Issue: 33

September, 2015

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

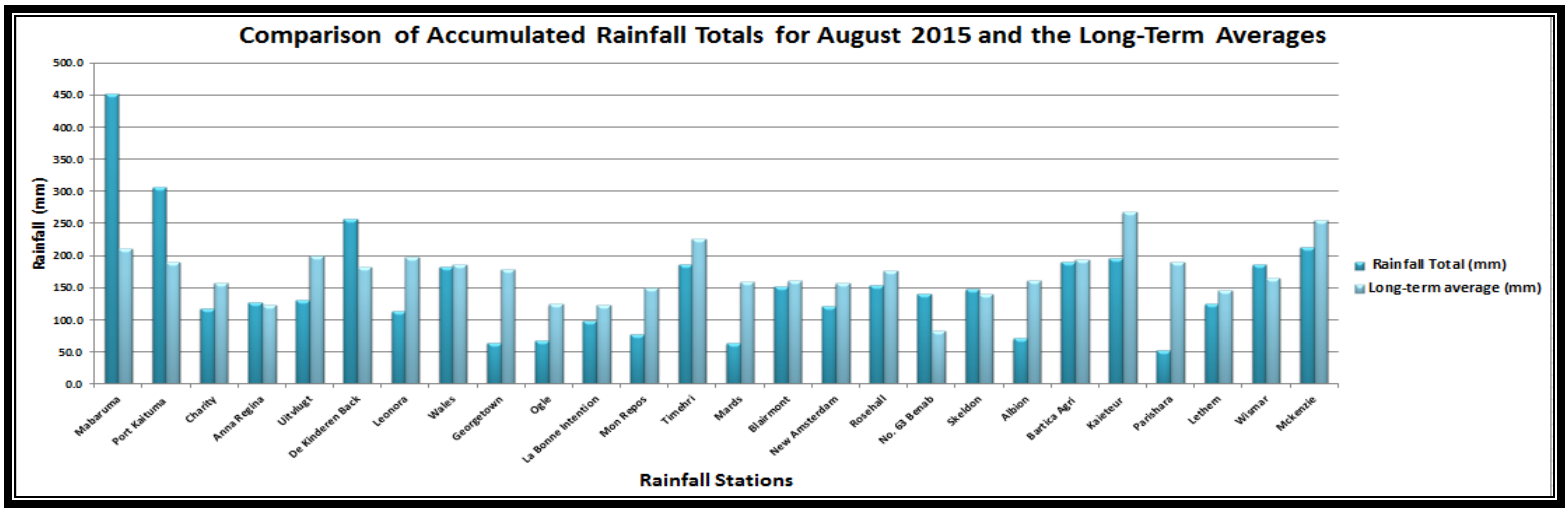
HIGHLIGHTS

- Guyana was classified as Moderately Dry (MD) for the month of August 2015 with an average of 142.1 mm of rainfall with 11 rain days.
- The highest one day rainfall total was recorded at Johanna South, Region # 6 , with 105.2 mm of rainfall on the 19th of August, 2015.
- Analysis of the ten administrative regions showed that Region #1 recorded the highest mean with 363.0mm of rainfall with 21 rain days.
- Lethem recorded the highest daily maximum temperature of 34^{0}C.
- Currently, Guyana is in its secondary dry season of 2015.
- Below normal to normal rainfall conditions predicted for September through November.
- Above normal to normal temperatures predicted for September through November.




