# Issue: 45 October, 2016

This bulletin is prepared by the Hydrometeorological Service of Guyana. We welcome feedback, suggestions and comments on this bulletin. Correspondences should be directed to: The Chief Hydrometeorological Officer (Ag), and the Agronomist.



# Hydrometeorological Service of Guyana

Farmer's Monthly Weather Bulletin

# HIGHLIGHTS

- Guyana was classified as Moderately Dry (MD) for the month of September, 2016.
- The highest one day rainfall total was recorded in Capoey Compound, Region 2 which recorded 121.9 mm of rainfall on September 7, 2016.
- Regional Classification for the month showed that Region 7 recorded the highest mean rainfall total of 234.4 mm with 13 rain days.
- Lethem, Region 9 recorded the highest daily temperature of 35.5 °C on the 24<sup>th</sup>, 26<sup>th</sup> -29<sup>th</sup> September, 2016.
- Kamarang, Region 7 recorded the lowest daily temperature of 19.4°C on September 6, 2016.
- Above Normal rainfall conditions predicted for October through December.
  - Above-normal to near-normal temperature conditions predicted for October through December.
- La Niña is favoured to decrease in the coming months.



## **Rainfall Overview for September, 2016**

Guyana was classified as moderately dry (MD) for the month of September, with a monthly average rainfall of 127.8 mm across the country with 9 rain days. The highest monthly rainfall total was recorded at Soesdyke Forestry station, Region 4 which recorded 339.6 mm of rainfall and 14 rain days, while the lowest monthly rainfall total was recorded at Bush Lot, Region 5 with a total of 8.4mm of rainfall with 2 rain days. The highest one day rainfall was recorded Capoey Compound, Region 2 with 121.9 mm on September 7<sup>th</sup>, 2016. Most of the stations recorded near normal rainfall conditions, stations in Region 2, 3, 7 and 10 recorded rainfall totals above their long-Averages.



Figure1: Comparison of the accumulated rainfall and the long-term averages for selected stations for September, 2016.



Figure 2: Rainfall Distribution for September, 2016.

Regions	Regional Average (mm)	Average Rain days	Classification	Remarks
1	206.7	11 days	Moderately Wet (MW)	Mabaruma recorded 261.8 mm of rainfall with 14 rain days.
2	199.5	11 days	Moderately Wet (MW)	Anna Regina recorded 101.0 mm of rainfall with 9 rain days.
3	165.4	11 days	Moderately Wet (MW)	Lenora recorded 125.5 mm of rainfall with 12 rain days.
4	122.1	10 days	Moderately Dry (MD)	Timehri recorded 174.7 mm of rainfall with 16 rain days.
5	39.5	5 days	Very Dry (VD)	Bush Lot recorded 8.4 mm of rainfall with 2 rain days.
6	64.5	5 days	Dry (D)	New Amsterdam recorded 55.3 mm of rainfall with 6 rain days.
7	234.4	13 days	Wet (W)	Kamarang recorded 170.8 mm of rainfall with 13 rain days.
8	134.0	16 days	Moderately Dry (MD)	Mahdia recorded 137.3 mm rainfall with 14 rain days.
9	90.1	6 days	Dry (D)	Deer Creek recorded 79.5 mm of rainfall with 4 rain days.
10	148.7	12 days	Moderately Dry (MD)	McKenzie recorded 233.1 mm of rainfall with 13 rain days.

# **Table 1: Classification of Regional Average Rainfall Data for**

# **Sunshine Hours Summary for September, 2016**

Lethem, Region 9 and Georgetown Region 4 recorded the highest monthly mean sunshine hours with a total of 8.2 hours. The highest one day total of 11.3 sunshine hours was recorded on September 1<sup>st</sup> at Kaieteur Region 8. New Amsterdam recorded the lowest mean sunshine hours with a total of 7.2 hours.



Figure 3: Comparison of the mean sunshine hours and the long-term averages for selected stations for September, 2016.

## **Temperature Overview for September, 2016**

For the month of September, the highest one day temperature was recorded at Lethem, Region 9 with a total of  $35.5^{\circ}$ C on September 24<sup>th</sup>, and 26<sup>th</sup>-29<sup>th</sup>. Lethem also would have recoded the hottest week so for the year with temperatures above 35°C for (9) consecutive days from September 20<sup>th</sup>, and 22<sup>nd</sup>-29<sup>th</sup>. Lethem also recorded the highest mean maximum temperature of 33.8°C. The highest mean minimum temperature was recorded at Timehri, Region 4 with a value of 29°C. Ogle, Region 4 recorded the highest one day minimum temperature of 26.2°C on September 29<sup>th</sup>, 2016.



**Figure 4:** Comparison of the long-term averages and mean maximum temperatures for selected stations for September, 2016.



