

**SEASONAL WEATHER FORECAST & ITS EFFECTS TO AGRICULTURE
FOR BELIZE
June to August 2019**

Alert Level

No Concern
Drought Watch
Drought Warning

LIVESTOCK	Zone	District	Possible Effects and actions to mitigate effect
1 Poultry	North	Corozal & Orange Walk	<p>Possibility of heat stress in all flocks in commercial farms & for Backyard poultry make sure enough water supply is there.</p> <p>Install water sprinklers and fans and shade for backyard chicken</p> <p>Open sidelines for ventilation and for flock to refresh.</p> <p>Increase biosecurity measures in poultry farms</p>
	Central Inland	Cayo Northern	<p>Possibility of heat stress in all flocks in commercial farms & for Backyard poultry make sure enough water supply is there.</p> <p>Install water sprinklers and fans and shade for backyard chicken</p> <p>Open sidelines for ventilation and for flock to refresh.</p> <p>Increase biosecurity measures in poultry farms</p>
	Central Inland	Cayo	<p>Possibility of heat stress in all flocks in commercial farms & for Backyard poultry make sure enough water supply is there.</p> <p>Install water sprinklers and fans and shade for backyard chicken</p> <p>Open sidelines for ventilation and for flock to refresh.</p> <p>Increase biosecurity measures in poultry farms</p>
	Central Coastal	Belize	<p>Possibility of heat stress in all flocks in commercial farms & for Backyard poultry make sure enough water supply is there.</p> <p>Install water sprinklers and fans and shade for backyard chicken</p> <p>Open sidelines for ventilation and for flock to refresh.</p> <p>Increase biosecurity measures in poultry farms</p>
	South	Stann Creek	<p>Possibility of heat stress in all flocks in commercial farms & for Backyard poultry make sure enough water supply is there.</p> <p>Install water sprinklers and fans and shade for backyard chicken</p> <p>Open sidelines for ventilation and for flock to refresh.</p> <p>Increase biosecurity measures in poultry farms</p>
		Stann Creek South Eastern	<p>Possibility of heat stress in all flocks in commercial farms & for Backyard poultry make sure enough water supply is there.</p> <p>Install water sprinklers and fans and shade for backyard chicken</p> <p>Open sidelines for ventilation and for flock to refresh.</p>

			Toledo	<p>Increase biosecurity measures in poultry farms Public awareness and educational trainings. Increase surveillance (active and passive) for early detection and control measures.</p>
2	Cattle	North	Orange Walk, Corozal	<p>Can cause an increase in internal and external parasites Recommend timely deworming of animals along with pasture management (silvopastoral system) Ensure adequate water supply and hay storage, protein banks, citrus pellets or multinutritional blocks Possible outbreak of black leg and rabies. Continue monitoring and vaccinate and farmers are encourage to report any suspect cases.</p> <p>Can cause heat stress Make sure adecuate water supply is present</p>
			Cayo Northern	<p>Can cause an increase in internal and external parasites Recommend timely deworming of animals along with pasture management (silvopastoral system) and multinutritional blocks Possible outbreak of black leg and rabies. Continue monitoring and vaccinate and farmers are encourage to report any suspect cases.</p> <p>Can cause heat stress Make sure adecuate water supply is present</p>
		Central Inland	Cayo	<p>May increase of internal and external parasites. Recommend timely deworming of animals along with pasture management (silvopastoral system) and multinutritional blocks Can cause heat stress Ensure adequate water supply and hay storage, protein banks, citrus pellets & multinutritional blocks</p>
			Belize	<p>Can cause an increase in internal and external parasites Recommend timely deworming of animals along with pasture management (silvopastoral system) and multinutritional blocks Ensure adequate water supply and hay storage, protein banks or citrus pellets Can cause heat stress Make sure adecuate water supply is present</p>

