

EARLY WARNING BULLETIN FOR FOOD SECURITY

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IN THE GAMBIA

Period: October 1 - 10, 2018



Government of The Gambia

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Multidisciplinary Working Group (MWG)

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1.0 SYNOPTIC SITUATION

The mean surface position of the Inter-Tropical Discontinuity (ITD) has its western axis oscillating over northern/central Senegal, stretching across central positions of Mali, Niger and then sloping onto southern Chad.

The weather to the north of the ITD is characterized by dry and stable atmosphere with observance of dust haze over most parts of North African countries during the period. However, places to the south of the ITD experienced moderate to heavy rain and thunderstorms, occasionally associated with slight to moderate winds.

1.1 OUTLOOK FOR THE NEXT DEKAD (11th - 20th October 2018)

Warm and slightly humid atmospheric conditions will prevail during the period with outbreaks of slight to moderate rains and thundery activities over places. The expected rainy days are 15th and 16th of October 2018.

2.0 RAINFALL SITUATION:

Rainfall in this dekad has reduced significantly in terms of frequencies and intensities as compared to the last dekad which can be attributed to the approach of the end of the rainy season. Dekadal totals ranging from 15.5mm to 36.4mm were recorded in the Western Third, 8.6mm to 41.2mm in the Middle Third and 20.0mm to 39.6mm in the Eastern Third of the country (figure 1a). These dekadal totals were recorded between one to four rainy days.

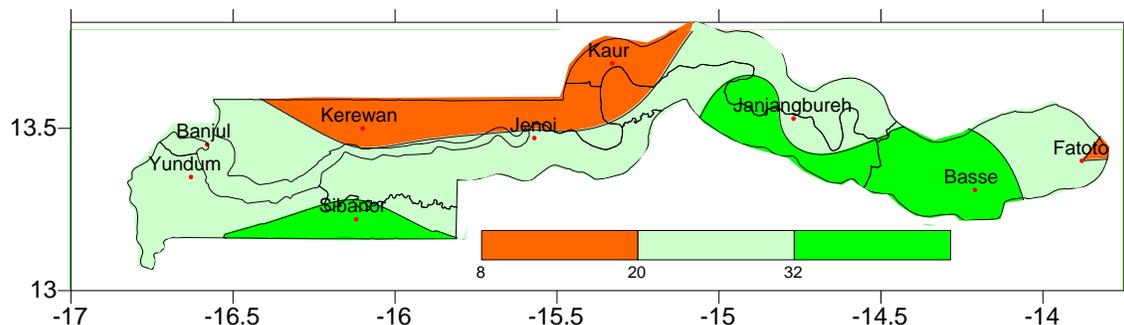


Figure 1a: Dekadal rainfall totals from 01st – 10th October, 2018.

The rainfall seasonal totals recorded as at this period under review shows an increase with the recording of additional rainfall during this dekad. The highest seasonal rainfall amount of over 900mm were recorded over Basse and Sibanon in the Eastern and Western Thirds of the country respectively. On the other hand, Kaur in the Middle Third of the country recorded the lowest seasonal rainfall total of 563.9mm. However, in the Middle Third were the lowest seasonal amount of rainfall is recorded, all the other stations recorded significant amounts of rainfall ranging from 700mm to over 800mm (figure 1b).

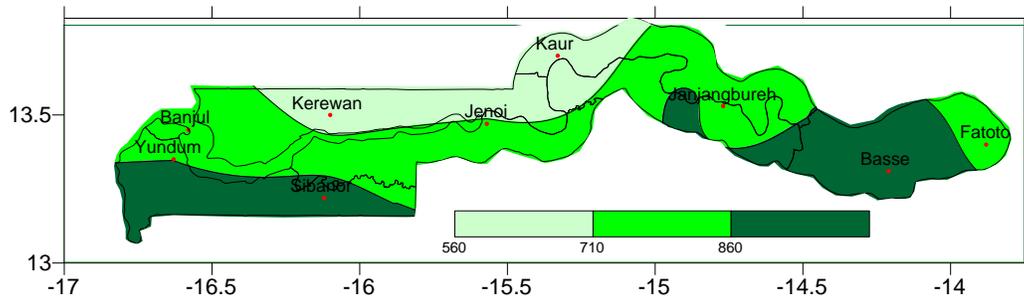


Figure 1b: Rainfall Seasonal totals from May 1st 2018– October 10th 2018.

