



E-ISSN: 2618-0618

P-ISSN: 2618-060X

© Agronomy

www.agronomyjournals.com

2024; 7(4): 437-440

Received: 18-02-2024

Accepted: 23-03-2024

Raja Narasimha M

SMS (Agro-Meteorology),

Dr. K. L. Rao Krishi Vigyan
Kendra, Garikapadu, Andhra
Pradesh, India

Tejaswini V

SMS (Agro-Meteorology),

Krishi Vigyan Kendra, Nellore,
Andhra Pradesh, India

Venkata Reddy I

SMS (Agriculture Extension),

Dr. K. L. Rao Krishi Vigyan
Kendra, Garikapadu, Andhra
Pradesh, India

Siva Prasad PN

SMS (Crop Production),

Dr. K. L. Rao Krishi Vigyan
Kendra, Garikapadu, Andhra
Pradesh, India

Krishnam Raju S

Programme Coordinator,

Dr. K. L. Rao Krishi Vigyan
Kendra, Garikapadu, Andhra
Pradesh, India

Corresponding Author:

Raja Narasimha M

SMS (Agro-Meteorology),

Dr. K. L. Rao Krishi Vigyan
Kendra, Garikapadu, Andhra
Pradesh, India

Impact of michaung cyclone effect on different crops in N.T.R district of South Coastal Andhra Pradesh

Raja Narasimha M, Tejaswini V, Venkata Reddy I, Siva Prasad PN and Krishnam Raju S

DOI: <https://doi.org/10.33545/2618060X.2024.v7.i4f.601>

Abstract

Agriculture is the main economic part for Indian farmers and majorly contribute 25-30% of economic benefit and returns to Govt of India. Agriculture is a back bone part for 75% farmers for this agriculture primarily needed timely weather and climate and it plays crucial role in agriculture if the onset monsoon enters delay the crop growing period goes back and crop growing area may record less if the cyclones will form in the untimely the crops may get more damage and economically losses may appear 50-75% the farmer may not benefitted. In the year of 2023 December 4th-6th a severe cyclonic storm Michuang cyclone were formed in North Indian ocean. Michuang originated as a low pressure area in the gulf of Thailand which crossed into the Bay of Bengal and became a deep depression on December 2nd. It developed into a cyclonic. The storm peaked with sustained winds of 110 km/h (70 mph) causing heavy rainfall in north-eastern Tamil Nadu including Chennai and south-eastern Andhra Pradesh before making landfall near Bapatla in Andhra Pradesh on December 4th- 6th due to this Heavy to very heavy rainfall was recorded 138.7 mm out of 0.9 mm Normal Rainfall and crops like Paddy, Cotton, Bengal gram, Blackgram, Greengram, Redgram, Groundnut crops were Damaged.

Keywords: Michuang cyclone, tropical cyclone, untimely rains, crops effected

Introduction

Cyclone

In Meteorology, words a cyclone is a large mass that rotates around a strong centre of low atmospheric pressure counter clockwise in the Northern Hemisphere and clockwise in the southern hemisphere as viewed from above opposite to an anticyclone.

Tropical cyclone

Tropical cyclone, also called typhoon or hurricane an intense circular storm that originates over warm tropical oceans and is characterized by low atmospheric pressure, high winds and heavy rain. Drawing energy from the sea surface and maintaining strength as long as it remains over warm water, a tropical cyclone generate winds that exceeds 119 km (74 miles) per hour. In extreme cases winds may surpass 320 km (200 miles) per hour.