		Stann Creek	<p>Recommend timely deworming of animals along with pasture management (silvopastoral system) and vitamins supplement</p> <p>Can cause heat stress</p> <p>Ensure adequate water supply and hay storage, protein banks or citrus pellets</p>
	South	Stann Creek South Eastern	<p>An increase of internal and external parasites.</p> <p>Recommend timely deworming of animals along with pasture management (silvopastoral system)</p> <p>Can cause heat stress</p> <p>Ensure adequate water supply and hay storage, protein banks or citrus pellets</p>
		Toledo	<p>May cause an increase in internal and external parasites</p> <p>Recommend timely deworming of animals along with pasture management (silvopastoral system)</p> <p>Ensure adequate water supply and hay storage, protein banks, citrus pellets & multinutritional blocks</p> <p>Can cause heat stress</p> <p>Make sure adequate water supply is present</p>

3	Pigs	North	Corozal & Orange Walk	<p>Can cause heat stress</p> <p>Adequate water supply and allow enough space per animal</p> <p>Farmers are encourage to report any mortality in their farms</p> <p>Install sprinklers where necessary.</p>
		Central Inland	Cayo Northern	<p>Can cause heat stress</p> <p>Adequate water supply and allow enough space per animal</p> <p>Install sprinklers where necessary.</p> <p>Farmers are encourage to report any mortality in their farms</p>
			Cayo	<p>Can cause heat stress</p> <p>Adequate water supply and allow enough space per animal</p> <p>Clean the pig pen more frequently and wet animals to reduce body temperature</p> <p>Farmers are encourage to report any mortality in their farms</p> <p>Install sprinklers where necessary.</p>
		Central coastal	Belize	<p>Can cause heat stress</p> <p>Adequate water supply and allow enough space per animal</p> <p>Farmers are encourage to report any mortality in their farms</p> <p>Install sprinklers where necessary.</p>
				Stann Creek

			Stann Creek	<p>Farmers are encourage to report any mortality in their farms</p> <p>Install sprinklers where necessary.</p>
		South	Stann Creek south eastern	<p>Can cause heat stress</p> <p>Adecuate water supply and allow enough space per animal</p> <p>Clean the pig pen more frequently and wet animals to reduce body temperature</p> <p>Farmers are encourage to report any mortality in their farms</p> <p>Install sprinklers where necessary.</p>
			Toledo	<p>Can cause heat stress</p> <p>Adecuate water supply and allow enough space per animal</p> <p>Farmers are encourage to report any mortality in their farms</p> <p>Install sprinklers where necessary.</p>
4	Sheep	North	Corozal & Orange Walk,	<p>Possible internal and external parasites.</p> <p>Rotation of Dewormers for animals and continued vitamins shots if required</p> <p>Proper farm management</p> <p>Can cause heat stress</p> <p>Make sure adecuate water supply is present</p> <p>Install shade on barn</p>
		Central Inland	Cayo Northern	<p>Possible internal and external parasites.</p> <p>Rotation of Dewormers for animals and continued vitamins shots if required</p> <p>Proper farm management</p> <p>Can cause heat stress</p> <p>Make sure adecuate water supply is present</p> <p>Install shade on barn</p>
			Cayo	<p>May cause possible internal and external parasites.</p> <p>Deworming of animals and vitamins if required</p> <p>Proper farm management</p> <p>Can cause heat stress</p> <p>Make sure adecuate water supply is present</p> <p>Install shade on barn</p>
		Central	Belize	<p>Possible internal and external parasites.</p> <p>Rotation of Dewormers for animals and continued vitamins shots if required</p> <p>Proper farm management</p>