In comparisons with the same period last year (2017), significant deficits of 268.1mm and 174.6mm were recorded over Kerewan and Jenoi in the Western and Middle Thirds of the country. The country average stood at **799.8mm**, which is **32.4mm** below last year’s amount (**832.2mm**).

3.0 AGROMETEOROLOGICAL SITUATIONS

Average temperature recorded in this dekad was lowest (25°C) over Jenoi in the Middle Third of the country and was 28°C and above over the rest of the country. Minimum temperature recorded during this dekad reached 19°C over Jenoi and Janjanbureh respectively, whereas maximum temperature of 39°C was recorded over Kerewan in the Western Third of the country.

Average relative humidity (RH) recorded ranged between 70% and 80% across the country, which continues to show a high degree of water content in the atmosphere.

Winds were generally light to moderate in speed across the country.

4.0 AGRICULTURAL SITUATION

The crop situation during this period shows that most of the crops have reached maturity and harvesting is ongoing for the early millet, maize, Philippine type groundnuts, cowpea and water melon crops. The situation regarding area of cultivation differs from area to area depending on the rainfall situation and the timely availability of farming inputs. In some areas, farmers are complaining about the timely delivery of farming implements which carries weight in the preparation of the land for crop production.

5.0 PESTS AND DISEASES SITUATION:

There is a range of pest that attack field crops at different stages. The millet head miner (*Heliocheilus albipunctella*) is one of the pests that affect millet fields at maturity mainly feeding on the grains. The adults lay eggs on the millet heads with preference to half grown and fully grown flowering heads. When the eggs hatch, the first larval instars feed on the flowers while the mature larvae mine the developing grains on the head leading to damage panicles. The larvae bore into the soil for pupation.



Symptoms of infested panicle

larva mining the panicle

The stem borer (*Coniester ignefusalis*) is another important pest of the millet. The eggs are laid in clusters of 20-25 between the leaf sheaths and the stem. The eggs hatch into larvae which have dark spots on the body. The larvae are notorious for tunneling in the stem and feeding on the conducting tissues which support translocation of water and minerals within the plant. This feeding action leads to damage stems, dead heart and poor grain development.



Left-right: damage stem, larvae feeding on tissues, and the adult moth

The rice Grasshopper (*Hieroglyphus daganensis*) commonly known as rice locust are also causing damages on rice in CRR/N. They feed on the leaves and cut off panicles on the plants. The leaves are completely eaten by the nymphs leaving the midrib and the stalks while the adults attack the heads into the base of the stalk leading to the formation of white heads. They prefer aquatic environments such as swampy areas.



Adult grasshopper

In addition to the insect pests, a vertebrate pest in the form of the hippopotamus is found to be causing serious damages to rice fields in the CRR/N. The beast moves from the river to nearby swamps and feeds on the growing rice plants. This perennial problem has caused tremendous losses to rice producers in the region. The farmers are faced with this problem which they have little capacity to manage. The hippos are protected species however their encroachment into the livelihood of farmers threatens household food security.

The weaver birds (*Quelea quelea*) and the village weaver birds continue to attack mainly cereals such as rice and early millet. The birds attack crop fields in swarms which allow them to devastate the fields within a short span of time. The management of birds is hectic as farmers conduct bird scaring early morning to late evening in order to minimize damage. The weaver bird continues to threaten rice and millet production especially in the CRR South where they are generally found throughout the year and have been one of the major causes of crop loss in the region.

The invasive fruit fly species (Tephritidae family) are also a major pest of horticultural crops. Fruit fly adults often lay their eggs in the fresh flesh of fruits and vegetables. The eggs hatch into whitish colored larvae (maggots) which often feed on the inside of the fruit, resulting in a soft disorder. The tissues of the fruit begin to rot resulting to the mass dropping of the fruits. The mangoes are the most infested and damaged crop by the fruit flies but currently the water melon fields are faced with an infestation by the pest. The species causing damage to water melon are the *Zeagodacus curcubitae* and *Bactrocera dorsalis*. Water melon fruits are punctured by the females for egg laying causing damage and loss to the producers. The incidence is prevalent mostly in the WCR and NBR which are also the invasive fruit fly hubs in the Gambia.



