

RESEARCH PAPER:

Validity testing of weather forecast received from IMD with real time data at ZARS. Sub-montane Zone, Kolhapur (M.S.)

S.V. DESHMUKH, U.S. KUDTARKAR AND B.S. JADHAV

Asian Journal of Environmental Science, (June, 2011) Vol. 6 No. 1 : 66-69

SUMMARY

The Zonal Agricultural Research Station at Kolhapur is recently sanctioned centre of the IAASU network from NCMRWF in 2005-06. The validity of weather forecast received from NCMRWF for monsoon and post-monsoon season was tested separately with real time data observed from station observatory. The ratio scores on Yes/No basis viz., Forecast Accuracy (ACC), Critical Success Index (CSI), Heidke Skill score (HSS), Hansen and Kuiper's (HK) scores were used for testing of only rainfall prediction. The predicted rainfall on Yes/No basis for both monsoon and post-monsoon periods was 84 per cent correct, whereas it was 81.2 per cent correct for post-monsoon and 71.3 per cent correct for monsoon period. The weather forecast for other parameters was tested with Critical Values for Error Structure as suggested by NCMRWF. On annual basis, the prediction of wind speed (29.4 %), wind direction (12.0 %) and Tmin (51.7 %) were having maximum correct events, whereas the predicted Tmax (26.1 %) and Cum. rainfall (48.7 %) were having maximum number of failure events. On seasonal basis, the predictions for Tmin (62.2 %), wind speed (47.0 %) and wind direction (8.7 %) during monsoon period and wind speed (11.8 %), cum. Rainfall (73.9 %) and Tmax (42.4 %) during post monsoon period were having higher percentage of correct events. However, the cum. rainfall (84.4 %) and Tmax. (29.6 %) during monsoon and wind direction (84.7 %) and Tmin. (32.9 %) during post monsoon period were having maximum number of failure events. The values of coefficient of determination $r^2 = 0.96$ in the regression analysis during post monsoon period indicated better accuracy in prediction of minimum temperature Likewise the rainfall event on July 26, 2005 was the most historical event in the Kolhapur since year 1975. The rainfall recorded on this event was 207.0 mm as against the predicted rainfall from NCMRWF was only to the extent of 25.0 mm. Such types of events at least need most accurate predictions in advances. It is therefore felt that the model needs modification in view of flood control measures and agricultural production.

See end of the article for authors' affiliations

Correspondence to :

U. S. KUDTARKAR
Regional Sugarcane and
Jaggery Research
Station, KOLHAPUR
(M.S.) INDIA
Umeshb4u59@
rediffmail.com

Deshmukh, S. V., Kudtarkar, U. S. and Jadhav, B. S. (2011). Validity testing of weather forecast received from IMD with real time data at ZARS. Sub-montane Zone, Kolhapur (M.S.). *Asian J. Environ. Sci.*, 6(1): 66-69.

Key words :

Weather forecast,
Validity testing,
IMD

Received:

February, 2011

Revised:

March, 2011

Accepted :

April, 2011

The Integrated Agro-Advisory Services Unit (IAASU) is the sponsored scheme by the India Meteorological Department, Ministry of Earth and Science, New Delhi. It is functioning at Zonal Agricultural Research Station at Kolhapur since November 2005-06. ZARS at Kolhapur is the major centre functioning for Sub-montane zone of Maharashtra with leading stations at Karad, Gadhinglaj and Vadagaon Maval in its jurisdiction. The zone consists of 24 Tahasils of 8 districts in Western Maharashtra. The name of zone itself indicates it as a transition stage between Western Ghat and Western Maharashtra Plain Zones.

The four-day weather forecast is received through fax from the IMD on every Tuesday

and Friday. It consists of eight weather parameters viz., rainfall (daily and cumulative), wind speed (kmph), wind direction (degrees), change in maximum and minimum temperatures, relative humidity morning and afternoon (%). The group of scientists from various disciplines discuss the weather of last week, forecasted weather and the present stage of crop or crop condition. On the basis, the package of practices to be adopted by the farmers following advance knowledge of weather is broadcasted in the form of Agro-Advisory Bulletin through All India Radio, Kolhapur. The advance knowledge of weather and the action plan suggested is important for the farmers for their farm planning. However,