Cyclonic storm

History of Michaung cyclone

Severe cyclonic storm Michaung was a moderate tropical cyclone which formed in the Bay of Bengal during the year 2023 December 1st in North Indian ocean of cyclone season. Michaung originated as a low pressure area in the gulf of Thailand which crossed into the Bay of Bengal and became a deep depression on December 2nd. It developed into a cyclonic storm thereafter and was named *Michaung*. It was the ninth depression and the sixth named cyclonic storm of the season. The cyclone gradually moved north-west over the next few days towards the eastern coast of India. The storm peaked with sustained winds of 110 km/h (70 mph) causing heavy rainfall in north-eastern Tamil Nadu including Chennai and south-eastern Andhra Pradesh before making landfall near Bapatla in Andhra Pradesh on December 5th

Michaung cyclone formed: 1st December 2023

Michaung cyclone Dissipated: 6th December 2023

Untimely Rains due to cyclones

Onset and withdrawal of monsoon largely determine the success of dryland agriculture. Late onset of monsoon delays sowing of crops leading to poor yields. Early withdrawal of rains effect the

yield due to soil moisture stress especially when the kharif crops are at critical stages of grains development. continuous, cyclonic rains from October to December lead to problem in harvesting the crops, especially Paddy, Cotton, Chilli and Legume crops etc. in N.T.R District.

Effect of Untimely Rainfall on different crops

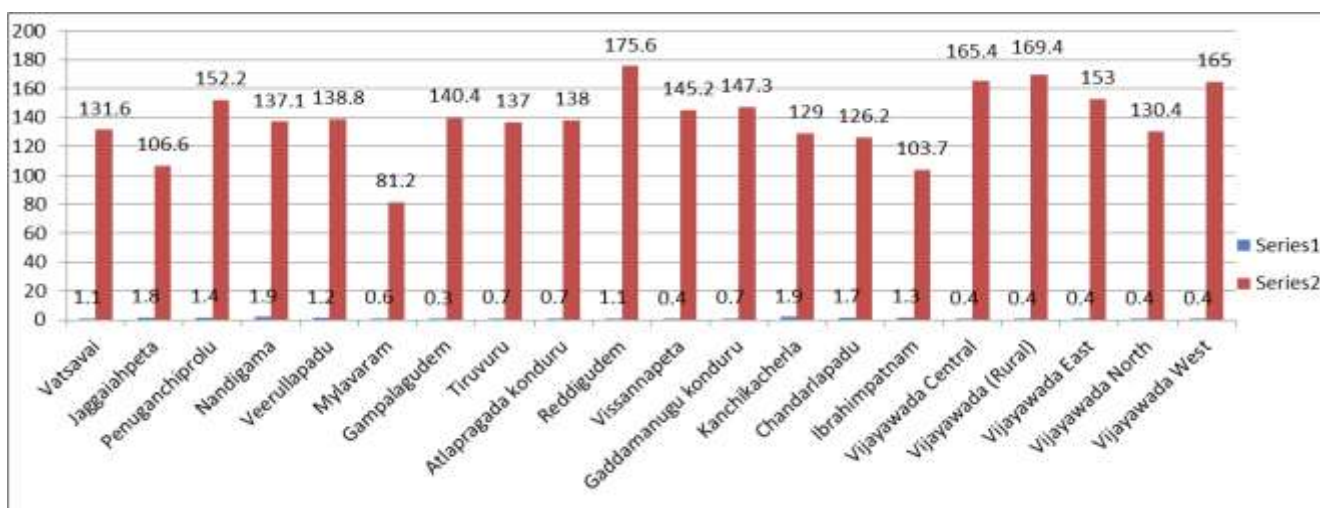
- Crops Inundated and water stagnation in standing crop
- Crops lodging due to heavy rains with heavy wind
- Shattering of Grains and seeds of the crops which is ready to harvest.
- Harvested produce is Inundated in water and possible to germinate

Management of Untimely rains

- Farmers shall be advised to follow the weather forecasting by IMD for proper management of their crops through crop-weather advisories.
- Following of District Agro-meteorological advisories (DAMU) from respected KVKs of their Districts.
- Contingency crop plans shall be made available to the needy farmers.

Block wise Rainfall Distribution due to Michaung cyclone effect from 4th – 6th Dec 2023.

