Ministry of Agriculture & Fisheries
Government of **Jamaica**, West Indies

PEST RISK ANALYSIS UNIT

TECHNICAL MARKET ACCESS SURVEY

Phytosanitary Situation of Onion (*Allium cepa*) in Jamaica

Destination: Trinidad and Tobago

June, 2011

Information requested for a Pest Risk Analysis for Onion (*Allium cepa*) from Jamaica to Trinidad and Tobago

National Plant Protection Organisation

Plant Quarantine/Produce Inspection

Ministry of Agriculture

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Introduction

Onion (*Allium cepa*) is the most widely cultivated species of the genus *Allium* internationally. It is also known as the bulb onion or common onion. Onions are found in a large number of recipes and preparations spanning almost the totality of the world's cultures. The whole plant is edible and is used as food in some form or the other. They are now available in fresh, frozen, canned, caramelized, pickled, powdered, chopped, and dehydrated forms. Onions can be used, usually chopped or sliced, in almost every type of food, including cooked foods and fresh salads and as a spicy garnish. Depending on the variety, an onion can be sharp, spicy, tangy, pungent, mild or sweet.

In recent years the onions that have been produced in Jamaica was only sold on the local market. Jamaica consumed approximately 12,000 tonnes of onions annually and produced about 6-7% of what is consumed; however there is a drive to increase production. The Marketing and Agriculture for Jamaican Improved Competitiveness Programme (MAJIC), an USAID funded project, was put in place to assist with: fertiliser, seeds, land preparation, technical support and market access. With this support more farmers are enthuse about the idea and show positive attitude towards going into production. With the increase in production it is estimated that Jamaica would be able to enter into the export market.

The varieties that are mostly grown in Jamaica are: Jaguar, Granex, Superex, Cougar, Texas Early Grano, Granex Yellow F1 and Caballero. All of these varieties except Caballero are termed as short days. Caballero is term as intermediate (midday).

Classification

Taxonomy	Plantae
	Angiosperms
	Monocots
	Asparagales
	Alliaceae
	Allium
	cepa
Plant part	Bulb
Purpose	Consumption
Export time	Approximately 3 hours by Air

PROPAGATION

Propagation of onion is mainly done by direct seeding or by transplanting from seed bed. Seedlings are ready for transplanting approximately 10 weeks from germination. When transplanted it is done at a spacing of 5-8 cm apart in rows and 30-45 cm apart. When done from direct seeding it is normally thinned to the same distance as if transplanted. Onions are planted on well pulverised soil in a generally flat area. Irrigation is of paramount importance. It is necessary for germination, establishment and bulb formation. In areas where irrigation is not frequent farmers normally mulch the field before or after planting their crops using mainly grass. This aid in water retention and weed control which is necessary because onions have shallow root system and do not do well with competition from weeds. Weeding is constant throughout the life of the crop.

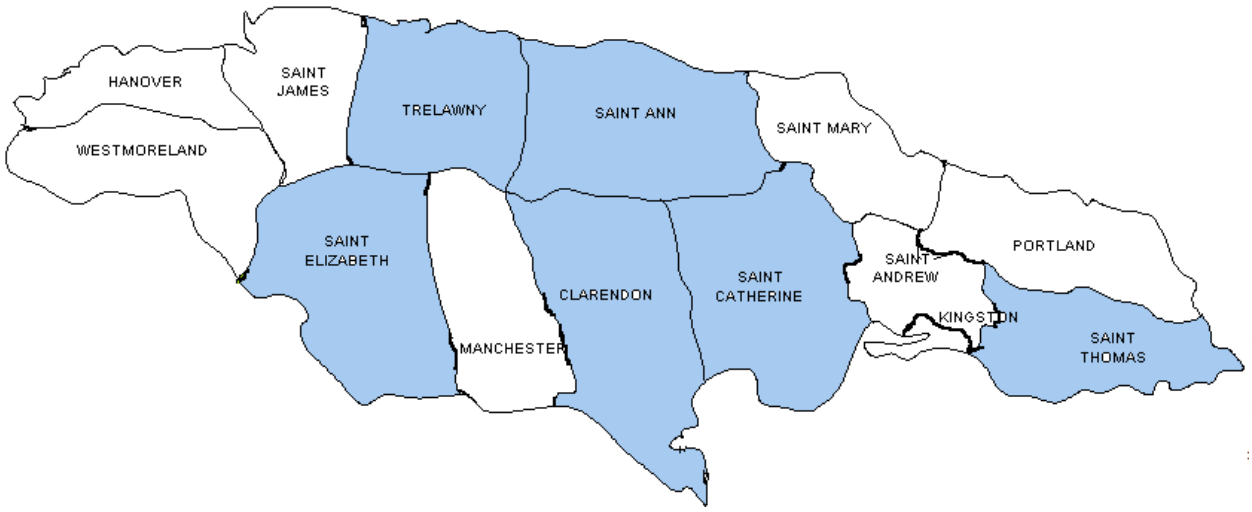
GROWING CONDITION

Onions can be grown on many soil types ranging from sandy loam and muck to heavy clay with high natural fertility and slightly acid to neutral acidity of pH 6.0-7.0. Onions grows best in cool weather and bright sunlight away from shade. It grows best in temperature of 24ºC.