Rainfall Overview for August, 2015

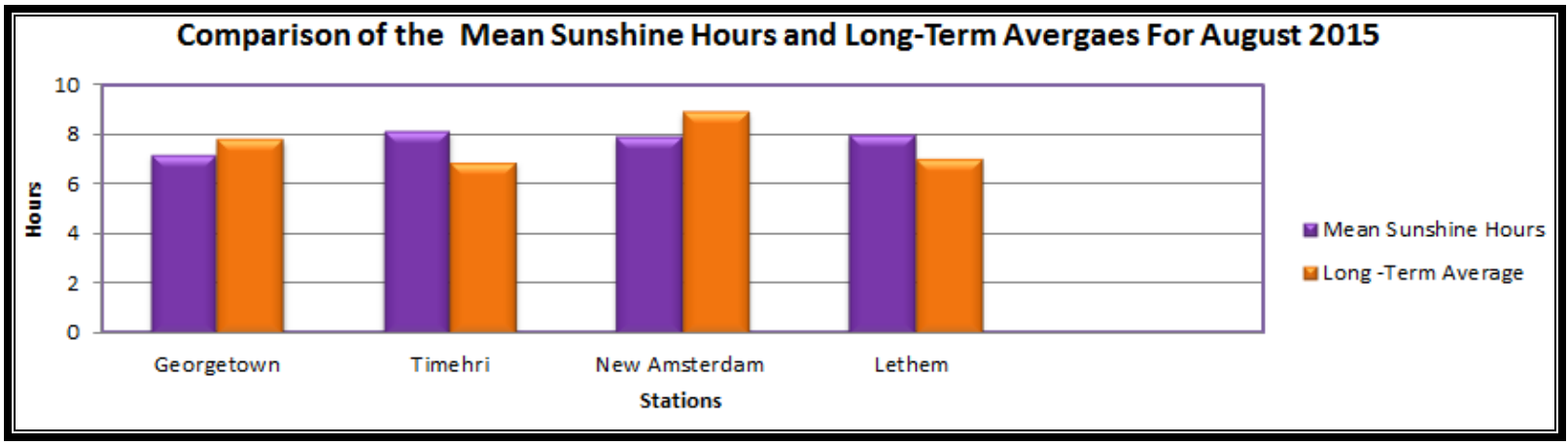
For the month, Regional Classification showed that Region 1 recorded the highest monthly average rainfall total of 363.0mm, with 21 rain days, whereas Region 5, recorded the lowest average monthly rainfall total of 89.4 mm of rainfall with 8 rain days. Mabaruma recorded the highest monthly rainfall total of 452.2mm with 20 rain days. Data analyzed thus far has revealed that most stations in Guyana recorded values below their long-term averages for the month. The graph below shows the comparison of accumulated rainfall and long-term averages for selected stations.



Fig#1: Comparison of the Accumulated Rainfall Totals and Long -term Averages of selected stations for August 2015.

Sunshine Hours Summary for August, 2015

Timehri recorded the highest mean sunshine hour of 8.1 hours for the month and the highest one day total of 11.3 hours on the 7th of August. Of the stations analyzed Lethem and Timehri were the only two stations that recorded mean sunshine hours above their long-term averages. Georgetown recorded the lowest mean sunshine hour of 7.2 hours, which was below it's climatological average by 0.6 hour.

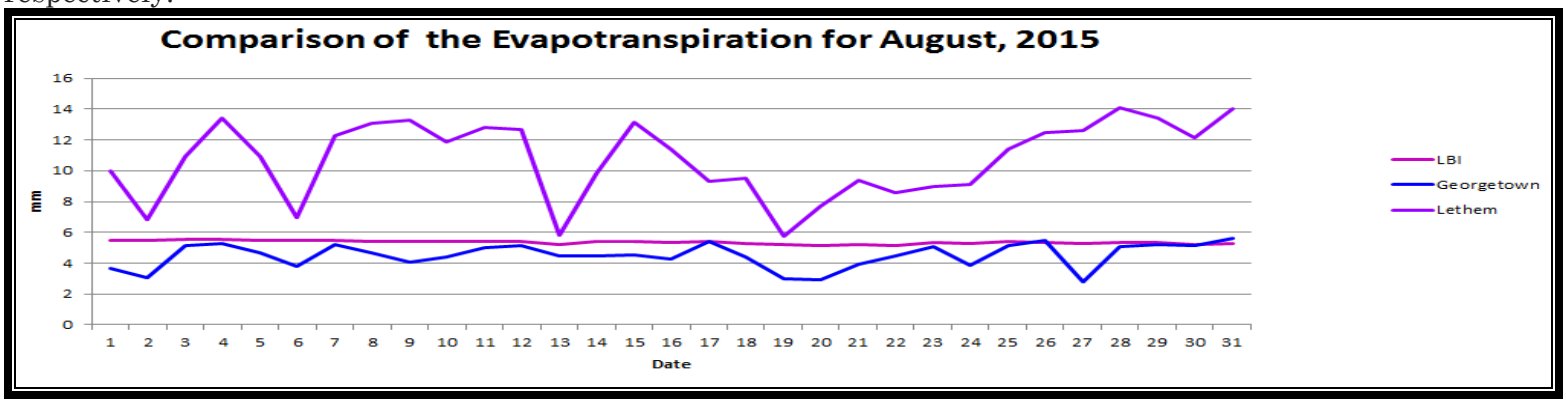


Fig# 2: Comparison of the Mean Sunshine hours with the Long-term Averages for selected stations for August 2015.