S.No	Blocks Name	Actual (mm)	Normal (mm)	Deviation%	Status
1	Vatsavai	131.6	1.1	11863.6	Excess
2	Jaggaihpeta	106.6	1.8	5822.2	Excess
3	Penuganchiprolu	152.2	1.4	10771.4	Excess
4	Nandigama	137.1	1.9	7115.8	Excess
5	Veerullapadu	138.8	1.2	11466.7	Excess
6	Mylavaram	81.2	0.6	13433.3	Excess
7	Gampalagudem	140.4	0.3	46700.0	Excess
8	Tiruvuru	137.0	0.7	19471.4	Excess
9	Atlapragada konduru	138.0	0.7	19614.3	Excess
10	Reddigudem	175.6	1.1	15863.6	Excess
11	Vissannapeta	145.2	0.4	36200.0	Excess
12	Gaddamanugu konduru	147.3	0.7	20942.9	Excess
13	Kanchikacherla	129.0	1.9	6689.5	Excess
14	Chandarlapadu	126.2	1.7	7323.5	Excess
15	Ibrahimpattam	103.7	1.3	7876.9	Excess
16	Vijayawada Central	165.4	0.4	41250.0	Excess
17	Vijayawada (Rural)	169.4	0.4	42250.0	Excess
18	Vijayawada East	153.0	0.4	38150.0	Excess
19	Vijayawada North	130.4	0.4	32500.0	Excess
20	Vijayawada West	165.0	0.4	41150.0	Excess
	District Average	138.7	0.9	14650.5	Excess



Block wise Rainfall Distribution due to Michaung cyclone effect from 4th – 6th Dec 2023.

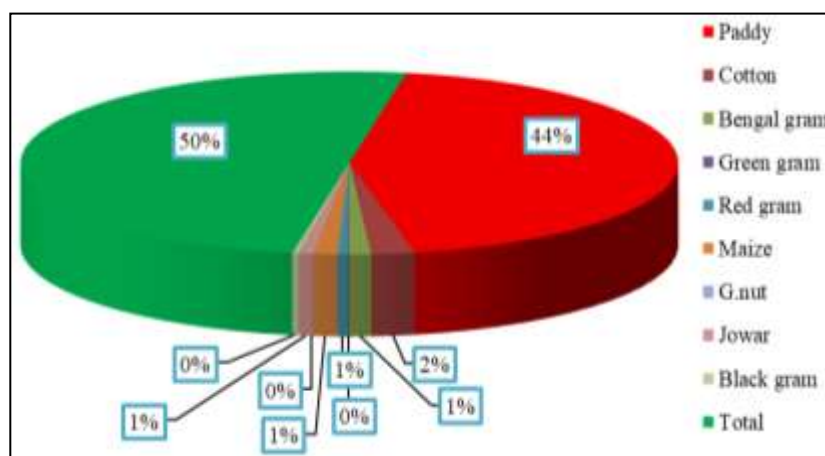
Summary

Due to Michaung cyclone effect 138.7 mm rainfall has been received as against the 0.9 mm with the deviation of 1369.0% status of rainfall is Excess highest rainfall has been received in Reddigudem block 175.6 mm as against the normal of 1.1 mm and lowest rainfall has been received in Mylavaram that is 81.2 mm as against the normal of 0.6 mm from 4th – 6th Dec 2023 this

much amount of high rainfall receiving in different blocks is not useful for farming community for standing crops where the kharif crops are ready to harvest that fields were severely damaged and some crops were lodged and grains and seeds were shattered. This much amount of high rainfall with short duration time has been not recorded for last 10 years for this blocks of N.T.R District.

Crop Damage Report -Due to Untimely rains caused by Michaung Cyclone in NTR district from 04.12.2023 to 6-12-2023

