SUGAR INDUSTRY AUTHORITY - JAMAICA

POST CROP BOOKLET 2020

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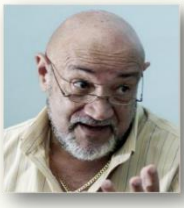

Mr. Allan Rickards

Ms. Stephanie Muir

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Variety Recommendations by Soil Type

Variety Recommendations for Harvesting Periods and Soil Types

Varieties recommended for Hanover & Westmoreland

		Soil Types		
Area	Harvest Periods	Light Soil	Clay Loam	Clay
Westmoreland and Hanover	Early	BJ7465	BJ7465	BJ7465
		BJ7015	BJ7015	BJ7015
		CR892023	CR892023	CR892023
		BJ7314	BJ7314	BJ8783
		BJ8783	BJ8783	BJ82105
		BJ82105	BJ82105	BJ7938
		BJ7938	BJ7938	BJ7452
		BJ7452	BJ7452	
		BJ78100	BJ78100	
	Middle	BJ7504	BJ7504	BJ7504
		BJ7015	BJ7015	BJ7015
		BJ7938	BJ7938	BJ7938
		BJ82119	BJ82119	BJ82119
		BJ7452	BJ7452	BJ7452
		BJ7465	BJ7465	BJ7465
		BJ82105	BJ82105	BJ82105
		BJ8783	BJ8783	BJ8783
		BJ78100	BJ78100	BJ78100
	Late	BJ7627	BJ7627	BJ7627
		BJ82119	BJ82119	BJ82119
		BJ8783	BJ8783	BJ8783
		BJ78100	BJ78100	BJ78100

Variety Recommendations for Harvesting Periods and Soil Types

Varieties recommended for Irrigated Clarendon & St. Catherine Plains

		Soil Types		
Area	Harvest Periods	Light Soil	Clay Loam	Clay
Irrigated Clarendon and St. Catherine Plains	Early	BJ7465	BJ7465	BJ7465
		BJ7015	BJ7015	BJ7015
		BJ7938	BJ7938	BJ7938
		BJ82119	BJ82119	BJ82119
		BJ82102	BJ82102	BJ82102
		BJ82105	BJ82105	BJ82105
		BT80311	BT80311	BT80311
		CR892023	CR892023	CR892023
		BJ8783	BJ8783	BJ8783
	Middle	BJ82119	BJ82119	BJ82119
		BJ7548	BJ7548	BJ7548
		BJ82102	BJ82102	BJ82102
		BJ78100	BJ78100	BJ8783
		BJ8783	BJ8783	BJ7504
			BJ7504	
	Late	BJ7627	BJ7627	BJ7627
		BJ8783	BJ8783	BJ8783
		BJ78100	BJ78100	

Variety Recommendations for Harvesting Periods and Soil Types cont.

Varieties recommended for Upper St. Catherine & Upper Clarendon

		Soil Types		
Area	Harvest Periods	Light Soil	Clay Loam	Clay
Upper St. Catherine and Upper Clarendon	Early	BJ7015	BJ7015	BJ7015
		BJ7465	BJ7504	BJ7504
		BJ7314	BJ7314	BJ7314
		BJ7465	BJ7465	BJ7465
		BJ7627	BJ7627	BJ7627
		CR892023	CR892023	CR892023
		BT80311	BT80311	BT80311
	Middle	BJ7465	BJ7465	BJ7465
		BJ82119	BJ82119	BJ82119
		BJ7262	BJ7262	BT80311
		BT80311	BT80311	
	Late	BJ7627	BJ7627	BJ7627
		BJ8783	BJ8783	BJ8783
		BJ7015	BJ7015	BJ7015

Variety Recommendations for Harvesting Periods and Soil Types

Varieties recommended for St. Thomas

		Soil Types		
Area	Harvest Periods	Light Soil	Clay Loam	Clay
St. Thomas	Early	BJ7465	BJ7465	BJ7465
		BJ7938	BJ7938	BJ7938
		CR892023	BJ7452	BJ7452
		BJ8783	BJ7627	BJ7627
		BT80311	BJ7314	BJ7314
			BJ82105	BJ82105
			CR892023	CR892023
			BJ8783	BJ8783
			BT80311	BT80311
	Middle	BJ7938	BJ7627	BJ7627
		BJ82105	BJ7938	BJ7938
		BJ82119	BJ82105	BJ82105
		BJ8783	BJ82119	BJ82119
		BJ7504	BJ8783	BJ8783
		BT80311	BJ7504	BJ7504
		BJ78100	BT80311	BT80311
			BJ78100	
	Late	BJ7627	BJ7627	BJ7627
		BJ8783	BJ8783	BJ8783
		BJ7938	BJ7938	BJ7938
		BJ78100	BJ78100	