Figure 5: Comparison of the long-term averages and mean minimum temperatures for selected stations for September, 2016

# **Comparison of Evapotranspiration (ET<sub>O</sub>) Totals for selected stations, September 2016**

Georgetown recorded the highest average daily evapotranspiration with a total of 3.9 mm along with the highest one day evapotranspiration total of 4.7 mm on the September  $22^{nd}$ . Lethem recorded the lowest daily average evapotranspiration total of 2.2 mm and the lowest one day evapotranspiration total of 0.2 mm on September  $13^{th}$ . A comparison can be seen in figure 6 below.



Figure 6: Comparison of the Reference Evapotranspiration of selected stations for September, 2016.

**Note:** The calculated reference evapotranspiration method of Penman - Monteith, which assumes an unlimited water supply, depends on temperature, relative humidity, wind, and generally provides a better representation of crop-water losses and requirements.

### **The Standardized Precipitation Index**

The Standardized Precipitation Index (SPI), developed by T.B. McKee, N.J. Doesken, and J. Kleist in 1993, is based only on precipitation. One unique feature is that the SPI can be used to monitor conditions on a variety of time scales namely 1<sup>-</sup> month, 3<sup>-</sup>month, 6<sup>-</sup>month, 9<sup>-</sup>month and 12<sup>-</sup>month periods. This temporal flexibility allows the SPI to be useful in both short-term agricultural and long-term hydrological applications. Tables 2 and 3 below show the 3<sup>-</sup>month generated SPI values and categories for stations along the Coastal Plain of Guyana. An interpolated map of these SPI values can be seen in Fig. 7 below. The SPI is based entirely on monthly precipitation accumulations and its values can be compared across different climatic and geographic regions. A drought event is defined when the SPI is continuously negative and reaches a value of -1.0 or less, and continues until the SPI becomes positive.

**Table 2:** The Standardized Precipitation Index for selected stations

Station Name	3 Months SPI Value (July, August ,September)
Georgetown	0.28
Uitvlugt	0.73
Wales	1.45
Enmore	0.07
Timehri	1.00
Blairmont	-0.35
Rose Hall	0.33
Albion	0.38
Skeldon	1.91

**Table 3:** The Standardized Precipitation IndexClassification Categories

SPI Values	Categories
0 to -0.4	Near Normal
-0.5 to -0.7	Abnormally Dry
-0.8 to -1.2	Moderately Dry
-1.3 to -1.5	Severely Dry
-1.6 to -1.9	Extremely Dry
-2.0 or less	Exceptionally Dry
0 to 0.4	Near Normal
0.5 to 0.7	Abnormally Wet
0.8 to 1.2	Moderately Wet
1.3 to 1.5	Severely Wet
1.6 to 1.9	Extremely Wet
2.0 or more	Exceptionally Wet



Figure 7: The Standardized Precipitation Index for selected stations for October, 2016

### Seasonal Outlook for Guyana and the Caribbean for October - December, 2016

Guyana is currently in its primary dry season of 2016 (the long dry season). The latest forecast based on statistical models indicates that Guyana may experience wetter or similar to the usual rainfall conditions for the coming months with a 75% confidence. With this, Guyana will continue to see generally dry conditions over most parts of the country up until half of November. However, with the secondary wet season of 2016-2017 starting around mid-November in northern Guyana, there are indications that some heavy downpours will be observed, with a real potential for flash floods and flooding. Heat wise, initially it will still feel hot, with mostly above normal temperatures, but those temperatures may cool down to more comfortable values.



**Figure 8:** Precipitation forecast map for October-November-December 2016 showing the probalities of above Normal (A), Normal (N) and Below Normal (B) rainfall for Guyana within the context of the Caribbean.



**Figure 9:** Maximum temperature forecast map for October-November-December 2016 showing the probabilities of Above-Normal (A), Near-Normal (N) and Below-Normal (B) temperature for Guyana within the context of the Caribbean.

