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Sarvesh Baranwal
Subject Matter Specialist (Agromet)
Krishi Vigyan Kendra
Bejawan Bhadohi
Uttar Pradesh
India - 221 301

Vishvendu Dvivedi
Senior Scientist & Head (Agril Extension)
Krishi Vigyan Kendra
Bejawan Bhadohi
Uttar Pradesh
India - 221 301

Govind Kumar Chaodhary
Subject Matter Specialist (Veterinary)
Krishi Vigyan Kendra
Bejawan Bhadohi
Uttar Pradesh
India - 221 301

Rudal Prasad Chaudhari
Subject Matter Specialist (Agril. Ext)
Krishi Vigyan Kendra
Bejawan Bhadohi
Uttar Pradesh
India - 221 301

Corresponding Author
Sarvesh Baranwal
sarveshbaranwal@gmail.com

AWS: Boom in Agriculture

Weather and climate play the important role in agricultural output. It has a overpowering impact on the growth, development and yield of a crops. Pest and disease incidence, needs of water and fertilizer requirement in terms of differences in nutrient mobilization due to water stress and other cultural operations on a crop. Adverse weather has affected the quality of produce during transportation, viability and vigour of seed and also planting material at the time of storage. The quality and valuable properties of crop produce during movement from field to storage and transport to markets mostly depend on weather. Properly recording of weather data improve the better forecasting at small scale. Accurate forecasting has protected and enhances the farmer produce.

INTRODUCTION

For optimal productivity at a given location determines by cardinal phased weather requirement thereby concerned weather elements. In the changing of climate come the faster frequency of cyclone, drought, flood, hailstorm, cold wave, frost, heat wave etc. day by day increasing. Due to climate change, handling of weather & climate hazards in agriculture has become a major concern. Multiple climate threats for agriculture and food security have been identified by Intergovernmental of climate change, as well as the possibility for enhanced weather and climate early warning systems to aid farmers. Weather and climate data can help policymakers, institutions and communities make better decisions that reduce adverse weather risks and increase opportunities, improve the efficient use of limited resources and increase crops, live stocks and fisheries diversification & productivity. Drought, land degradation, inadequate water supplies, erosion, desertification, hail, early frost, flooding and many more adverse factors of weather and climate all of these lead to major agricultural loss. Effective weather and climate advisory services can help farmers make better decisions and manage their agricultural risks. Such services can aid in the development of environmentally

sustainable and economically viable agricultural systems as well as improving production, quality, reducing losses and risks, lowering costs, increasing efficiency in the use of water, labor and energy, conserving natural resources and reducing pollution, agricultural chemicals or other agents that contribute to environmental degradation. Farm advisory services based on weather and climate address farmers real time demands and contribute to weather based crop and livestock management. Crop production and food security are indeed the focus of strategies and operations.