Table #1:Comparison of the Reference Evapotranspiration (ETo) for selected stations for the month of August,2015

Days	Georgetown	Lethem	La Bonne Intention
1	4	10	6
2	3	7	5
3	5	11	6
4	5	13	6
5	5	11	5
6	4	7	5
7	5	12	5
8	5	13	5
9	4	13	5
10	4	12	5
11	5	13	5
12	5	13	5
13	4	6	5
14	4	10	5
15	5	13	5
16	4	11	5
17	5	9	5
18	4	10	5
19	3	6	5
20	3	8	5
21	4	9	5
22	4	9	5
23	5	9	5
24	4	9	5
25	5	11	5
26	5	12	5
27	3	13	5
28	5	14	5
29	5	13	5
30	5	12	5
31	6	14	5

In the table above it can be observed that Lethem's evapotranspiration rate was generally higher than Georgetown and LBI. The highest one day evapotranspiration was recorded at Lethem with 14mm on Augsut 31, 2015, while the lowest one day evapotranspiration of 3mm was recorded on the August 2, 2015 at Georgetown. The average evapotranspiration for Georgetown, Lethem and LBI were 11mm, 4mm and 5mm respectively.



Fig# 3: Comparison of the Reference Evapotranspiration for selected stations.

Note: The calculated potential 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.

Table #2: Classification of Regional Rainfall Data for the Month of August, 2015

Region	Average Rainfall (mm)	Average Rain day	Classification	Remarks
1	363.0	21days	Wet (W)	Mabaruma recorded 452.2mm of rainfall with 20 rain days.
2	134.5	10 days	Moderately Dry (MD)	Kabakaburi recorded 217.8mm of rainfall with 18 rain days.
3	164.4	14 days	Moderately Wet (MW)	De kindren Back recorded 257.2mm of rainfall with 18 rain days.
4	111.3	11 days	Moderately Dry (MD)	Soesdyke Forestry recorded 221.0mm of rainfall with 10 rain days.
5	89.4	8 days	Dry (D)	Waterloo Berbice recorded 116.6mm of rainfall with 10 rain days.
6	102.8	8 days	Dry (D)	#63 Benab recorded 140.0mm of rainfall with 8 rain days.
7	276.6	18 days	Very Wet (VW)	Imbaimadai recorded 436.2mm of rainfall with 21 rain days.
8	Kaieteur recorded 196.5mm of rainfall with 19 rain days. Moderately Wet (MW)			
9	90.5	10 days	Dry (D)	Kumu recorded 166.9mm of rainfall with 12 rain days.
10	186.8	16 days	Moderately Wet (MW)	Mackenzie recorded 213.2mm of rainfall with 17 rain days.

Temperature Overview for August, 2015

For the month, the highest mean maximum temperature was recorded at Lethem Region 9 with 33.4^{0}C, this station also recorded the highest daily maximum temperature of 34^{0}C on the 04th of August, 2015. Georgetown and New Amsterdam recorded the highest average minimum temperature of 24.6^{0}C. Kaieteur recorded the lowest mean maximum temperature of 29.6^{0}C and New Amsterdam the lowest mean minimum temperature of 21.9^{0}C. Mabaruma recorded the lowest daily maximum and minimum temperature of 27.0^{0}C and 21.0^{0}C on August 14th and 18th respectively.