# **Table 4: Historical Average rainfall for selected rainfall stations**

Regions	Station Names	October	November	December	Regions	Station Names	October	November	December
1	MABARUMA *	****	210.2	246.9	5	BLAIRMONT	54.8	97.8	228.8
	WAUNA	207.0	212.0	245.3		MARDS	24.8	116.1	203.8
					6				
	PORT KAITUMA	160.7	190.4	270.8		ALBION	67.4	29.2	197
2	ANNA REGINA*	110.7	182.3	283.4		SKELDON	83.8	114.7	151.7
						CRABWOOD			
	CHARITY	101.3	212.6	285.5		CREEK*	53.3	92.3	98.1
	Mc NABB	123.9	185.0	247.3		ROSE HALL	57.4	84.2	266.6
	WAKAPOW	120.7	212.8	342.5		NIGG 58	75.7	84.9	177.1
	ONDERNEEMING	85.0	141.5	225.9		ALBION 33	51.2	60.4	162
3	BOERSARIE	139.9	205.2	345.8		<b>#73 VILLAGE</b>	78.9	101.7	174.5
						<b>#</b> 54			
	DeKENDEREN B	132.3	197.9	325.2		VILLAGE*	40.2	79.4	139.9
	DeKENDEREN F	127.1	158	302.2		ANKERVILLE	65.6	77.4	185.2
	LEONORA F	117.9	156.3	265.5		MIBIKURI	26.5	95.4	183
						MARA LAND			
	TROMODA D		100			DEV.	<b>T</b> O 0		
	LEONORA B	125	163	282.5		SCHEME*	59.3	95.1	165.9
	WATES	105 9	171 7	000 F			50 C	047	000
		125.5	1/1./	238.0	7		59.6	94.7	223
		113.6	143.9	257.7	· ·	ALAIWA	118.1	190.9	299.6
	LEGUAN"	88.3	113.2	205.6		MAZARUNI	147.7	171.7	197.1
4	BOTANIC					BARTICA			
	GARDENS	00.4	175.0	970 0			100.0	190.0	151 7
	TIMELIDI	89.4 129.6	1/0.9	270.9		STATION"	182.2	139.8	191.7
	IIMERKI	152.0	101.0	200.0		τα τα τα	107.8	175 7	157.8
					8	KAIETEUR	107.0	115.1	107.0
	CANE GROVE B	62.6	90.8	199 1	Ŭ	FALLS *	109.0	123.9	452.3
	CANE GROVE F	65.3	120	214.7	9	LETHEM	54.6	33.8	40.8
	L.B.I FRONT	73.8	140.5	246.3	Ŭ	KARASABAI	21.6	9	5.1
	OGLE FRONT	64.6	136.7	222.6		DADANAWA	45.5	57.5	37.6
	ENMORE FRONT	78	127.8	268.2	10				
						GREAT FALLS	110.3	152.5	221.2
	KAIRUNI*	84.4	130.7	121.6					
						WISMAR*	97.5	107.3	148.5

NOTE : The historical averages for various stations were calculated by the use of rainfall data from the year 1981- 2010 (climatological normals) except where less than 30 years of observations are available (stations denoted with \*).

### Table 5: Average rain days for the months October - December for selected stations

Station Name	October	November	December
Georgetown Botanical Gardens	8 days	12 days	18 days
Timehri Meteorological Station	11 days	14 days	11 days
Ogle	6 days	11 days	17 days
Lethem	5 days	3 days	4 days
Anna Regina	6 days	10 days	14 days
New Amsterdam	6 days	9 days	16 days

# Table 6: HIGH TIDE\* TABLE FOR OCTOBER, 2016

	HIGH TI	$DE \ge 2.74(m)$
Dates	Time	Height(m)
2016/10/01	03:52	2.94
	16:30	2.99
2016/10/02	04:26	2.93
	16:57	2.95
2016/10/03	04:59	2.89
	17:24	2.89
2016/10/04	05:32	2.82
	17:51	2.80
2016/10/13	01:32	2.83
	13:55	2.87
2016/10/14	02:20	3.01
	14:37	3.08
2016/10/15	03:07	3.14
	15:18	3.24
2016/10/16	03:54	3.21
	15:59	3.34
2016/10/17	04:42	3.22
	16:40	3.35
2016/10/18	05:29	3.15
	17:23	3.28
2016/10/19	06:18	3.02
	18:07	3.14
2016/10/20	07:11	2.83
	18:56	2.94
2016/10/26	13:49	2.78
2016/10/27	14:27	2.87
2016/10/28	02:21	2.75
	15:01	2.93
2016/10/29	02:58	2.79
	15:32	2.95
2016/10/30	03:33	2.82
	16:01	2.95
2016/10/31	04:06	2.82
	16:29	2.92

\*The term high tide refers to when tides are above or equal to 2.74 (m) above sea level

Spring Tides Tables are provided by the Maritime Administration Department









Last Quarter 22nd 15:13

Lunar calendar for October,2016

# Agricultural Review for September, 2016

Climatologically the primary rainy season ("May-June") transitions in mid-July to the primary dry season (long dry season). Despite the Moderately Dry (MD) conditions during September, there were no reports of significant impacts of the weather on Agricultural production.

