Journal of Agrometeorology 10(2) : 107- 112 (Dec. 2008)

Policy paper

Policy support for capacity building in weather and climate services focused on agriculture

KEES STIGTER
WMO/CAgM Coordinator for Policy Support in Capacity Building
Email: cjstigter@usa.net

Journal of Agrometeorology 10(2) : 113- 117 (Dec. 2008)

Physiological response of wheat (*Triticum durum* L.) to limited irrigation

K. D. SHARMA and R. K. PANNU
Department of Agronomy,
CCS Haryana Agricultural University, Hisar-125 004 (India)
E-mail: kamald@hau.ernet.in

ABSTRACT

A field study was conducted at CCS Haryana Agricultural University, Hisar, during two consecutive *rabi* seasons of 2002-03 and 2003-04 on wheat genotypes. The main plots treatment consisted of three irrigation schedules viz., normal irrigation (Control), two irrigations at 45 and 85 DAS (limited irrigation) and no post sowing irrigation (rainfed) and in sub-plots five genotypes were grown namely WH 896, WH 912, WHD 935, WHD 936, PDW 233, Raj 1555. The restricted irrigation decreased the leaf water potential (LWP), canopy temperature depression (CTD), transpiration rate, stomatal conductance and photosynthesis significantly over irrigated control, while, significant increase was observed in plant water retention. Reduction in grain yield under rainfed condition was 23.4 per cent. Reduced irrigation application decreased the yield attributes with maximum reduction in number of grains per spike. Genotype PDW 233 yielded significantly higher than all other tested genotypes. It maintained higher plant water status and higher rate of photosynthesis than other genotypes.

Key words: Canopy temperature depression, photosynthesis, stomatal conductance, wheat.

Journal of Agrometeorology 10(2) : 118- 122 (Dec. 2008)

Assessment of moisture stress using water requirement satisfaction index in *kharif* maize

G. JAYASREE, D. LINGAIAH, D. RAJI REDDY and S.B.S. NARASIMHA RAO
Agromet-cell, Agricultural Research Institute,
Acharya NG Ranga Agril.University, Hyderabad-500 030
Email : gyayasree2001@yahoo.com

ABSTRACT

A field experiment was conducted to study the impact of moisture stress at different growth phases in maize using Water Requirement Satisfaction Index (WRSI) during *kharif* 2004 at Agricultural Research Institute (ARI) farm, ANGRAU, Rajendranagar. The experiment was laid out in RBD (Factorial) with four dates of sowing starting from onset of monsoon at 15 days interval and four "irrigation

schedules" *viz*. irrigation as per water requirement, skipping of irrigation at vegetative, flowering stages and rainfed.. Reduced yields were recorded when irrigation was withdrawn during reproductive phase. A significant positive correlation between WRSI and yield was observed (r = 0.79). Higher WUE was observed with skipping of irrigation at vegetative stage and in rainfed treatments.

Key words: Water Requirement Satisfaction Index (WRSI), AET, WUE and yield

Journal of Agrometeorology 10(2) : 123- 126 (Dec. 2008)

Trends and variability in northeast monsoon rainfall over Kerala

K.N. KRISHNAKUMAR and G.S.L.H.V. PRASADA RAO
Dept. of Agricultural Meteorology, College of Horticulture,
Kerala Agricultural University, Vellanikkara, Thrissur-680 656, Kerala
Email : kauagmet@yahoo.com

ABSTRACT

Monthly rainfall over Kerala state showed an increasing tendency during October and November with a decrease in December. Such trend was more evident since 1961 onwards. Overall, over Kerala State, there was an increase of 96.7 mm in northeast monsoon rainfall over a period of time, indicating an increase of 20.1 per cent against the normal rainfall of 481.5 mm and significant at 5 per cent level. Rainfall during December was highly variable and undependable, which is of great concern in plantation crop production of the State of Kerala. As a whole, 34.0 per cent (46 years out of 135) of the years recorded either excess or deficit rainfall**.** The monthly rainfall range as well as its variability was less during excess rainfall years when compared to that of deficit rainfall years**.** The study also revealed that El Nino/La Nina events had weak teleconnection with excess/deficit northeast monsoon rainfall over Kerala.