Fertilization

Fertilizer is applied in the ratio 14:28:14 or 11:22:22 two to three times during the life of the crop and side dress with sulphate of ammonia.

AREAS OF ONION PRODUCTION IN JAMAICA



The highlighted areas on the map show the parishes where onions are mainly grown.

PEST LIST

Pest	Common Name	Affected Organ	Present on Commodity	Reference (s)
INSECT				
Thrips tabaci	Onion thrips	Leaves	No	R & D
Liriomyza huidobrens	Leave miner	Leaves	No	RADA
Spodoptera exigua	Beet army worm	Leaves (entire)	No	Williams 2000
FUNGI				
Alternaria tennuissima	Nailhead spot	Leaves	No	Williams 2000
Alternaria porri	Purple blotch	Leaves	No	Williams 2000
Botrytis cinerea	Grey mould rot	Leaves, stem, fruit	Yes	Williams 2000
Stemphyllium vesicarium	Onion leaf blight	Leaves	No	Williams 2000
Pleospora herbarum	Leave blight of onion	Leaves	No	Williams 2000
BACTERIA				
Erwinia sp.	Bacterial wilt	Fruit	Yes	R & D
NEMATODE				
Meloidogyne spp.	Root knot nematode	Root	No	Williams 2000
Criconemoides sp.	Ring nematode	Root	No	Williams 2000
Ditylenchus sp.	Stem and bulb nematode	Root	No	Williams 2000
Helicotylenchus sp	Spiral Nematode	Root	No	Williams 2000
Pratylenchus sp	Root lesion nematode	Root	No	Williams 2000

Pest	Common Name	Affected Organ	Present on Commodity	Reference (s)
Rotylenchulus sp	Reniform nematode	Root	No	Williams 2000
Tylenchorhynchus sp.	Stunt Nematode	Root	No	Williams 2000
Tylenchus sp.	Nematode	Root	No	Williams 2000

R&D- Research and Development, Ministry of Agriculture and Fisheries. Jamaica

RADA- Rural Agricultural Development Authority

MITIGATIONS

Pest Management Strategies

Farmers are encouraged to take an integrated approach towards pest management; however chemical treatment is mostly used. Chemicals give faster results. The chemicals that are mostly used in onion production in Jamaica on pests are listed below:

Insects

Thrips- (Yellow or White sticky trap, Abamectin, Acetamiprid)

Leaf miner- (Trigard, Abamectin)

Armyworm- (Acetamiprid, Abamectin, *Bacillus thuringiensis*, Fenpropathrin, Methomyl)

Fungi/Bacteria

Copper hydroxide, Copper sulphate, Mancozeb, Matalaxyl, Thiophanate, Azoxystrobin

Nematode

Any appropriate nematicide

Weeds

Linuron- Post emergence when onion is 15cm with 3 or more true leaves.

Terbutryn- Pre emergence

Fluazifopbutyl

Glyphosate- Pre-sowing, pre-transplanting

Harvesting

Onions do not produce new leaves after they are matured. The drying down of the leaves is an indication that the onions are ready to be harvested. Irrigation is ceased prior to harvesting (approximately 3 weeks). Harvesting is done manually in Jamaica. This is achieved by hand pulling the onions by the stem and left them along the row to dry. This is however not always the case; predial larceny is a problem in Jamaica so leaving onions in the field to dry is not always practice. Farmers who experience this problem would collect their onions from the field and put them at a place where they can be properly monitored. These places include ventilated building, on floors, on table tops and racks. Drying takes approximately 3 weeks. After the drying process onions are trimmed and left for few more days to cure.

Packaging

Onions are sorted at the packing house, onions that show any sign of rot will be removed. If further trimming is needed it is done. They are then packed in the special procured onion mesh bags (50 lbs).

Pre Export

Jamaica has never exported onion.

In Jamaica, exports are regulated by the Plant Quarantine/Produce Inspection Branch. The Branch is governed by two legal frameworks, The Plant Quarantine Act and The Agriculture Produce Act.

A sample size of the package containing the commodity will be opened and inspected by a Plant Quarantine Inspector to ensure that there are no breaches. If the export meets the required standards then a Phytosanitary certificate declaring the produce free from actionable pests will be issued.

REFERENCE

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