Bactrocera dorsalis



Zeagodacus curcubitae

The most recent reports of the pest situation from all the regions indicate drastic reduction in the fall armyworm (*Spodoptera frugiperda*) incidences. Majority of the maize plants are now at the advance stage of maturity and some fields have already being harvested and sold for consumption. The leave

axil, the tassels and the cobs are the parts of the plant where close observation should be done for the larvae. The farmers are encouraged to apply the IPM approaches recommended for the management. The observations show that the intensification of the FAW control during the vegetative stage of plant growth has a great bearing on minimizing the potential damage and loss.

The blister beetle continues to cause damages to the early millet fields especially in the WCR and CRR/S regions of the Gambia. The insect feeds on flowers on the millet head thus leading to poorly filled or even empty grains. It finds refuge on weeds in and around the millet field and then attack the heads. The incidence has reduced significantly in the NBR and URR due to application of some management options. Now that most of the early millets are at head formation and maturity, the pest infestation has also been reported in the various production zones in the regions.

Management of the Pest Problems

The millet head miner can be managed using various IPM approaches.

- Plough deeply to expose residual larvae and pupae populations for dehydration and eventual death
- Hand picking and crushing of the larvae on the heads

The stem bores are control using a combination of compatible options (IPM) for effective management.

- Use of resistant varieties if locally available
- Early planting with the first rains to avoid heavy infestation
- Intercropping with non host crops such as cowpea will confuse the pest causing it to lay eggs on non host crop.
- Destroy or feed the residues to animals to eliminate the larvae because they can survive in the residues until the next growing season.
- Practice crop rotation with non host crops such as legumes to break the pest life cycle
- Apply neem solution three weeks after germination to prevent the larvae from entering the stem.

Different control tactics can be used for the integrated management of the rice grasshopper (rice locust)

- Plough the soil to expose the eggs laid in the soil to sunlight and predators
- Application of systemic insecticides (Dimethoate) to kill the nymphs and adults

The control of weaver bird (*Quelea quelea*) requires a holistic IPM approach. The available management options always arouses conflict of interest between the sister institutions. The methods used include explosives, mist nets, local long guns, and scaring. There are issues with the use of explosives and guns but mist nets can be used alongside scaring.

The management of the fruit flies also call for an IPM approach for effective control. The applicable and most feasible options to be integrated are;

- Field sanitation (collection and burying of infested fruits to kill the larvae)
- Use of fruit fly traps (male lures and food baits)
- Application of botanicals (Neem and hyptis)

- As a last resort the use of contact and systemic pesticides for example (Abermectin, Deltamethrin, Dimethoate etc) **Note the pre-harvest interval of each pesticide used should be adhered to in order to avoid pesticide residues in the fruits.**

For the fall armyworm (*Spodoptera frugiperda*), still the integrated pest management (IPM) approach is being promoted. For effective treatment, each maize stand should be treated in the whorls using the following options;

- Neem or hyptis leave extract solution with 30g of detergent
- Salt solution
- Application of a mixture of wood ash, saw dust, or sand to suffocate the larvae in the whorls
- Close observation and hand picking to kill the larvae
- Good crop management practices (fertilizer application, field sanitation)

The effective control of the blister beetle also calls for IPM approach as follows;

- Use of long bristled varieties to limit attack
- Always keep the area on the perimeter and within the field free from weeds as they hide in the weeds during the day and attack as night approaches
- Regularly observe the millet stands for early detection and treatment
- Use cultural method such as smoking by burning using groundnut shells, clothes or moist wood etc to repel the insects
- Apply 2% dust pesticide on the perimeters to repel the pest from entry into the field
- Apply neem leave extract on the heads weekly to repel the insect
- As a last resort, apply contact insecticides such as Deltamethrin, Abamectin, Malathion to kill the insect

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