# Farmer's Note for October, 2016

The Seasonal outlook for Guyana indicates that Guyana may experience wetter or similar to the usual rainfall conditions for the coming months. With this, Guyana will continue to see generally dry conditions over most parts of the country up until half of November 2016 and beyond that in the south. In addition, above-normal to near-normal temperatures are forecast for most parts of the country. Hence farmers are encouraged to take heed of the advisories of their regional agriculturists or extension officers, and to be vigilant and follow the Hydromet's daily and three day forecasts via the radio on 56.0 AM and on our website at <u>www.hydromet.gov.gv</u>.

Farmers are also advised to:

- Provide shade for plants that cannot withstand high temperatures and excessive sunlight.
- Shade should be provided for animals, in an effort to minimize heat stress.
- Mulch crops to support soil moisture retention to maintain healthy crop growth.
- Transplanting should be done preferably early in the morning and/or late in the afternoon.
- Farmers should take steps to conserve and prevent any wastage of irrigation water.
- When debeaking and administering any form of drugs to your animals, it should be done preferably early in the morning to prevent heat stress which aids in decreasing the mortality rate.
- Effective pasture management should be exercised during this period.
- Farmers and other stakeholders should take this opportunity to clean drains, trenches, canals, etc. in anticipation of the upcoming secondary wet season (short wet season) in the northern part of Guyana.

# Crop Of The Month: Jamun (black plum)

# Common Name:Jamun (black plum)Scientific Name:Syzygium cuminiTemperature:19°C - 27.5° CSoil pH:6.5-7.5

### Introduction

The jamun (black plum) stands colossal 30-35feet, it is a hardy fruit; in its native India the fruit also call jambul or jaam. The evergreen tropical tree flowering family mytraceae. They have a dark purple to almost black skin with a starkly contrasting pink or white flesh. The flesh is extremely juicy and has a flavor that combines sweet and tart with a slightly astringent after taste. This fruit contains one seed, when eaten the dark colored skin leaves a stain on lips and mouth that lasts for several hours. The tree also lives for 100 years.



### **Recommended Varieties**

- Purple
- Ram jamun (relatively larger)
- Pink lady (is light pink on the inside)



#### <u>Planting</u>

Jamun trees are propagated by both vegetative and seeds which retain viability for several months and germinate readily. The seedlings bear in 3 to 5 years. Vegetative propagation hastens production and should be more commonly practiced. Fresh seeds (10-15day can be sown 4-5cmdeep, distance25\*15cm, germinate 10-15days after sowing. Budded or grafted trees have been known to fruit one year after being set in the ground. In India, the jamun is sometimes inarched on seedlings.

### Health Benefits of Jamun

- Anti-diabetic features, convert starch into energy which keeps sugar levels check.
- Cures leucoderma after stimulating the melanin.
- Improve hemoglobin iron and vitamin C.
- Leaves treat ulcers; help prevent liver diseases like necrosis and fibrosis.
- The ploy phenolic compounds' are effective against cancer, heart disease, asthma and arthritis.
- Help cure kidney stones.

### Insect pests and diseases of Jamun

- Stem and limb die back
- Fungal disease (Anthracnose)
- Caterpillars

# October, 2016

### Harvesting/Storage

Fruit fall when ripe, can also be harvested manually. Once the fruit is ripe, when attempted to pick, it comes off easily. Fruits take 4-5 moths to ripen. Harvested daily shaking tree branches or hand picking, requires a number of picking. usually collected on polythene sheets. This is a highly perishable fruit thus cannot be stored more than 2 days at room temperature, last up to three weeks at low temperature  $(9 \pm 1 \circ c \text{ and } 85 \circ c)$ 90% RH).It is advised to store the fruit in perforated polythene or net bags ,once under refrigeration last up to 2 weeks.



### Fun Facts About Jamun

- Seeds are used as effective agent to treat acne.
- Prevent wrinkles.
- The leaves of the jamun tree strengthen teeth and gum.
- Gargling of bark helps in prevention of gum bleeding.
- Can be used as dye to stain clothing.



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# THE HYDROMETEOROLOGICAL

SERVICE OF GUYANA



### 18 Brickdam Stabroek Georgetown, Guyana

### E-mails:

agrodonessa@yahoo.com dwayne .lanferman@yahoo.com derkcritchlow@gmail.com Romallhector@live.com l\_peters71 @yahoo.com

Phone : 592-261-2284 592-261-2216 (24 hours National Weather Watch Centre numbers) Or Visit our Website: www.hydromet.gov.gy



# El Niño and La Niña Update

## ENSO Alert System Status: No Advisory

- ENSO-neutral conditions are present.\*
- Equatorial sea surface temperatures (SST) are near or below average in the east-central and eastern Pacific Ocean.
- ENSO-neutral conditions are slightly favored (between 55-60%) during the upcoming Northern Hemisphere September – December and December – March 2016-17.\*



Figure 12: CPC/IRI Early-Month Consensus ENSO Forecast Probabilities