***key words*:** Northeast monsoon, trends, coefficient of variation

Journal of Agrometeorology 10(2) : 127- 135 (Dec. 2008)

Testing homogeneity, stationarity and trend in climatic series at Udaipur – a case study

DEEPESH MACHIWAL and ARUN SHARMA
SWE Department, College of Technology and Engineering, MPUAT, Udaipur – 313 001 (Raj.)
Email : dmachiwal@rediffmail.com

ABSTRACT

Three seasonal climatological time series, i.e., rainfall, minimum temperature, and maximum temperature of Udaipur in three seasons, i.e. summer, rainy and winter were tested for the presence of homogeneity, stationarity, and trend components. Box plot indicated normality in the rainy season rainfall. Minimum temperature series of rainy season was more uniform and normal than summer and winter season time series. Maximum temperatures during rainy season follow normal distribution. Homogeneity of seasonal time series was tested by using von-Neumann, Cumulative Deviations and Bayesian tests, which indicated that all seasonal rainfall and maximum temperature time series were homogenous. Homogeneity was present only in summer and rainy season minimum temperature time series. Stationarity and trends in the time series were detected by using Mann-Whitney test and Mann-Kendall test, respectively, which suggested that stationarity was present in all seasonal maximum and minimum temperature, and winter season rainfall time series and absent in summer and rainy

season rainfall time series. Based on the results of Mann-Kendall tests, all the time series under study were free from any kind of trend.

Key words: Climatic time series, homogeneity, stationarity, trend.

Journal of Agrometeorology 10(2) : 137- 140 (Dec. 2008)

Micro-meteorological variations and Rain water-use efficiency of a Silvi-pastoral system

A.S. RAO

Central Arid Zone Research Institute, Jodhpur-342 003
Email : asrao@cazri.res.in

ABSTRACT

The solar radiation disposition, soil moisture depletion pattern and rain water-use efficiency of a silvi-pastoral system at Jodhpur were studied during 2000 to 2003. Factorial combination of a pasture viz., *Cenchrus ciliaris* and a fodder shrub viz., *Colophospermum mopane and with two trees* viz., *Hardwickia binata* and *Prosopis cineraria* at two levels of nitrogen (N_o and N_{20}) were tried. The intercepted insolation varied from 54 to 80% depending upon the leaf area index (0.65-1.40). The albedo varied from 20.3 to 24.4%. Soil moisture depletion was more in all fertilized than unfertilized plots of legume, grass and tree combination treatments. The rain water-use efficiency (WUE) was higher in fertilized plots of *C. ciliaris* (3.37-14.05 kg DM ha^{-1} mm^{-1}) compared to unfertilized plots (2.65-9.71 kg DM ha^{-1} mm^{-1}) and it was highest in combination of grass and legume compared to sole components.

Key words*:* Solar radiation disposition, soil moisture depletion patterns, rain water-use efficiency, silvi-pastoral system.

Journal of Agrometeorology 10(2) : 141- 145 (Dec. 2008)

UV-B radiation in the tropical monsoon climates

G.S.L.H.V. PRASADA RAO, C. S. GOPAKUMAR and K. N. KRISHNAKUMAR

Department of Agricultural Meteorology, College of Horticulture
Kerala Agricultural University, Vellanikkara., Thrissur-680 656, Kerala, India.
Email : kauagmet@yahoo.co.in

ABSTRACT

The UV-B radiation was of the order of more than one MED/hr between 10.30 a.m. and 2.30 p.m., reaching to its maximum of more than two and two-and-a-half MED/hour for about two to three hours during the peak noon hours. It crossed even more than 3MED/hr on 12.9.2002. It was high in the year 2002 when compared to that of 2003, 2004 and till June, 2005. Interestingly, the intensity of UV-B radiation was high (29.8%) in the range of more than 2MED/hr during September. Again, it was more so in the year 2002. Whether high UV values in 2002 could be due to all India drought? All the UV phenomena could be attributed to low level of ozone in addition to meteorological factors. Hence, it is suggested that protective measures round-the-year against the sun rays between 10.30 a.m. to 2.30 p.m. may be adapted to avoid the high intensity of UV-B radiation under the tropical monsoon climate since it has harmful effects on living organisms over the Earth's surface.

