

Review Article

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Understanding the Weather Based Agro Advisories Importance under Gramina Krishi Musam Sewa Project

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ABSTRACT

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Weather is considered crucial for agriculture as it determines the productivity of the crops and Weather parameters influence on agricultural operations and farm production. Un expected weather conditions are the one of the reason for crop losses in India. These losses can be minimized by making modification in field operation by using weather based agro advisories service. District Agro meteorological Unit under the project of Gramin Krishi Mausam Sewa provides weather based agro agro advisories for block level in the respective district.

Introduction

Indian agriculture considered as the gamble of monsoon is a well known fact Agricultural sectors contribute a huge percent to the Indian economy and Indian farmer largely depends on the Monsoon rains for their agricultural operation. Weather plays an important role in agricultural production. Besides rainfall, others weather parameters are also playing an important role in influencing agricultural production. Unfavorable weather conditions are major concerns to the farming community. The advance prediction of these weather events and crop planning based on prediction would help the farmer enormously in reducing the crop losses under aberrant

weather situations and also taking-up suitable contingency measures. Under Gramin Krishi Mausam Sewa project (GKMS), IMD, Ministry of Earth Science in collaboration with SAU/ICAR etc. is issuing weather based agro advisories for the benefit of farming community Bi-Weekly i.e. (every Tuesday and Friday). The major objective of this project is to guide timely and requirement (weather condition) based crop management practices.

Types of weather forecast

Forecasting means the process of estimation of the value of some variable at some future time.

Now casting: A short-time weather forecast issued for the next few— hours and validity of less than 24 hours.

Short range forecasts: Forecasts given for the lead time period of 1 to 3 days.—

Medium range forecasts: A weather forecast issued for a period of 4— days to 10 days in advance.

Long range forecasts: Forecast issued for a period greater than 10 days— in advance and up to a season of more than three months. The monthly and seasonal forecast comes under long range weather forecast.

Parameters of medium range weather forecast for issuing agro advisory bulletin

Medium range weather forecast is major important weather forecast in agriculture normally a medium range weather forecast includes the following parameters and forecast is valid up to 5 days in advance.

1. Rainfall
2. T_{max} and T_{mini}
3. Cloud cover
4. RH I, RH II
5. Wind direction and speed

How to prepare weather based agro advisory bulletins

Weather forecast data is received on every Tuesday and Friday from Meteorological center Hyderabad in telangana state. The forecasting data will clarified by a team of experts on every Tuesday and Friday.

Agro-advisory bulletin is prepared with the help of expert members with brief discussion based on the information on weather forecast, crop condition obtained from the farmers' field (such as crop growth stage, incidence of

pest attack and diseases and water stress etc.) and weather condition of previous days. Usefulness of weather based agro advisory bulletins is very much important in agriculture.

Usefulness of weather based agro advisory bulletins

The main objective of the weather forecasting is to provide advice to the farmers on the actual and expected weather and its influence on the various day-to-day farming operations i.e. sowing, weeding, time of pesticides spray, scheduling irrigation, fertilizer application Advisory on plant protection is very much helpful for protecting crops from insect pest and diseases of crops.

Advised on kept harvested crops in a safe place during rainfall forecasted days restrict post-harvest losses and overall crop management (Vashisth *et al.*, 2013; Ray *et al.*, 2017) [12, 9]. If the information on weather and the appropriate actions to be taken to cope with the future weather events is provided in advance, it could be helpful for the farmers to mobilize their own resources at the right time to reap the benefits.

Dissemination weather based agro advisory bulletins

Weather based advisories were directly sent to farmer's mobile number through mkisan portal. and send to the line departments as well as NGO officials for disseminating to the farming community.

Bulletins were also uploaded in website of IMD Pune, website of IMD, started voice message services for weather based agro advisories in collaboration with Reliance Foundation and creating awareness programmes.

Participating institutions

India Meteorological Department, New Delhi
Agricultural Universities.

Future plan of AAS dissemination

Preparation of District and Block level Agromet advisory Bulletins in Agromet-DSS and upload in Agrimet Pune website.

Develop linkage with District and block Agricultural Offices for soil, crop and p&d information and weather data from State Government network; and Dissemination of agromet advisories and weather alerts through extension workers of SDA.

Compilation of block level database for soil, crop and weather for use in Agromet advisories.

Enhancing outreach of advisories: (i) organize FAPs; (ii) Formation of 'Whatsapp' groups by DAMU to cover maximum number of farmers and villages; (iii) Explore service delivery through other agencies to farmers.

Uploading information on FAPs, Success stories in Agrimet websites every month to study monthly progress.

Farmers feedback collection: Event based and weekly/ fortnightly in real time & end of season and its analysis.

Recording of weekly soil moisture observations using gravimetric method.

Collection of soil profile information for the major soil type of each block.

Development of normal and subsequent analysis for various weather parameters for the district.

Application of climatology in identifying weather sensitive stages and remedies.

Impact analysis of agromet advisories.

Monitoring pests and diseases condition and use (develop) existing (new) forewarning models for generation of advisories.

In conclusion the weather based Agro advisories bulletins helpful for the farmers to mobilize their own resources at the right time to reap the benefits, by creating awareness. Agro advisories have helped the farmers to increase their knowledge about farming practices which includes information about modern technologies and best practices. Farmers, who follow these agro met advisories, are able to reduce the input cost and increases in the net profit. The application of weather based agro met advisory bulletin, based on current and forecast weather is a useful tool for reduce crop losses and enhancing the production and income.

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