Variety Recommendations for Harvesting Periods & Soil Types

Varieties Recommended for St. Elizabeth

		Soil Types		
Area	Harvest Periods	Light Soil	Clay Loam	Clay
St. Elizabeth	Early	BJ7314	BJ7314	BJ7314
		BJ7015	BJ7015	BJ7015
		BJ7938	BJ7465	BJ7465
		BJ78100	BJ7938	BJ7938
		CR892023	BJ78100	CR892023
		BJ82105	CR892023	
			BJ82105	
	Middle	BJ7262	BJ7465	BJ7465
		BJ7465	BJ82105	BJ82105
		BJ82105	BJ7504	BJ7504
		BJ7938	BJ7938	BJ7938
		BJ7627	BJ7627	BJ7627
		BJ82105	BJ82105	
		BJ78100	BJ78100	
	Late	BJ7465	BJ7465	BJ7465
		BJ7627	BJ7627	BJ7627
		BJ7314	BJ7314	BJ7314
		BJ82105	BJ82105	
		BJ78100	BJ78100	

Variety Recommendations for Harvesting Periods and Soil Types

Varieties recommended for Trelawny, St. James and St. Ann

		Soil Types		
Area	Harvest Periods	Light Soil	Clay Loam	Clay
Trelawny, St. James and St. Ann	Early	BJ7465	BJ7465	BJ7465
		BJ82119	BJ82119	BJ82119
		CR892023	BJ7504	BJ7504
		BJ78100	CR892023	CR892023
		BJ7938	BJ78100	BJ7938
		BJ7015	BJ7938	BJ7015
		BJ7548	BJ7015	BJ7548
		BJ8783	BJ7548	BJ8783
			BJ8783	
	Middle	BJ82119	BJ82119	BJ82119
		BJ7548	BJ7504	BJ7504
		BJ7627	BJ7465	BJ7465
		BJ78100	BJ7548	BJ7548
		BJ7938	BJ7627	BJ7627
		BJ8783	BJ78100	BJ7938
			BJ7938	BJ8783
			BJ8783	
	Late	BJ7627	BJ7627	BJ7627
		BJ8783	BJ8783	BJ8783
		BJ78100	BJ78100	BJ82119
		BJ82119	BJ82119	BJ7015

Cane Production and Harvesting Data

Rainfall Data (mm)

Rainfall Total for Cane-growing Areas (mm) 2018 - 2020

Extension Area	2018	2019	2020
Appleton	1249	887	997
Bernard Lodge	754	551	67.9
Trelawny & St. James	49	-	210
Frome	1,502	1097.8	1049.4
Golden Grove	1315	471	0
Monymusk	433	718	394
Worthy Park	795	567	126

Total Area Affected by Illicit Fires: 2019/20 Crop

	Estate			Farmers		
Area	No. of Fires	Hectares	Tonnes	No. of Fires	Hectares	Tonnes
Frome 2020	175	546.11	27632	25	132.08	**4100**
Appleton	1	10	482	10	84	**5490**
W/Park				3	3	**70**
Monymusk	1	6	120	1	4	**200**
L/ Pond						
B/Lodge				1	4	**200**
Total	**177**	**562.11**	**28,232**	**40**	**227.08**	**10,060**

Tonnes Stand Over Cane: 2019/20

Extension Area	Estate	Farmers	Total
Appleton	0	3000	3,000
Worthy Park	0	2000	2,000
Monymusk	0	0	
Frome	12000	4000	16,000
Long Pond	0	0	
Bernard Lodge	0	1000	1,000
Total	12000	10,000	22,000