Key words : UV-B radiation**,** Minimum Erythema Dose, Ozone depletion

Journal of Agrometeorology 10(2) : 146 - 150 (Dec. 2008)

Productivity and radiation use efficiency of tea grown under different shade trees in the plain land of West Bengal

A. MUKHERJEE[1], S.BANERJEE[2] and S. SARKAR[3]

[1] Agromet Advisory Service, [2] AICRP on Agrometeorology

[3]Department of Agricultural Meteorology and Physics, B.C.K.V., Mohanpur, Nadia

Email:aas_kalyani @yahoo.com

ABSTRACT

Tea is grown under shade trees at higher elevation to attain better quality and higher productivity of the leaf. Hence, a field study was carried out to study the influence the shade trees on productivity and radiation use efficiency of the tea, when grown under plain at the Krishi Ban (Tea garden) of Bidhan Chandra Krishi Viswavidyalaya, Gayespur, West Bengal (Latitude 22^0 $58^/$ N, Longitude 88^0 $31^/$ E, altitude 9.75 m amsl). Different shade trees namely *Acacia auriculiformis, Albizia lebbeck, Dalbergia sissoo, Glyricidia sepium, Casuarina equisetifolia, Gmelina arborea and Eucalyptus hybrid* were taken for screening. Observation on yield and components of Photosynthetic Active Radiation (PAR) were taken at four periods. Each period began from one day after a plucking date and continued to the next plucking date. In total there were four periods as: Period I (7.9.01-3.10.01), Period II (4.10.01-13.11.01), Period III (14.11.01-22.2.02) and Period IV (23.2.02-19.3.02). Irrespective of periods, maximum productivity level (398.1 Kg ha^{-1}) of tea was attained under *Dalbergia sissoo* and it was minimum (271.7 Kg ha^{-1}) under *Glyricidia sepium*. Irrespective of periods the highest level (0. 438 g MJ^{-1}) of radiation use efficiency (RUE) was attained under *Gmelina arborea*. Tea grown under *Glyricidia sepium* and *Casuarina equisetifolia* resulted lowest RUE value.

Key words: Tea, radiation use efficiency, productivity

Journal of Agrometeorology 10(2) : 151- 157 (Dec. 2008)

Microclimatic profiles in soybean- pearl millet intercropping systems

MOHAMMAD SHAMIM*, RAJ SINGH, V.U.M.RAO and DIWAN SINGH

Department of Agricultural Meteorology

CCS Haryana Agricultural University, Hisar-125 004, Haryana

ABSTRACT

A field experiment was conducted during *kharif* season of 2003-2004 at research farm of department of Agril Meteorology, CCS HAU, Hisar located at 29º102 N lat75º462 E. long and 215.2 m above the MSL The experiment comprising eight treatments was laid out in a RBD with three replications. The crop was sown as rain fed in the last week of June. The temperature and relative humidity profiles were measured at four phenophases using Assmann's psychrometer. Air temperature profiles in all treatments were inverse throughout the day in comparison to the bare field. Relative humidity was higher in the crop canopy than above crop canopy in all the treatments but after harvest of pearl millet, the slope was less than that in the earlier growth phase. Leaf area index, dry biomass accumulation, test weight, yield and harvest index were reported for all the treatments.

Key words: Microclimate, bare soil, intercropping

Journal of Agrometeorology 10(2) : 158 - 164 (Dec. 2008)

Length of crop growing season and budgeting of soil moisture for intercropping strategies in cotton*

P. RAGHU RAMI REDDY and SHAIK MOHAMMAD[1]
Agricultural Research Station, Warangal – 5006 007
[1] College of Agriculture, Rajendranagar, Hyderabad-500 030
Email : pakanati_raghu@yahoo.co.in

ABSTRACT

An estimation of rainfall curve through P/PET revealed that the crop growing season ranged from 22 to 44 standard week at Warangal. (Andhra Pradesh, India). Dependable rainfall at 75% probability prevailed from 24 to 38 standard week. The budgeting of water showed that there was no deficit of soil moisture until 37 standard week during two years study. Long duration crop of cotton intercropped with early maturing cowpea, greengram or blackgram significantly enhanced seed cotton equivalent yield over sole cotton. The rainfall in the later period was short of actual evapotranspiration. Therefore intercrops of longer duration viz., sesamum maturing in 75 days, soybean in 91 days and groundnut in 105 days were highly competitive and did not increase the seed cotton yield equivalents over the sole crop.