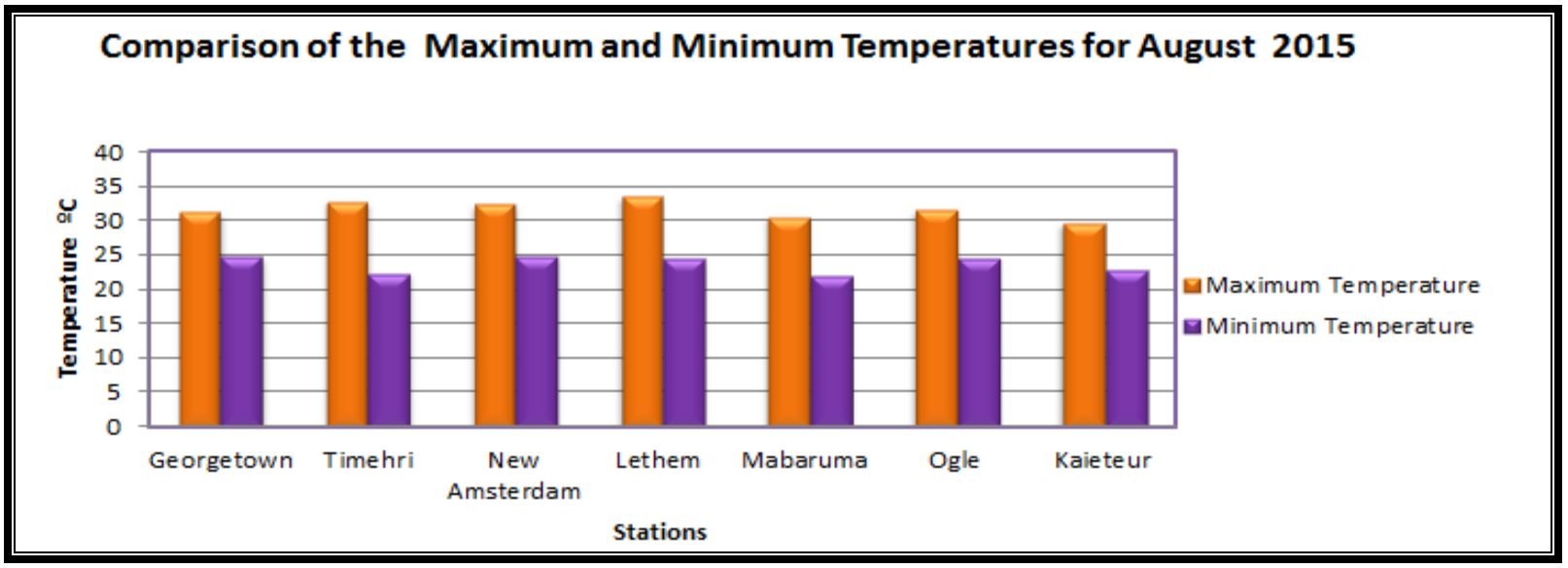
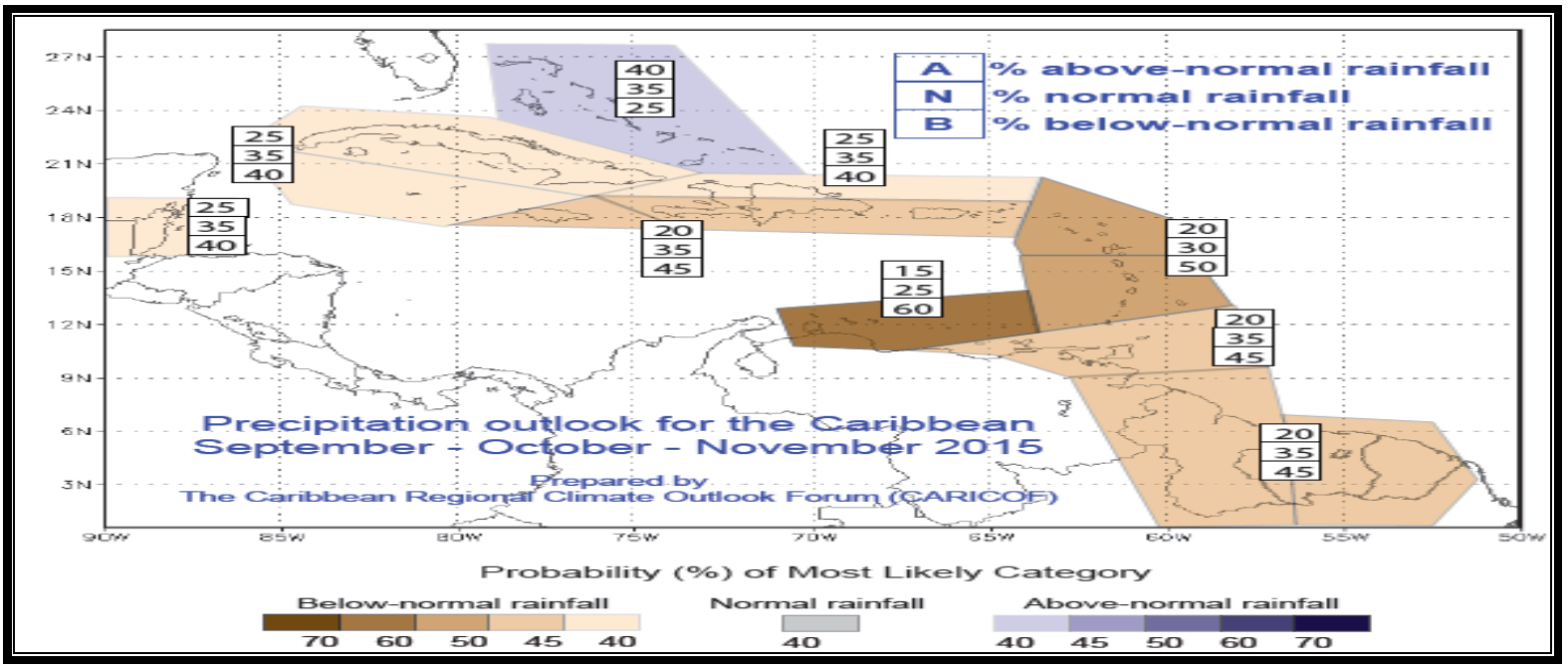