Cane Productivity for Farmers and Estates: 2019/20 Crop

Cane Productivity 2019/20 Crop						
Extension Area	Farmers			Estates		
	Production (tonnes)	Ha Reaped	Tc/ha	Production (tonnes)	Ha Reaped	Tc/ha
Appleton	44,189.00	786.00	56.22	62,592.00	800.00	78.24
Long Pond	4,955.00	330.00	15.01	0	0	0
Frome	52,835.05	1225.87	43.65	127,917.58	2,760.81	58.29
Worthy Park	44,497.00	918.00	48.47	122,158.00	1,907.00	64.05
Total/Av.	146,476	3,259.8	40.8	312,667.58	5467	66.66

Sugar Productivity for the 2019/20 Crop

Extension Area	Hectares Reaped 2019/20			Sugar Produced 2019/20	
	Estate	Farmers	Total	Total	Ts/Ha
Appleton	800	786	1586	10,460	6.60
Long Pond	0	330	330		
Frome	2,760.81	1225.87	3986.68	11,168	2.80
Worthy Park	1,907.00	918	2825	22,319	7.90
Total/Av.	5467	3,259.80	8726.8	43,947	5.04

Preliminary data as at Sept. 2020

Number of Farmers Supplying Cane: 2019 vs 2020

Factory Area	2019	2020	Variance	% Change
Appleton	499	354	145	-30
Frome	545	448	97	-21
Worthy Park	773	600	173	-27
Monymusk	320	211	109	-50
Long Pond	100	45	55	-120

Cane Ground: Tonnes Sugar and Tonnes Cane per Tonnes Sugar

	Cane Ground		Tonnes Sugar		TC/TS	
	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20
Appleton	164,896	141223	10,925	10,691	9.84	9.58
Frome	240,813	180,742	17,288	11,168	10.75	11.83
W/ Park	214,734	169556	23,619	22,343	8.52	8.82
Total	620,443	491,521	51,832	44,202	29.11	30.23

Total Hectares Planted by Farmers and Estates 2018 - 2020

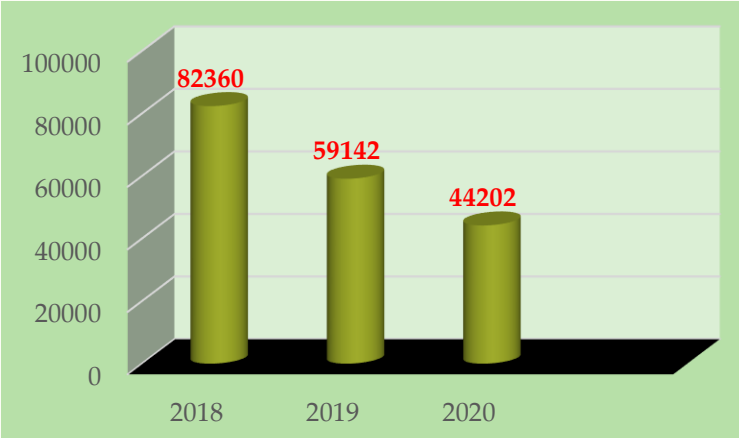
Area	2018			2019			2020		
	Est.	Far.	Total	Est.	Far.	Total	Est.	Far.	Total
Appleton	56	55	**111**	132	31	**163**	0	32.4	32.4
B/L & Bog Walk	40	0	**40**	40	0	**40**	0	100	100
Trelawny & St. James	0	2	**2**	40	0	**40**	0	0	0
Frome	443	74	**517**	62	21	**83**	102.04	90.5	192.9
G/Grove	27	35	**62**	0	0	**0**	0	0	0
M/musk	100	4	**104**	160	0	**160**	0	210	210
W/Park	132	56	**159**	39	23	**62**	139	16	155
TOTAL	**798**	**226**	**995**	**473**	**75**	**548**	241.04	448.9	690.3

Factory Performance Statistics

Industry Cane and Sugar Production for the Years 2018 - 2020

Crop Year	Cane Ground for Sugar (t)	96° Sugar Made (t)	TC/TS
2018	1,021,468.00	82,360.00	12.40
2019	736,788.00	59,142.00	12.46
2020	519,069.95	44,202.00	11.81
3-Year Avg.	759,108.65	61,816.29	12.28