Key words: Precipitation curve, dependable rainfall, water balance, cotton-intercrops

Journal of Agrometeorology 10(2) : 165- 169 (Dec. 2008)

Assessment of production potential of rice with and without moisture stress in clayey soil using CERES-Rice model

***SOMNATH CHOUDHURY[1], ASRAS SASTRI[2], R. SINGH[2], S.R. PATEL[2] and DIWAKAR NAIDU[2]**
[1]Raj Mohini Devi College of Agriculture & Research Station,(I. G. K. V.), Ambikapur Chattisgarh
Krishi Vishwavidyalaya, Raipur Chattisgarh
Email : somu4ap@yahoo.com

ABSTRACT

CERES-Rice model incorporated in DSSAT ver 3.5 was used to simulate the rice (var: IR 36) yields for the period 1973-2002. The input data required for running the model viz., soil and weather data were collected from the Departments of Soil Science and Agrometeorology of Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur, respectively.

The results revealed that the potential yields of rice varied from 81.97 to 105.50 q ha^{-1} and 39.74 to 89.49 q ha^{-1} under irrigated and rainfed conditions respectively during the study period. If years of different rainfall situations were considered the yield reduction due to water stress under rainfed conditions ranged from 3.87 to 61.44 q ha^{-1} as compared to irrigated conditions indicating that under good rainfall conditions the rainfed rice yields are as good as irrigated rice yields.

Key Words: CERES-Rice model, yield potential, water stress

Journal of Agrometeorology 10(2) : 170- 174 (Dec. 2008)

Studies on date of initiation of late blight of potato based on disease progress curve

GAUTAM SAHA[1], LEDONG LEPCHA[1], M.K.NANDA[1], J.TARAFDAR[2] and S. CHAKRABORTY[3]

[1] Department of Agril.Meteorology , [2] Department of Plant Pathology, [3]Department of Agril. Entomology
B.C.K.V., Mohanpur, Nadia,West Bengal-741252
Email : gsagmet@yahoo.co.in

ABSTRACT

A field experiment was conducted at to study the date of initiation of late blight (*Phytopthora infestans*) of potato based on disease progress curve for five (5) different dates of planting. The date of disease initiation was predicted by backward extrapolation of disease progress curve to a point at which the curve intersects the X-axis (i.e. days after planting). It was evident that the days required for initiation of disease was more in earlier dates of planting than the late planting treatment. The accumulated BSS and GDD could be used effectively to predict the date of disease initiation.

Key Words : Disease progress curve, Initiation of late blight of potato

Journal of Agrometeorology 10(2) : 175- 177 (Dec. 2008)

Influence of weather parameters on the population dynamics of sesbania thrips *(Caliothrips indicus* Bagnall) in groundnut in Saurashtra region

V. NANDAGOPAL, T.V.PRASAD, M.V.GEDIA and A.D.MAKWANA

National Research Centre for Groundnut, P.O. Box 5, Ivnagar Road, Junagadh-362001
Email : tvprasad@nrcg.res.in

ABSTRACT

Caliothrips indicus Bagnall commonly known as sesbania thrips is one of the serious pests of groundnut in Saurashtra region causing extensive losses. Regression analysis of populations of *Caliothrips indicus* for five consecutive years (1994-1998) at Junagadh in Saurashtra region of Gujarat were used to develop forecasting model in relation to weather parameters. Using regression equation the predicted values of occurrence of thrips were calculated from 1999 to 2002. There was minimum deviation between the actual and predicted values of thrips population during certain months, indicating the feasibility of predicting the population occurrence using the prevailing weather factors.