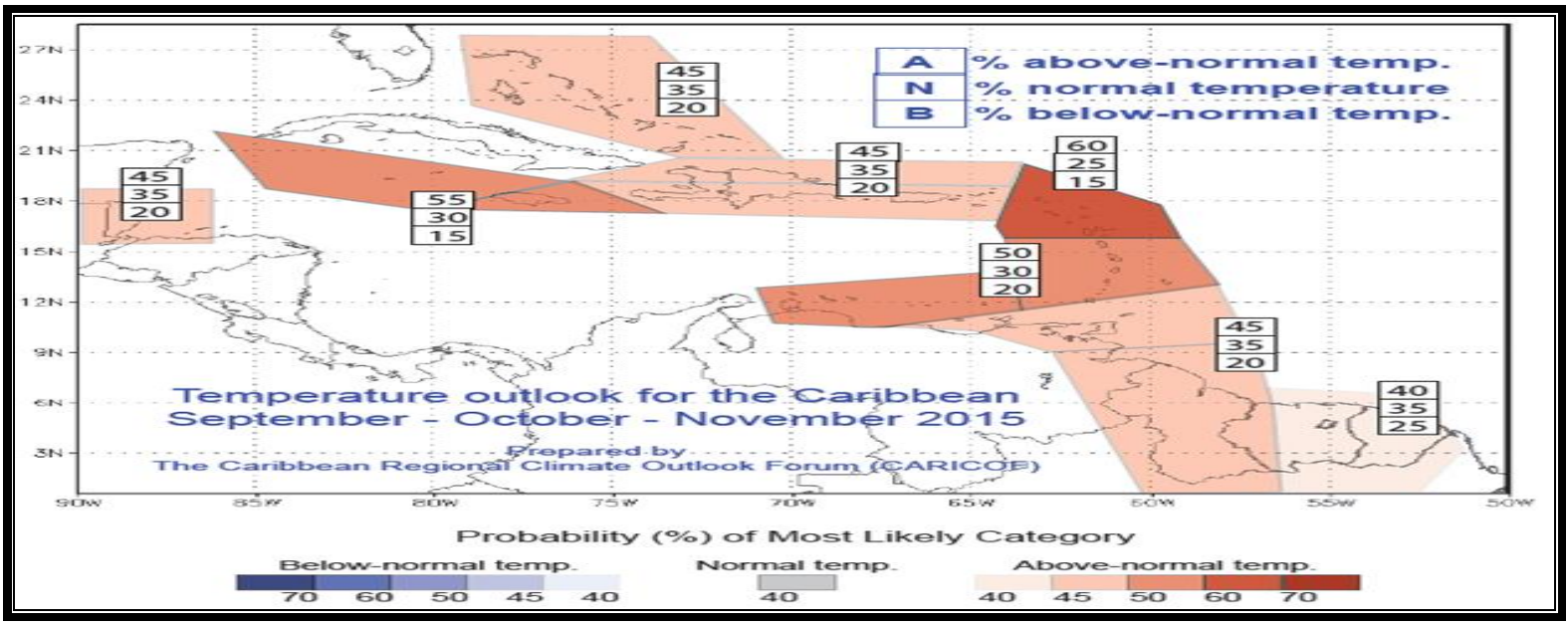
Fig # 4: Comparison of the Average Maximum and Minimum temperatures for selected stations for August 2015.