	Coastal		<p>Can cause heat stress</p> <p>Make sure adequate water supply is present</p> <p>Install shade on barn</p>
	South	Stann Creek	<p>May cause possible internal and external parasites.</p> <p>Deworming of animals and vitamins if required</p> <p>Proper farm management</p> <p>Can cause heat stress</p> <p>Make sure adequate water supply is present</p> <p>Install shade on barn</p>
		Stann Creek South eastern	<p>Possible internal and external parasites.</p> <p>Deworming of animals and vitamins shots required</p> <p>Proper farm management</p> <p>Can cause heat stress</p> <p>Make sure adequate water supply is present</p> <p>Install shade on barn</p>
		Toledo	<p>Possible internal and external parasites.</p> <p>Rotation of Dewormers for animals and continued vitamins shots if required</p> <p>Proper farm management</p> <p>Can cause heat stress</p> <p>Make sure adequate water supply is present</p> <p>Install shade on barn</p>

5	Bees	North	Corozal & Orange Walk	<p>Will favour an increase in small hive beetle population outbreak.</p> <p>Management practice in the control of the pest where it is present (Corozal & O.W. Dist)</p> <p>Add food source and water.</p> <p>Implement movement control measures</p> <p>Increase monitoring and surveillance</p>
		Central Inland	Cayo Northern	<p>Continue surveillance for early detection of Small Hive Beetle and other mite problem</p> <p>Adequate supply of water and food</p>
			Cayo	<p>Continue surveillance for early detection of Small Hive Beetle and other mite problem</p> <p>Adequate supply of water and food</p>
		Central Costal	Belize	<p>Can have a possible infestation of small hive beetle population.</p> <p>Monitoring and surveillance needs to be conducted frequently</p> <p>Adequate supply of water and food</p>

		South	Stann Creek	Continue surveillance for early detection of Small Hive Beetle and other pests Adecuate supply of water and food
		South	Stann Creek South Eastern	Continue surveillance for early detection of Small Hive Beetle and other pests Adecuate supply of water and food
			Toledo	Continue surveillance for early detection of Small Hive Beetle Adecuate supply of water and food

AGRICULTURE COMMODITTIES

1	Sugarcane	North	Corozal & Orange Walk (North & South West)	This condition will not favour the pest population outbreak of the frog hopper. Continue surveillance and monitoring of the pest This condition will favour sugar cane borer population outbreak. Monitor and control where possible of the sugar cane borer. This favour the yellow sugarcane aphid population outbreak Monitor and control where outbreak is located.
		Central & Inland Coastal	Cayo Northern	This condition will not favour the pest population outbreak of the frog hopper. Continue surveillance and monitoring of the pest This condition will favour sugar cane borer population outbreak. Monitor and control where possible of the sugar cane borer. Insufficient rainfall which can cause severe plant growth retardation. provide water supply to the plantations
			Belize	This condition will favour sugar cane borer population outbreak. Monitor and control where possible of the sugar cane borer.
		South	Stann Creek	This condition will favour sugar cane borer population outbreak. Monitor and control where possible of the sugar cane borer.
			Toledo	This condition will favour sugar cane borer population outbreak. Monitor and control where possible of the sugar cane borer.
2		Central Inland	Cayo Northern	Will favour psyllid population growth and possible outbreak. Continue monitoring of population dynamics Control measure be implemented if necessary Will favour the mite population increase, a vector for the citrus leprosis virus. Preventative miticide spraying will be necessary for control.
				Will favour psyllid population growth and possible outbreak.