Key words*: Caliothrips indicus,* Weather parameters

Journal of Agrometeorology 10(2) : 178 - 183 (Dec. 2008)

A modified approach for determination of onset and withdrawal of monsoon

A.K.KOTHARI, VIRENDRA KUMAR[1], P.M.JAIN, and R.C.PUROHIT[1]

AICRP on Dryland, Dryland Farming Research Station, Post Box 62, Bhilwara – 311001,
[1]College of Technology and Engineering, Udaipur -313001

Email: kothari_anil23@ yahoo.co.in

ABSTRACT

Onset of monsoon is an important rainfall characteristic for drought management and crop planning. Morris and Zandstra method for onset was compared with observed values for a period of 20 years, which revealed a mismatch in the Bhilwara region in 40 per cent of years. The criteria for rainfall accumulation for both onset and withdrawal was modified in such a way that the determined and observed onset of monsoon showed a significant match. For early and late onset of monsoon and intermittent low /nil rainfall weeks. Withdrawals were adjusted and length of growing period for Bhilwara region was determined.

Key words: Onset of monsoon, withdrawal of monsoon, length of rainy season, crop planning

Journal of Agrometeorology 10(2) : 184 - 187 (Dec. 2008)

Frequency analysis of water deficit for crop planning in Gujarat

B.S. DEORA* and R.V. SINGH

College of Engg and Technology, MPUAT, Udaipur-313 001

Email : deorabs@sdau.edu.in

ABSTRACT

The frequency analysis of extreme weekly water deficit in different Agro-climatic Zones of Gujarat using the three most common distributions have been computed. $\div^2$ test for goodness of fit of the observed data to the theoretical distribution was also performed. The distribution that gave the lowest chi-square value has been selected as the best for that location and the predicted maximum weekly water deficit values have been reported.

Key words: Extreme, agro-climatic zone, distributions, return period.

Journal of Agrometeorology 10(2) : 188- 192 (Dec. 2008)

Rainfall analysis in relation to rice crop for Jaintia Hills district of Meghalaya

B. GOSWAMI, O. P. SINGH[1], K. K. SATAPATHI and UDAY S. SAIKIA

Division of Agricultural Engineering
ICAR Research Complex for NEH Region, Umiam 793 103, Meghalaya
[1]Centre for Environmental Studies
North Eastern Hill University, Shillong, Meghalaya
Email : ussaikia@yahoo.com

ABSTRACT

The long term rainfall data for Sali rice season (June-November) of Jaintia Hills district, Meghalaya has been analyzed to estimate expected weekly rainfall at various probability levels. Based on expected rainfall at 50 and 75% probability levels and water requirement, a crop calendar for Sali rice has been prepared for the district. The calendar is assumed to be applicable for the whole district irrespective of terrain differences as rice is mostly grown in comparatively plain lands in bunded condition. 22nd to 24th meteorological weeks have been suggested best for sowing/transplanting to

avoid any kind of water stress during the critical growth periods. Amount of water required to maintain at least 5 cm of standing water in the field up to the dough stage has also been clacilated.

Key words: Crop calendar, probability, rice, water requirement

Journal of Agrometeorology 10(2) : 193- 197 (Dec. 2008)

Rainfall analysis and crop planning in lower Shiwalik foothills of Punjab

PARVENDER SHEORAN, SOM PAL SINGH[1] and VIRENDER SARDANA

Oilseeds Section, Department of Plant Breeding, Genetics and Biotechnology, [1]Department of Agril. Meteorology,
PAU, Ludhiana-141 004, Punjab
Email : sheoran76@rediffmail.com

ABSTRACT

Daily rainfall data of 21 years (1984-2004) recorded at RRSKA, Ballowal Saunkhri, District Nawanshahr, Punjab was examined for long term averages of annual, seasonal, monthly and weekly rainfall and its temporal variability. Coefficient of variation of 27.1 per cent indicated that the annual rainfall was more or less stable over the years. The season-wise per cent contribution to annual rainfall was 7.2, 13.2 and 79.6 per cent of summer, *rabi* and *kharif* seasons, respectively. With in the rainy season, August was the highest rainfall contributing month (35.8%) followed by July (35.4%). Mean weekly precipitation amount and its assurance reaches the peak (>50 mm/week) during 27th SMW to 36th SMW and again declined thereafter. The earliest onset of rainy season occurred in 24th SMW. The normal onset of rainy season was observed as 26th SMW with CV of 5.2 per cent. There is an ample scope for rain water harvesting from July to September which can be utilized as crop saving irrigation as well as pre-sowing irrigation for succeeding *rabi* crops which are generally sown on residual soil moisture.