Jamaica's Sugar Production 2018 – 2020



Cane Ground and Sugar Production by Factories 2018 - 2020

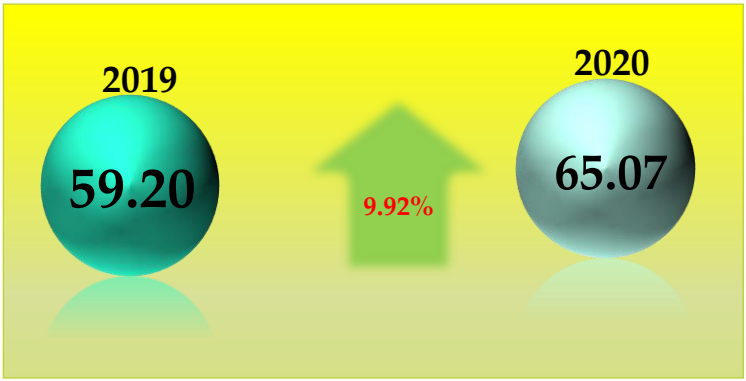
Factory	2019/20	
	Cane Ground for Sugar (t)	96° Sugar Produced (t)
Appleton	137,790.51	10,691
Frome	185,349.10	11,168
G/Grove	0	0
M/musk	0	0
W/Park	195,930.34	22,319.11
Total	**519,069.95**	**43,947.00**

Factory	2018/19	
	Cane Ground for Sugar (t)	96° Sugar Made (t)
Appleton	164,896	10,925
Frome	240,813	17,288
G/Grove	116,345	7,310
W/Park	214,734	23,619
Total	**736,788**	**59,142**

Factory	2017/18	
	Cane Ground for Sugar (t)	96° Sugar Made (t)
Appleton	214,350	16,480
Frome	327,098	23,275
G/Grove	139,731	10,248
M/musk	104,192	8,105
W/Park	238,814	24,251
Total	**1,024,185**	**82,360**

- *The Everglades Factory (Long Pond) did not operate for the 2017-2020 crops.*
- *The Monymusk Factory did not operate for the 2018/20 Crop.*

Time Efficiency



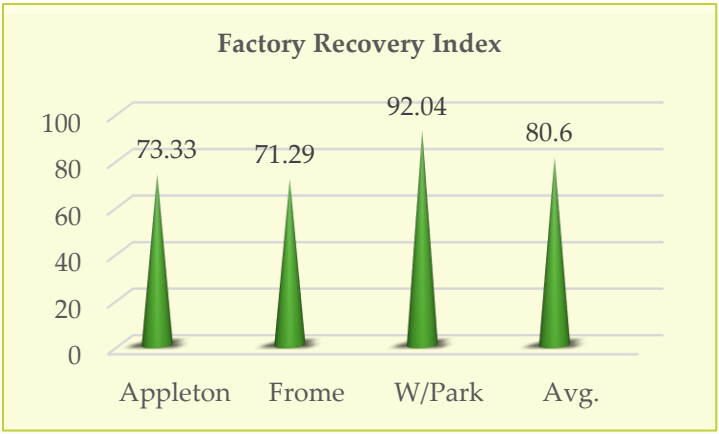
Time Account

Industry Lost 34.93% operating time

Major Causes:

- **Short Deliveries of canes -12.03%**
- **Mechanical 7.11%**
- **Maintenance-4.65%**
- **Premeditated stops -3.35%**
- **Weather – 2%**

Factory Efficiencies



Impact of Efficiency on Sugar Produced

Factory	Actual Sugar (Ton)	Sugar @91 FRI (Ton)	Sugar Loss	Actual FRI	Loss/Gain ($)
Appleton	10,460	13,268	(2,808)	73.33	(224,640,000)
Frome	11,168	14,255	(3,087)	71.29	(246,960,000)
W/Park	22,319	22,092	227	92.04	(18,160,000)
Total Avg.	43,947	49,615	(5,668)	80.60	(453,440,000)

Factory Recovery Index (FRI) by Factories (2018 - 2020)

Factory	FRI		
	2019/20	2018/19	2017/18
Appleton	73.33	63.14	80.24
Frome	71.29	77.54	81.86
G/Grove	-	65.97	81.62
M/musk	-	-	73.14
W/Park	92.04	93.67	95.51
Averages	**80.60**	**77.96**	**83.49**
Standard FRI	**91.00**	**91.00**	**91.00**

Jamaica Recoverable Cane Sugar (JRCS) by Factories (2018 - 2020)

