highest form of exports; there are however a number of processing opportunities for investors in sweet potatoes. In most developing counties like Jamaica, sweet potato is used as a substitute for rice and so it is being prepared in a number of forms.

Local Opportunities for Processing
- Sweet Potato Fries and Wedges
- Sweet Potato Flour
- Pastry Preparation
- Sweet Potato Snacks and Chips

Export Requirements

Under the provisions of the Agricultural Produce Act and international trading partners, companies wishing to export sweet potato must:

- Register with the Companies Office of Jamaica.
- Utilize a certified packing house - the Packing House is a building where all the operation regarding: washing, treating, drying and packing of the sweet potato or any fresh produce takes place.
- Register with JAMPRO.

There are also country specific requirements, some of which are outlined in the table below:

Country	General Considerations	Other Considerations
<p>United Kingdom</p>	<p>For importers of fresh fruit and vegetables, the traceability of products is compulsory. To fulfil this obligation, European importers will require you to provide proof of the origin of all fruits and vegetables with a Bill of Lading, phytosanitary certificate, packing list and custom documentation. Shipment of agriculture produce should be accompanied by a EURO 1 form (non-phytosanitary requirement)</p>	<p>Pesticide residues are one of the crucial issues for fruit and vegetable suppliers. To avoid health and environmental damage, the European Union has set maximum residue levels (MRLs) for pesticides in and on food products. Products containing more pesticides than allowed will be withdrawn from the European market. Reduce the amount of pesticides by applying integrated pest management (IPM) in production. IPM is an agricultural pest control strategy that includes growing practices and chemical management.</p> <p>The most commonly requested certification is GLOBALG.A.P., a pre-farm-gate standard that covers the whole agricultural production process, from before the plant is in the ground to the non-processed product (processing is not covered). Whether GLOBALG.A.P. is required also depends on the destination country, market conditions and market channel. For example, it has become nearly impossible to supply northern Europe without GLOBALG.A.P. since it is a standard requirement for most supermarkets.</p>
<p>Canada</p>	<p>Potatoes should be the standard of U.S. Extra No. 1 grade or U.S. No. 1 grade</p> <ul style="list-style-type: none"> -be properly packed; - not be artificially coloured; - have similar varietal characteristics 	<p>Potatoes from other countries must be inspected and certified by CFIA upon arrival to meet Canadian minimum import requirements.</p> <p>Importation of any commodity (including root crops) in association with soil from areas other than the continental U.S. is prohibited. Root crops must be free from soil. No loose soil may be present inside or adhering to the outside of shipping containers, bins or packaging. A fine film of dust (as from dirty wash water) is permitted.</p>

<p>United States</p>	<p>Grades:</p> <p>U.S. Extra No. 1, U.S. No. 1, U.S. No. 1 Petite, U.S. Commercial, U.S. No. 2</p> <p>U.S. Extra No.1 Length shall be not less than 3 inches or more than 9 inches. Maximum weight shall be not more than 18 ounces. Maximum diameter shall be not more than 3-1/4 inches. Minimum diameter, shall be not less than 1-3/4 inches.</p> <p>U.S. No.1 Maximum diameter shall be not more than 3-1/2 inches. Maximum weight shall not be more than 20 ounces. Length, unless otherwise specified, shall be not less than 3 inches or more than 9 inches. Minimum diameter, unless otherwise specified, shall be not less than 1-3/4 inches.</p>	<p>Compliance with the provisions of grading standards shall not excuse failure to comply with the provisions of the Federal Food, Drug and Cosmetic Act, or with applicable State laws and regulations.</p> <p>Sweet Potato exports to the United States are guided by regulations which make it difficult for Jamaica to access the market in a cost effective way.</p>
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Appendix

Major Canadian Importers of Sweet Potato in 2016

ARC-EN-CIEL PRODUCE INC	Toronto	Ontario
BOEUF MERITE	Montréal-Nord	Quebec
BUY-LOW FOODS DIVISION	Vancouver	British Columbia
CANADAWIDE FRUIT WHOLESALERS INC	Montréal	Quebec
CAVENDISH FARMS	Dieppe	New Brunswick
COURCHESNE, LAROSE, LIMITEE	Anjou	Quebec
COURTIER NORDANY BROKER INC.	Saint-Roch-Ouest	Quebec
DOMINION CITRUS & DRUGS	Toronto	Ontario
GAMBLES ONTARIO PRODUCE INC.	Toronto	Ontario
GUAN'S MUSHROOM CANADA INC.	Markham	Ontario
IPPOLITO PRODUCE LIMITED	Toronto	Ontario
LA MAISON SAMI T A FRUITS INCADMIN	Montréal	Quebec
LAKEVIEW VEGETABLE PROCESSING INC	Queensville	Ontario
LOBLAWS INC.	Brampton	Ontario
LONGO BROTHERS FRUIT MARKET INC	Woodbridge	Ontario
METRO ONTARIO INC.	Toronto	Ontario
MONDELEZ CANADA INC.	Toronto	Ontario

OVERWAITEA FOOD GROUP LIMITED PARTNERSHIP	Langley	British Columbia
SEOUL TRADING CORP.	Port Coquitlam	British Columbia
SOBEYS ONTARIO	Mississauga	Ontario
SOBEYS WEST INC.	Calgary	Alberta
STREEF PRODUCE LIMITED	Princeton	Ontario
TAMISHA TRADING INC.	Toronto	Ontario
THE CRUMP GROUP INC.	Brampton	Ontario
THE FRESH WAVE LLC	Vineland	New Jersey
THE PRODUCE PEOPLE LTD.	Calgary	Alberta
TOMATO KING 2010 INC.	Toronto	Ontario
WAYNE E. BAILEY PRODUCE COMPANY	Chadbourn	North Carolina
WHOLESALE PRODUCE SUPPLY ULC	Calgary	Alberta

Source: www.ic.gc.ca