S.No	Name of the Mandal	No of villages effected	Crop wise area Lodging/Inundated /Submerged area in Acres (Standing crops)									Total
			Paddy	Cotton	Bengal gram	Green gram	Red gram	Maize	G.nut	Jowar	Black gram	
1	Vijayawada Rural	16	1450	0	0	0	0	0	0	0	0	1450
2	Vijayawada Urban	1	40	0	0	0	0	0	0	0	0	40
3	Chandralapadu	8	740	0	0	0	0	0	0	0	0	740
4	Veerulapadu	19	353	0	80	26	151	0	0	0	16	626
5	Kanchikacherla	15	550	0	265	0	0	45	0	210	60	1130
6	Nandigama	20	525	0	0	0	0	0	0	0	0	525
7	Vatsavai	20	210	0	0	0	0	50	0	0	0	260
8	Jaggaihpeta	23	537	0	0	0	0	85	0	0	0	622
9	Penuganchiprolu	16	700	0	0	0	0	0	0	0	0	700
10	A.Konduru	10	700	0	0	0	0	30	0	0	0	730
11	Tiruvuru	19	500	0	0	0	0	0	0	0	0	500
12	Gampalagudem	15	600	0	0	0	0	0	0	0	0	600
13	Vissannapeta	12	850	0	0	0	0	40	0	0	5	895
14	Reddygudem	12	1500	0	0	0	0	35	10	0	8	1553
15	Mylavaram	17	1800	0	0	0	0	90	0	0	0	1890
16	G.Konduru	16	2009	600	0	0	0	0	0	0	5	2614
17	Ibrahimpatnam	10	985	75	0	0	0	15	0	0	0	1075
		249	14049	675	345	26	151	390	10	210	94	15950
	Area in acres		34716	1668	853	64	373	964	25	519	232	39413



Percentage (%) Crop wise area Lodging/Inundated/Submerged area in Acres (Standing crops)

Due to Michaung cyclone effect majorly paddy crop was inundated and lodging were happened in 34,716 acres out of this majorly in G. Konduru block has severely damaged 2,009 Acres and minorly effected in Vijayawada urban block 40 Acres. out of Paddy cotton is damaged in 1,668 acres of district out of this majority area 600 acres is damaged in G. Konduru block out of paddy and cotton Bengalgram/Chickpea is damaged in 853 acres in entire district out of this majority area is damaged in Kanchikacherla block 265 acres and minorly 80 acres is damaged in Veerulapadu block and Greengram is damaged in 64 acres and Redgram is damaged in 373 acres.

Conclusion

It was revealed in this research study concluded that formation of different cyclones in untimely and occurring of heavy to very rainfall with high speed wind is more disadvantage and more

economic crop loss and damage to above mentioned different blocks of N.T.R District farming community using of District Agro Meterological unit Weather forecast and crop advisories farmers may benefit to do for some field operations in this regard farming community may benefit 25-30% Yield loss.

Acknowledgements

The authors are highly acknowledged to India Meterological Department (IMD) New Delhi and Ministry of Earth sciences (MOEs) for providing full financial support to the project namely District Agro-Meterological Unit (DAMU) The authors are sincerely thankful to Indian Council of Agricultural Research (ICAR) Agricultural Technology Application Research Institute (ATARI) zone X and Acharya N.G. Ranga Agricultural University (ANGRAU) for providing necessary support for conducting this research analysis study.

References

1. Times of India. Cyclone Michaung: Crop damage in over 6 acres [Internet]. Vijayawada: Times of India; [cited 2024 Apr 23]. Available from: <https://timesofindia.indiatimes.com/city/vijayawada/cyclone-michaung-crop-damage-in-over-6acres/articleshow/105797139.cms>
2. Times of India. [Internet]. [cited 2024 Apr 23]. Available from: http://timesofindia.indiatimes.com/articleshow/105752198.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cpps
3. Firstpost. No power, no food: How Andhra Pradesh, Tamil Nadu are reeling from Cyclone Michaung [Internet]. [cited 2024 Apr 23]. Available from: <https://www.firstpost.com/explainers/no-power-no-food-how-andhra-pradesh-tamil-nadu-are-reeling-from-cyclone-michaung-13470732.html>
4. Jagran English. Cyclone Michaung landfall: Bapatla Andhra coast casualties dead injured as heavy rains cause floods in Tamil Nadu Latest Updates [Internet]. [cited 2024 Apr 23]. Available from: <https://english.jagran.com/india/cyclone-michaung-landfall-bapatla-andhra-coast-casualties-dead-injured-as-heavy-rains-cause-floods-in-tamil-nadu-latest-updates-10118358>
5. NDTV. Andhra Pradesh Cyclone [Internet]. [cited 2024 Apr 23]. Available from: <https://www.ndtv.com/topic/andhra-pradesh-cyclone>