Factory	JRCS		
	2019/20	2018/19	2017/18
Appleton	10.44	10.16	9.62
Frome	8.45	9.30	8.76
G/Grove	-	9.60	9.17
M/musk	-	0.00	10.61
W/Park	12.39	11.74	10.63
Averages	**10.47**	**10.25**	**9.62**
Standard JRCS	**9.87**	**9.87**	**9.87**

Sugar Quality-2019/2020

Factory	Pol	Moisture	Insoluble Solid Mg/kg	Dextran (MAU)
Appleton	98.58	0.32	135.31	865.89
Frome	99.25	0.11	163.77	723.60
Worthy Park	99.45	0.17	80.56	244.51
Total/Avg	99.20	0.19	115.35	443.77
Market specs	≥ 98.50	≤ 0.35	≤ 500	≤ 250

Brown Sugar Sales

Marketing Agent	Sugar Sales 2019	Sugar Sales 2020
Appleton	5,746	8,044.77
Pan Caribbean	11,467	11,349.96
Golden Grove	7,378	488.00
Ja. Cane Prod. Sales	2,713	-
Worthy Park	11,413	15,850.71
Total	38,717 *Dec 2019	35,733.44 *Dec 2020

Cane and Sugar Price at 4th Payment: 2019/2020 Crop

	Farmers	Estate	Total
Canes Delivered	207,703.00	314,799.00	522,502.00
	Appleton	Worthy Park	PCSC
Cane Price per Tonne	6,581.92	8,265.44	4,703.76
Sugar Element	6.082.25	7,849.88	4,082.30
Molasses	499.66	415.55	621.46
	Appleton	Worthy Park	Frome
Price/Tonne Sugar	99,122.00	99,199.00	94,302.00

** Canes delivered to distillery 2,502.00 tonnes*

Pest and Disease Management

Bio-Control of Sugarcane Moth Borer

Damage caused by larvae of the sugarcane moth borer, *Diatraea saccharalis*, the key insect pest of sugarcane in Jamaica, continues to be an important source of yield loss incurred by Jamaican sugarcane farmers. The larva of the sugarcane borer is the destructive stage of the moth. All varieties of sugarcane currently grown in Jamaica are susceptible, but sugarcane varieties respond differently to damage and yield losses.

Management of *Diatraea spp*. in many sugarcane regions has largely focused on biological control. In 1970, *Cotesia flavipes*, a wasp, was imported, reared and released. It was not until 1983 that establishment of this bio-control agent was achieved. *Cotesia* rapidly became the dominant parasitic species of the borer with 59% parasitism.

In 2018, the Entomology lab at SIA-RD produced over 30,000 wasps locally and imported 350 thousand. These wasps were released across all cane growing ecosystem around the island with majority of the releases focused on the hotspot areas in Clarendon and St Catherine. Production of *Cotesia* continues with the aim of using this bio-control method to reduce negative effects of the stalk borer across the Industry.

In 2019, *Cotesia* (wasp) production was increased to over 50,000. The idea is to provide a robust and scalable Industry support mechanism in a pro-active manner.

BIOSECURITY ALERT

The sugarcane stalk borer poses a real threat to sugarcane in Jamaica. Cane growers in Clarendon and St. Catherine you are at a higher risk!

Help us to identify damage and different life stages of the pest as illustrated below:

Borer entry and exist holes

Borer tunneling

Dead heart symptom

Adult

Eggs

Pupae

Larva

If you find damage or larvae, please inform your local Extension Officer or an Entomologist at the SIA-RD

Extreme borer damage

We thank you for helping to keep track of this pest!

Sugar Industry Authority – Research Division, Kendal Road , Mandeville, Tel: (876) 962-2241, Fax: (876) 962-1288, Email: sirijam@cwjamaica.com

Towards the end of the year, orange rust leaf severity at Worthy Park was 6%, as opposed to the onset of the disease which, in June 2019, showed a leaf severity of 24%. The severity of the disease is determined by:

- **Weather conditions -** germination of the orange rust spore requires temperature between 11°C – 23°C and a relative humidity >97%.

- **Zone of field canopy affected –** Greatest yield effects occur when younger green leaves (upper four) in the shoot show obvious disease.