Seasonal Forecast for September – November, 2015

Guyana is currently in its secondary dry season of 2015, the recent seasonal forecast concludes that below normal to normal rainfall is expected for the period of September to November, with this Guyana will continue to see generally dry conditions over most parts of the country with above normal to normal temperatures. However, there are still indications that some downpours will be observed.



Fig# 5: Chart showing the Percentages of above Normal (A), Normal (N) and Below Normal (B) rainfall conditions for Guyana and the Caribbean.



Fig# 6: Chart showing the Percentages of above Normal (A), Normal (N) and Below Normal (B) temperature conditions for Guyana and the Caribbean.

Table#3 Rainfall Normals and Averages of selected rainfall stations

Regions	Station Names	September	October	November	Regions	Station Names	September	October	November
1	MABARUMA *	137.8	214.9	210.2	5	BLAIRMONT	80.1	54.8	97.8
	WAUNA	185.8	207.0	212.0		MARDS	73.6	67.4	116.1
	PORT KAITUMA	173.5	160.7	190.4	6	ALBION	74.7	64.3	29.2
2	ANNA REGINA*	86.7	110.7	182.3		SKELDON	105	83.8	114.7
	CHARITY	102.2	101.3	212.6		CRABWOOD CREEK*	46.2	53.3	92.3
	Mc NABB	98.3	123.9	185.0		ROSE HALL	80.2	57.4	84.2
	WAKAPOW	136.9	120.7	212.8		NIGG 58	74.6	75.7	84.9
	ONDERNEEMING	80.0	85.0	141.5		ALBION 33	60.2	51.2	60.4
3	BOERSARIE	121.5	139.9	205.2		#73 VILLAGE	58.5	78.9	101.7
	DeKENDEREN B	110	132.3	197.9		# 54 VILLAGE*	45.8	40.2	79.4
	DeKENDEREN F	93.2	127.1	158		ANKERVILLE	57.7	65.6	77.4
	LEONORA F	90	117.9	156.3		MIBIKURI	73.3	26.5	95.4
	LEONORA B	112.7	125	163		MARA LAND DEV. SCHEME*	85.6	59.3	95.1
	WALES	125.2	125.3	171.7		NEW AMSTERDAM	86.9	59.6	94.7
	UITVLUGT B	102.3	113.6	143.9	7	APAIKWA	124.3	118.1	190.9
	La BAGATELLE LEGUAN*	62.1	88.3	113.2		MAZARUNI	147.9	147.9	171.7
4	BOTANIC GARDENS	89.9	89.4	175.9		BARTICA DEM. STATION*	174.3	182.2	139.8
	TIMEHRI	152.5	132.6	181.6		JAWALLA	106.6	107.8	175.7
	CANE GROVE B	52.8	62.6	90.8	8	KAIETEUR FALLS *	127.6	****	****
	CANE GROVE F	52.3	65.3	120	9	LETHEM	86.3	54.6	33.8
	L.B.I FRONT	62.1	73.8	140.5		KARASABAI	26.3	21.6	9
	OGLE FRONT	56.8	64.6	136.7		DADANAWA	83.5	45.5	57.5
	ENMORE FRONT	72.8	78	127.8	10	GREAT FALLS	126.9	110.3	152.5
	KAIRUNI*	109.3	84.4	130.7		WISMAR*	107.5	97.5	107.3

NOTE = The normals for various stations were calculated by the use of rainfall data from the year 1981- 2010 (30 years).
* = Rainfall Averages (less than 30 years of data).

Table # 4: Average rain days for the months September -November for selected stations

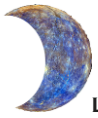
Station Name	September	October	November
Georgetown Botanical Gardens	7 days	8 days	12 days
Timehri Meteorological Station	12 days	5 days	14 days
Ogle	6 days	6 days	11 days
Lethem	8 days	5 days	3 days
Anna Regina	6 days	9 days	10 days
New Amsterdam	6 days	6 days	9 days

NOTE: Rain day = More than 1 mm of rainfall within a 24 hrs period.