AWS

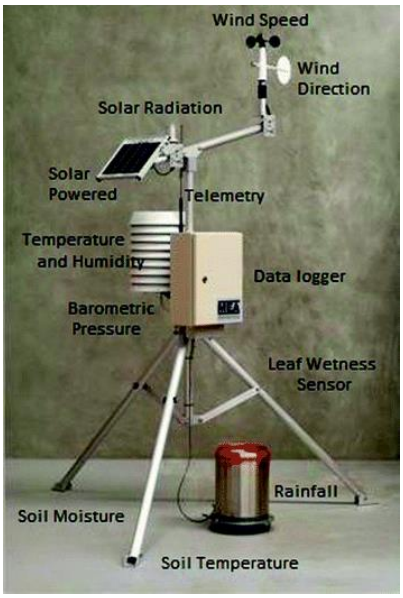
An acronym of AWS is Automatic Weather Station. They give observations on the most crucial parameters like humidity, air temperature, rainfall, solar radiation, wind direction, wind speed, temperature & moisture of soil, evapotranspiration, barometric pressure etc. AWS are designed and customized as per agricultural use. It is allow farmers, agro-meteorologist, agronomist and researchers to monitor must observed after be the status/condition that effect on health of plants in context of weather parameters. Analyzing the impact of adverse weather on crop as per regular monitoring of relationship between weather and crops. These are finally help the utilizing the weather data in crop. Weather relationship with agricultural operation to enhance production. For the all above mentioned challenges studied regards to weather and climate element measurement of temperature, rainfall, atmospheric pressure, humidity, wind speed, wind direction data is very much important to record. Adverse weather condition like cyclone, hailstorms, droughts, floods, hot weather, frost, cold wave *etc.* damage the crop due to lack of information about Even after hard work and exorbitant cost day and night, the farmers could not get the real benefit of the produce. Automatic weather station monitors various weather parameters and records them. In the Automatic Weather Station, a specific sensor is attached to it to take a record of different types of weather components AWS are designed and customized to allow that function primarily in that district level assessing agriculture and will monitor the main weather conditions that are more crucial for the health of the plants. And at the same time, will monitor the crops criticize condition due to adverse weather. Based on this real time alert will be flash on Meghdoot App for concern crops and also crop advisory issued for farmers in view of adverse weather conditions from Krishi Vigyan Kendra of the concern district. This equipment has been specially designed based on agriculture weather parameters. If the farmers get the information of the factors of uncertain whether events in advance, then the farmer can reduce the adverse effects caused by these factors in his crop. By assessing the current weather conditions and informing the farmers about the possible weather in the future, their crop losses can be saved. Krishi Vigyan Kendra has always been a priority for farmers to make advance plans for crop strategies in adverse weather. The basis of meteorological forecasts is kept on the data obtained from the weather observatory and on the satellite-based database itself, due to which the correct writing of data is very important.

SPONSORING INSTITUTE

For this purpose, under the jointly collaboration of the Indian Council of Agricultural Research, New Delhi and India Meteorological Department, New Delhi plan to set up the automatic weather station in each district under the agenda of District Agromet Unit. At present it is in the final stage of its completion in 200 districts. And remain district as soon will be setup for smooth functioning of Agro-meteorological work. This initiative of Government of India mainly; Farmers are being protected from the adverse effects of efficient use of water resources and severe weather such as cyclonic hailstorm, drought flood, frost, heat wave, overflow, unseasonal and cold wave etc. with the aim of taking advantage of favorable weather and increasing agricultural production. With the study and research on weather and climate and on this basis tackle the adverse weather condition in farmers field at the district level, automatic weather station is being established for the first time in every district for its benefits in agriculture, till now all the districts did not have weather observatory, which is all weather Record the parameter data, therefore, this commendable initiative of the Government of India is going to be associated with the establishment of an automatic weather station, a new link in agricultural development.

FOLLOWING ARE THE BENEFITS OF AWS

- Accurate information of each District's weather will be available,
- Through this, crops will be managed on the basis of actual weather data.



Automatic Weather Station

- There will be accessibility in assessing the actual geographical climatic conditions of the district.
- On the basis of data, KVK will issue advisory on farming and animal husbandry according to which farmers will be able to avoid losses by managing farming and animals.
- Help to determine the amount of water and irrigation by calculating the data of rain and evaporation, which will help to save water.
- The highest growth and development stage of the crops will be studied by it for the highest yields of future crops.
- Farmers will get accurate time for sowing, harvesting, and other best management practices of crops.

FOLLOWING PARAMETERS CAN BE TAKEN IN THIS WEATHER MACHINERY

- Daytime temperature (in degrees Celsius)
- Night temperature (in degrees Celsius)
- Atmospheric pressure (in milliliters)
- Maximum and minimum relative humidity (percent)
- Solar heat (in watts per square)
- Soil temperature and humidity (in degrees Celsius)
- Transpiration (mm)
- Wind speed (km/h)
- Wind direction (degree) and
- Rain (mm)

HOW IT WORKS

AWS is based on solar panel and it stored energy in the battery by solar. It will record all the parameters of the weather & transmit and store it in the data logger. It doesn't require electricity.

CONCLUSION

Quantitative and historical parameters give the valuable qualitative advice to the farming community. The study showed that agro-meteorological advisory were helped the farmers in reducing the cost of crop production and making the farmers self-confidence against adverse weather. Adoptions of agro-meteorological technologies among the farmers were contributed significantly in higher family income and livelihood of farmers.