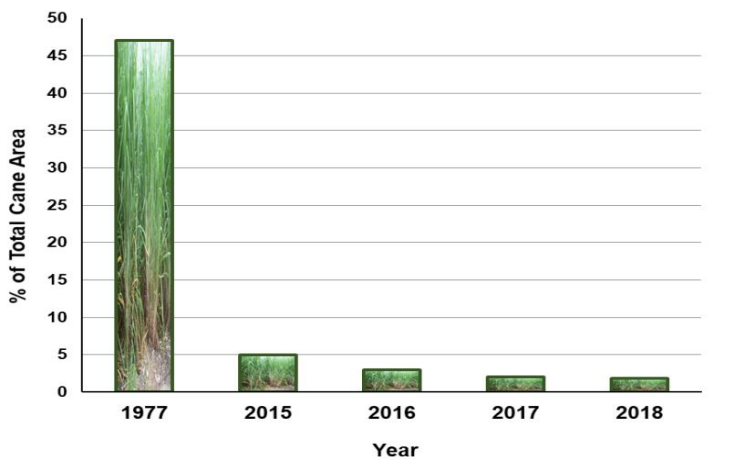
- **Varietal resistance –** has very significant effect on the potential to resist the fungus.

Major Diseases of Economic Importance to the Sugarcane Industry

- The impact of Smut disease within the sugarcane industry has been reduced to 2% of sugarcane area island-wide. The reduction of the impact is due mainly to replacing susceptible varieties with newer, tolerant, varieties and proper disease management on farms.

- Known susceptible varieties such as BJ9186, BJ7230 and BJ8226 have been replaced across the Industry.

Sugarcane area affected (%) by Smut Disease Year 1977 vs. years 2015 -2018



Industry Services

Tests Conducted by the SIA-RD Central Laboratory

The SIA-RD Central Laboratory continued to serve the needs of the Industry by conducting tests across several areas.

❑Sugar methods:
Polarisation, moisture, reducing sugars, sugar colour (affined and whole raw), dextran, ash, insoluble solids, grain size, and starch.

❑Wastewater methods (Ministry of Health approved): pH, total suspended solids (TSS), alkalinity, total dissolved solids (TDS), nitrates (NO_3), phosphates (PO_4), and total nitrogen.

❑Soil analyses:
pH, nitrogen (N),
Phosphorous (P),
Potassium (K),
Sodium (Na),
Calcium (Ca), Boron (B), organic matter, cation exchange capacity (CEC), texture, electrical conductivity (EC), and salinity.

Tests Conducted by the SIA-RD Central Laboratory

- Irrigation water: pH, electrical conductivity (EC), total dissolved solids (TDS), alkalinity, nitrates (NO_3), phosphates (PO_3), sulphates (SO_4), sodium (Na), Potassium (K), Boron (B), Chloride (Cl), Carbonate (CO_3), Bicarbonate (HCO_3), Calcium (Ca), and Magnesium (Mg).
- Molasses analysis: polarisation (pol), brix, ash
- Leaf analysis: nitrogen (N), phosphorous (P), potassium (K), and boron (B).

Starch test on Sugar

Dying sugar under vacuum for grain size

Other Information

Sugar Organisations in Jamaica

- **All Island Jamaica Cane Farmers' Association (AIJCFA)** is the body incorporated by the cane farmers to promote, foster, and encourage the growing of canes.
- **Cane Expansion Fund (CEF)** is the body charged with managing the revolving loan fund for cane growing and expansion.
- **Gruppo Campari** is the owner of the Appleton Sugar Factory which is a private large-scale producer of cane and a manufacturer of sugar.
- **Jamaica Association of Sugar Technologists (JAST)** is an umbrella organization for Jamaica's sugar industry professionals.
- **Pan Caribbean (PCSC)** is the operator of the Frome and Monymusk Sugar factories; the entity also markets the sugar produced.
- **Seprod Ltd** is a manufacturing conglomerate and the owner of Golden Grove Sugar Factory. Seprod is a marketing agent for the sugar produced by Golden Grove.
- **Sugar Industry Authority (SIA)** is a statutory body within the Ministry of Industry, Commerce, Agriculture and Fisheries with powers to regulate the Industry.
- **Sugar Manufacturers Corporation of Jamaica (SMCJ)** is the umbrella organization of sugar factories.
- **Sugar Producers' Federation (SPF)** deals with the industrial relations and staff welfare matters of the sugar manufacturers.
- **Worthy Park Estate Ltd.** is a private, medium-scale producer of cane and a manufacturer and marketing agent of sugar.

SUGAR INDUSTRY AUTHORITY

For further information and queries, direct concerns to:

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