TABLE#5: SPRING TIDE TABLE FOR SEPTEMBER, 2015

Date	HIGH WATER	
1st	05 45	3.27
	17 52	3.27
2nd	06 33	3.12
	18 34	3.14
3rd	07 23	2.91
	19 19	2.95
4th	08 20	2.67
	20 12	2.75
10th		
	14 51	2.77
11th	02 33	2.81
	15 26	2.86
12th	03 09	2.88
	15 57	2.91
13th	03 42	2.93
	16 27	2.93
14th	04 15	2.95
	16 54	2.93
15th	04 48	2.94
	17 20	2.89
16th	05 22	2.90
	17 47	2.83
17th	05 57	2.81
	18 15	2.74
25th	01 24	2.88
	13 55	2.85
26th	02 15	3.07
	14 40	3.08
27th	03 05	3.22
	15 23	3.25
28th	03 53	3.30
	16 04	3.35
29th	04 41	3.30
	16 45	3.36
30th	05 28	3.22
	17 27	3.29

Spring Tides Tables are provided by the Maritime Administration Department

 New moon 13th Am  First quarter 21st Am  Full moon 27th Pm  Last quarter 05th Pm

Lunar calendar for September, 2015

Agricultural Review for August, 2015

Regionally, moderately wet to dry conditions were experienced for the month of August. There were no reports of significant effects of the weather on Agricultural production.

Farmer's Note for September, 2015

Guyana is in its secondary dry season of 2015 and climatologically the month of September is one of the hottest and driest months in Guyana. Generally dry conditions is expected over most of the country. Thus, farmers are advised to take the following precautions;

- Provide shade for plants that cannot withstand high temperatures and excess sunlight.
- Shade should be provided for animals, so as to minimize heat stress.
- Mulch around crops, so that the soil moisture can be retained to maintain healthy crop growth.
- Transplanting should be done early in the morning and late in the afternoon.
- Farmers should take steps to conserve and prevent any wastage of irrigation water.
- Plant warm season vegetables that can withstand the dry periods such as; tomato, pepper, cucumber, ochro, watermelon, pumpkin, sweet potato etc.
- When debeaking and administering any form of drugs to your animals, it should be done early in the morning to prevent heat stress which aids in decreasing the mortality rate.
- Effective pasture management should be executed during this period.
- Farmers and other stakeholders should take this opportunity to clean drains,trenches , canals etc, in anticapitation for the upcoming Secondary Wet season.

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Crop Of The Month: Corn | September ,2015

Common Name: Corn / Maize

Scientific Name: *Zea mays subsp. Mays*

Plant Type: Grain

Soil pH: 6.0- 7.0

Introduction

Corn also known as "Maize", is a large grain plant. The leafy stalk produces ears which contain the grain, which are seeds called kernels. Corn kernels are often used in cooking as starch. The six major types of maize are dent, flint, pod, popcorn, flour, and sweet corn.

Optimum temperature for growth

Peak germination is at 20-30°C and growth at 18-21°C.

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Rainfall requirements

An annual rainfall of more than 500 mm is needed, with best yields usually in the 1200-1 500 mm area.

Drought tolerance

It is fairly drought tolerant up to five weeks, but thereafter is very susceptible. Dry weather at pollination time seriously affects pollination and hence yields.

Soil requirements

It requires a well-drained, fertile soil. Alluvial loams, deep latosols and clay loams are preferred .

*Tolerance to flooding*Corn has no tolerance to flooding.

Planting

When planting, carefully select a site which is well tilled, if the land is low, drainage should be a priority to prevent damping off and moisture stress.Plant seeds 2.5 inches deep and mould it with fertilizer and organic matter, water 2 times a day morning and afternoon.

Health Benefits of Corn

Health benefits of corn include controlling diabetes, prevention of heart ailments, lowering hypertension and prevention of neural-tube defects at birth.It is also a rich source of vitamins A, B, E and many minerals. Its high fiber content ensures that it plays a significant role in the prevention of digestive ailments like constipation and hemorrhoids as well as colorectal cancer. The antioxidants present in corn also act as anti-carcinogenic agents and prevents Alzheimer's disease.

Nutritional value

In a 100 gram serving, maize kernels provide 86 calories and area good source (10-19% of the Daily Value) of the B vitamins, thiamin, niacin, pantothenic acid (B5) and folate . In moderate amounts, they also supply dietary fiber and the essential minerals, magnesium and phosphorus whereas other nutrients are in low amounts.

