FUNDAMENTALS OF AGRICULTURAL CLIMATOLOGY

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AGROBIOS (INDIA)
The well being of a country depends on the way in which it uses its natural resources. True development always strikes a judicious balance between immediate and long term requirements. Agricultural meteorology, as the name suggests, related to study of agricultural activities and the climate. Agriculture constitutes the backbone of India’s economic life. The patterns of agricultural activities have a close bearing on the rural life of India. The application of Agrometeorological techniques is fast increasing, together with the integrated approaches of scientists of different disciplines during the past few decades. Agrometeorology is an inter-disciplining subject and has now developed into a full-fledged discipline. The teachers and researchers in the subject require a thorough knowledge both of meteorology and climatology in relation to agriculture. The science of agrometeorology has an important role to play in modern agriculture through education, research and extension services.

At the beginning of the study of any discipline it is necessary to know what that discipline involves, the approaches it contains and the purpose of its study. The authors have put their sincere efforts to deal with the subject in the context of modern technology. The usefulness of agrometeorology in various aspects of agriculture is described vividly in different chapters.
I wish that the contents of the book will be highly informative and useful to the students, scientists and the interested readers.

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Climate is a systematic sequence of atmosphere processes which arises in a given locality as a result of the interaction of the solar radiation, atmospheric circulation and physical processes occurring in the underlying surface and imports to this locality its characteristics weather regime. In other words climate reflects the perennial weather regimes; its study is based on the observations of meteorological stations over many years. The basic and the most common characteristics of climate are the mean for many years and recurrence of the most important meteorological elements such as atmospheric pressure, precipitation, wind directions and velocity, duration of sunshine and thickness of snow covers etc.

Climatological operations may be of general interest or intended for special purpose. Agricultural meteorology is the branch of science that concern itself with the influence of weather and climate on the cultural conditions of agricultural plants, animal husbandry, the occurrence of detrimental influence and especially on agricultural operations and methods in general.

The knowledge of regional climate is very much essential for selecting the suitable crop and cultivar in the particular region. Impact of climate and its variability on agricultural production are well known. Regional climate plays an important role in the economy of the state and even of the country. As we know that crop production and its quality depends mainly on prevailing weather and climatic conditions. Nearly three fourths of the annual losses in crop production are caused due to unfavorable weather and climatic conditions. The losses could be due to floods, prolonged dry spell, drought, hot/cold waves,
frost, and hail storm and insect-pest-disease infestations. Losses could be minimized by systematically adopting various climatological approaches in regional crop planning. Authors have put their fullest efforts for collection of the latest information on climate-crop planning at one place by various chapters like Agroclimatological approaches in rainfall, drought, clouds effect of weather and climate on agricultural production, characterization of agricultural climate, Indian monsoon, fields of agroclimatology, hydrometeorology, drought climatology, climate change and agriculture, animal climatology for natural resource management.

The collective efforts of Authors to bring out this book on Fundamental of Meteorology and Climatology are highly appreciable. This information is really very much useful to students studying agriculture at graduate and Post-graduate level and persons engaged in crop planning and its management.

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The climate of a particular region is a natural resource and remained unexploited unlike soil and plant in agriculture. Crop-climate management studies have progressed fast, both in its contents and applications. Recent latest development has shown that the climate as a resource has a greatest potential to increase food production. Weather and climate both treated as basic inputs in agricultural planning. Therefore, present book is written with an intention to provide basic information on meteorology and climatology to the students of agriculture, forestry, horticulture, ecology, geography, hydrology, environmental science, for various competitive examinations such as NET, GPSC, ARS etc. and persons working in crop planning and agriculture management.

The present book contains 22 chapters fundamental topics concerning to meteorology and climatology such as various Agroclimatological approaches in water management, effect of weather and climate on agricultural production, global warming, climate change, remote sensing, Indian monsoon, hydrometeorology, drought climatology, animal climatology and glossary of climatology and question bank.

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