

## Information system for weather parameters

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Weather plays an important role in agricultural production. It has a profound influence on the growth, development and yields of a crop, incidence of pests and diseases, water needs and fertilizer requirements in terms of differences in nutrient mobilization due to water stresses and cultural operations in crops. Tobacco is an important cash crop grown in 15 states of India with an annual production of 750 million kg leaf standing 2nd in the world after China. The crop fetches more than Rs. 25,000/- crores to the national exchequer in the form of central excise revenue and foreign exchange. Central Tobacco Research Institute has been collecting weather data from 1960 and records are prone to damage and retrieval of data in required format is difficult. An appropriate information system was developed for weather data management. The information system was developed using Visual Basic .Net as front-end application and Oracle as back-end application with user-friendly menus to retrieve the information in any form for utilization in developing forecast models in agriculture. The information collected for designing the database included 10 parameters viz., Maximum and minimum temperature, Soil temperature, Vapour pressure, Relative humidity, Sunshine hours, Total rainfall, Number of rainy days, Wind velocity and Evaporation. The database was designed in the form of a decision tree and an algorithm was developed to classify the data and perform the computations to obtain the required results. The multiple document interface (MDI) form of the software consists of 6 options, viz 'Data Entry', 'Delete', 'View', 'Reports', 'Backup / Restore' under 'Main' button. The 'Reports' option consists of 5 sub options, namely 'Daily / Weekly / Monthly / Annual and Periodic'. For executing this software, a PC with pre-loaded software of Visual Basic .Net and Oracle are essential. The user is allowed to retrieve the required data on any combination of weather parameters in the form of hard / soft copy which will be displayed in the text along with graphs which is easy for comparison. The software developed in the present studies was highly useful in maintaining the information collected for the last 60 years and also retrieve the information in different combinations for application in tobacco cultivation and also to develop weather based forecast for other crops cultivated in those areas.

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