Harvesting/Storage

Corn ears should be harvested at the "milk stage" of development when the kernels within the husk are well packed and produce a milky substance when the kernel is punctured. Check ears for ripeness by gently peeling back a small portion of the husk. Be sure to check the ears frequently for ripeness and harvest as required as ears can quickly become over-ripe and lose their sweetness. Remove the ears from the stalk by pulling quickly downward while twisting and then refrigerate until consumption.

Fun Facts About Corn

- Corn is called maize by most countries, this comes from the Spanish word 'maiz'.
- Corn is a cereal crop that is part of the grass family.
- An ear or cob of corn is actually part of the flower and an individual kernel is a seed.
- On average an ear of corn has 800 kernels in 16 rows.
- Corn will always have an even number of rows on each cob.

Insect Pests

- Corn seed maggot
- Locust
- White grubs
- Caterpillar
- Thrips

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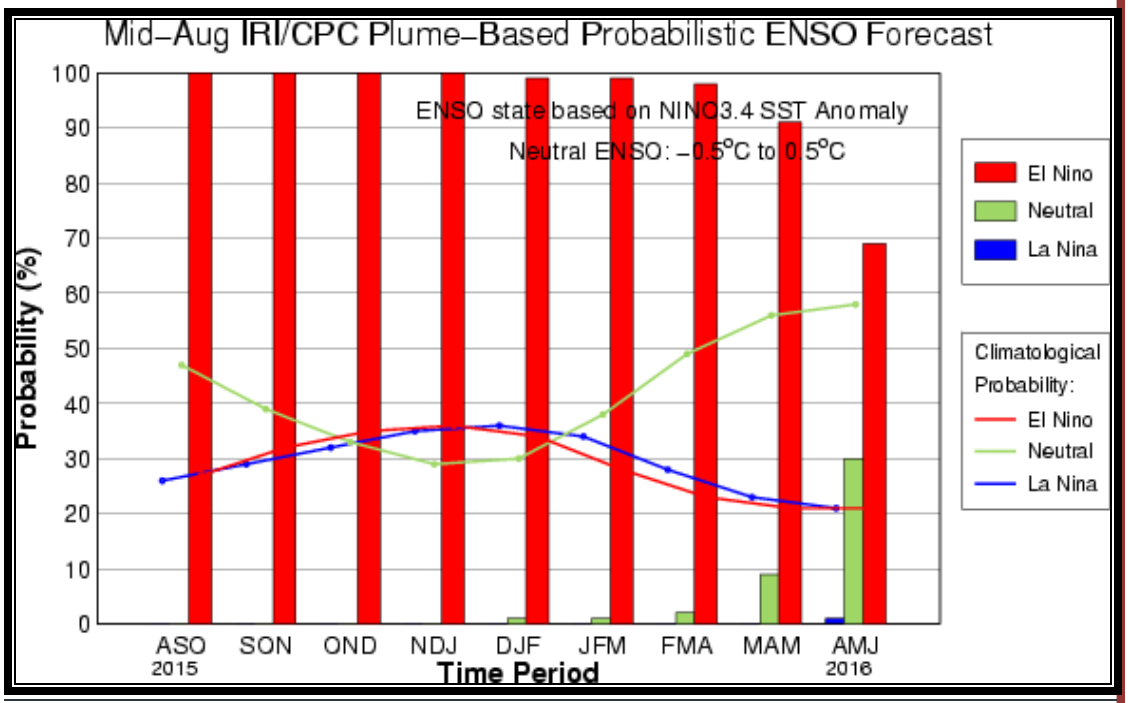
El Niño Update

ENSO Alert System Status: El Niño Advisory

- **El Niño conditions are present.***
- Positive equatorial sea surface temperature (SST) anomalies continue across most of the Pacific Ocean.
- There is a greater than 90% chance that El Niño will continue through Northern Hemisphere winter 2015-16, and around an 85% chance it will last into early spring 2016..

Table #6: CPC/IRI Early-Month Consensus ENSO Forecast Probabilities



El Niño Facts

- El Niño is associated with a drier wet season.
- If El Niño manifests, less water will be stored during the wet season.
- By consequence, less water would be available for use in the dry season.