	Citrus		Cayo	<p>Continue monitoring of population dynamics Control measure be implemented if necessary</p> <p>Will favour the mite population increase, a vector for the citrus leprosis virus. Preventative miticide spraying will be necessary for control.</p>
		South	Stann Creek	<p>May favour psyllid population growth and possible outbreak. Continue monitoring of population dynamics Control measure be implemented where necessary</p> <p>May favour the mite population increase, a vector for the citrus leprosis virus. Preventative miticide spraying will be necessary for control.</p>
			Stann Creek South Eastern	<p>Will favour psyllid population growth and possible outbreak. Continue monitoring of population dynamics Control measure be implemented where necessary</p> <p>Will favour the mite population increase, a vector for the citrus leprosis virus. Preventative miticide spraying will be necessary for control.</p>
			Toledo	<p>Will favour psyllid population growth. Continue monitoring of population dynamics and implement control measures</p> <p>Will favour the mite population increase, a vector for the citrus leprosis virus. Preventative miticide spraying will be necessary for control.</p>
3	Bananas	South	Stann Creek	<p>Will favour outbreaks of Sigatoka Continue monitoring and preventative control measures be implemented if necessary.</p>
			Stann Creek South Eastern	<p>Will not favour outbreaks of Sigatoka Continue monitoring and preventative control measures be implemented if necessary.</p> <p>Will favour water stress Implement irrigation where necessary</p>
			Toledo	<p>Will not favour outbreaks of Sigatoka Continue monitoring and preventative control measures be implemented if necessary.</p>
4	Grains: Corn, Rice, Beans, Soy bean & Sorghum	North	Corozal & Orange Walk	<p>This will still favour chances of mite population outbreak. Monitoring and preventative spray with miticide.</p> <p>Will favour army worm population outbreak increase monitoring and effective control measures if necessary</p> <p>This will favour the yellow sorghum aphid population increase. Increase surveillance and control where necessary.</p>

			Cayo Northern	<p>Monitoring and preventative spray with miticide.</p> <p>Will favour army worm population outbreak increase monitoring and effective control measures if necessary</p> <p>This will favour the yellow sorghum aphid population increase. Increase surveillance and control where necessary.</p>
		Central & Coastal	Cayo	<p>This will not favour chances of mite population outbreak. Monitoring and preventative spray with miticide.</p> <p>Will favour army worm population outbreak increase monitoring and effective control measures if necessary</p> <p>This will not favour the yellow sorghum aphid population increase. Increase surveillance, monitoring and control where necessary.</p>
			Belize	<p>This will not favour chances of mite population outbreak. Monitoring and preventative spray if necessary with miticide.</p> <p>May favour army worm population outbreak increase monitoring and effective control measures if necessary</p> <p>May favour the yellow sorghum aphid population increase. Increase surveillance and control where necessary.</p>
			Stann Creek	<p>This may favour fungal problems and bacterial outbreak. Continue monitoring and where necessary implement control measures</p> <p>May favour army worm population outbreak Continue monitoring and effective control measures if necessary</p>
		South	Stann Creek South Eastern	<p>This will not favour fungal problems nor bacterial outbreak. Continue monitoring and where necessary implement control measures</p> <p>Will favour army worm population outbreak increase monitoring and effective control measures if necessary</p>
			Toledo	<p>This may favour fungal problems and bacterial outbreak. Continue monitoring and where necessary implement control measures</p> <p>May favour army worm population outbreak Continue monitoring and effective control measures if necessary</p>
5	Horticulture: Tomatoes, Peppers, Onions, Cabbage, Carrots &	North	Corozal, Orange Walk	<p>This will favour an increase in white flies, thrips and mite outbreak along with viral diseases. Increase monitoring and implement effective control measures. Cover structure production where possible</p> <p>This will favour increase in population for diamond back moth Increase surveillance and monitoring of the pest and apply insecticide where necessary</p> <p>Will favour water stress Implement irrigation where necessary</p>

	CARROTS & Potatoes	Central Inland & Central Coastal	Cayo Northern	<p>This will favour an increase in white flies, thrips and mite outbreak along with viral diseases. Increase monitoring and implement effective control measures. Cover structure production where possible</p> <p>This will favour increase in population for diamond back moth Increase surveillance and monitoring of the pest and apply insecticide where necessary</p> <p>Will favour water stress Implement irrigation where necessary</p>	
			Cayo	<p>This may favour scale insects, white flies, thrips, mealybugs and mite outbreak along with viral diseases. Monitoring and implementing effective control measures. Cover structure production where possible</p> <p>This may favour increase in population for diamond back moth</p> <p>Increase surveillance and monitoring of the pest and apply insecticide where necessary</p>	
			Belize	<p>This may favour an increase in white flies, thrips and mite outbreak along with viral diseases. Increase monitoring and implement effective control measures. Cover structure production where possible</p> <p>This may favour increase in population for diamond back moth</p> <p>Increase surveillance and monitoring of the pest and apply insecticide where necessary</p>	
			Stann Creek	<p>This may favour fungal problems and bacterial outbreak. Continue monitoring and control measures where necessary.</p>	
			Stann Creek South Eastern	<p>This will not favour fungal problems nor bacterial outbreak. Continue monitoring and control measures where necessary. Implement irrigation measures where necessary</p>	
			Toledo	<p>This may favour an increase in white flies, thrips and mite outbreak along with viral diseases. Increase monitoring and implement effective control measures. Cover structure production where possible</p> <p>This may favour increase in population for diamond back moth</p> <p>Increase surveillance and monitoring of the pest and apply insecticide where necessary</p>	
		South			
6	Fruits Trees: Coconuts, Avocadoes, Soursop, Cacao &	North	Corozal & Orange Walk	<p>Will increase red mite population in coconuts. Spray with miticide where possible</p> <p>Increase in white fly population in avocadoes and soursop Monitoring and spray with systemic insecticide</p> <p>Possible increase in the wasp & moth population that affects soursop fruits.</p>	

Pineapple		Orange Walk	Monitoring of the wasp & moth and insecticide application where necessary followed by bagging of fruits Can increase weevil (<i>Rhyncophorus palmarum</i>) infestations that causes red ring disease Increase monitoring and trapping
	Central & Coastal	Cayo Northern	Will increase red mite population in coconuts. Spray with miticide where possible Increase in white fly population in avocados and soursop Monitoring and spray with systemic insecticide Possible increase in the wasp & moth population that affects soursop fruits. Monitoring of the wasp & moth and insecticide application where necessary followed by Can increase weevil (<i>Rhyncophorus palmarum</i>) infestations that causes red ring disease Increase monitoring and trapping
		Cayo	May increase red mite population in coconuts. Monitor and Spray with miticide where possible May increase in white fly population in avocados and soursop monitoring and spray with systemic insecticide if necessary May increase in the wasp & moth population that affects soursop fruits. monitoring of the wasp & moth and insecticide application where necessary followed by bagging of fruits May increase weevil (<i>Rhyncophorus palmarum</i>) infestations that causes red ring disease Increase monitoring and trapping
		Belize	May increase red mite population in coconuts. Monitor and Spray with miticide where possible May increase in white fly population in avocados and soursop monitoring and spray with systemic insecticide if necessary May increase in the wasp & moth population that affects soursop fruits. monitoring of the wasp & moth and insecticide application where necessary followed by bagging of fruits May increase weevil (<i>Rhyncophorus palmarum</i>) infestations that causes red ring disease Increase monitoring and trapping
		Stann Creek	This may favour pythoptora problems in coconuts and pineapple. Continue monitoring and control measures where necessary. May favour problems in monilia in cacao. Continue surveillance for monilia and control measure where necessary
			This will not favour pythoptora problems in coconuts and pineapple.

	South	Stann Creek South Eastern	<p>Continue monitoring and control measures where necessary.</p> <p>Will not favour problems in monilia in cacao.</p> <p>Continue surveillance for monilia and control measure where necessary</p>
		Toledo	<p>This may favour pythophtora problems in coconuts and pineapple.</p> <p>Continue monitoring and control measures where necessary.</p> <p>May favour problems in monilia in cacao.</p> <p>Continue surveillance for monilia and control measure where necessary</p>

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Aproximate rainfall amount expected for different areas of Belize for June, July & August 2019		
REGION	RAINFALL AMOUNT (mm)	Category
North (Corozal & Orange Walk District)	350 - 400	Below Normal
Central Inland areas (Cayo District)	400 - 600	Below Normal
Central Coastal Areas (Belize District)	400 - 500	Below Normal
Southern Areas (Stann Creek & Toledo District)	700 - 1600	Normal to Below Normal

Nb. Provided by the Met Department

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