Key words: Rainfall pattern, probability analysis, crop planning

Journal of Agrometeorology 10(2) : 198- 203 (Dec. 2008)

Rainfall distribution pattern and crop planning at Pusa in Bihar

K. A. SINGH , A. K. SIKKA and SUCHIT K. RAI[1]

ICAR Research Complex Eastern region WALMI, Complex Phulwari Sarif , Patna - 801505

[1]Indian Grassland and Fodder Research Institute, Jhansi-284003
Email: Suchitrai67@yahoo.co.in

ABSTRACT

Daily rainfall data of fifty two years (1952-2004) have been analyzed for establishing the long term averages of weekly, monthly, seasonal and annual rainfall and its variability. The annual rainfall at Pusa was 1222.3 mm and coefficient of variability indicated that rainfall was more or less stable over the years. Monthly rainfall had unimodel peak, July receives maximum rainfall of 331 mm followed by August (298.5 mm). The stable rainfall period was of 9 weeks, which spread over 27 to 37th standard meteorological weeks (SMW) except 32nd and 34th SMW. The average

duration of rainy season is from 26 to 40th SMW. The initial and conditional probability of receiving 10 mm and 20mm weekly rainfall revealed that dependable rainfall occurs between 25 to 37th weeks. At 75% probability level rainfall of 9.5 mm can be expected to occur during 25th week. These pre-monsoon rains at 75 % probability level can be utilized for seedbed preparation for raising rice seedlings. Since, at 50% probability level, rainfall during 22 to 24th SMW ranges from 8.8 to 13.8 mm, thus summer crops (cowpea, black gram, green gram, maize and direct sown rice etc) could also be grown successfully in this region with supplemental irrigation.

***Key Words*:** Rainfall pattern, initial and conditional probability and crop planning

Journal of Agrometeorology 10(2) : 204- 208 (Dec. 2008)

Heat and radiation use of chickpea(*Cicer arietinum L*) cultivars under varying sowing dates

A.K.SINGH, P.TRIPATHI, SHABD ADHAR and SHEOBARDAN
Department of Agricultural Meteorology
Narendra Deva University of Agriculture and Technology (Kumarganj), Faizabad-224 229 (U.P.)
Email : pmtmausam@india.com

ABSTRACT

A field experiment was conducted during rabi (winter) season of 2004-05 and 2005-06 to study the heat and radiation use of chickpea cultivar in sandy loam soil at Faizabad,(Uttar Pradesh, India). The experiment consisted of three sowing dates viz sowing on Oct 20, Nov 05 and November 20 with four varieties viz. K-850, Awarodhi, Uday and Radhey. Results revealed that sowing on Nov 05 produced significantly higher yield attributes as well as related higher heat and radiation use efficiencies. The dry matter accumulation and number of branches/plant were higher in K-850 followed by Radhey while their lower values were obtained in Uday variety of Chickpea. Day temperature was highly correlated (R^2=0.79) with dry matter than night temp. (R^2=0.68). Highest dry matter was recorded at day temperature 29.4 ^oC, night temp. 22.4 ^oC and average temp. 25.9 ^oC.

Key words: Growing degree days, radiation/ heat use efficiency, chick pea.

Journal of Agrometeorology 10(2) : 209- 212 (Dec. 2008)

Heat unit requirements for phenophases of wheat genotypes as influenced by sowing dates

A.K. SINGH, P. TRIPATHI and SHABD ADHAR
N.D. University of Agriculture & Technology, Kumarganj Faizabad (U.P.) – 224 229
Email : pmtmausam@india.com

ABSTRACT

A field experiment was carried out during winter season of 2002-2003 and 2003-2004 on the silty loam soil at Faizabad (U.P.) with three wheat genotypes viz, HUW-234, HD-2285 and HP-1633 sown at three different times viz., 5 November, 20 November and 5 December to assess the Heat unit requirements for phenophases of wheat genotypes as influenced by sowing dates. Results revealed that wheat sown on 5 November and 20 November recorded higher accumulated GDD, Heliothermal units, photothermal units and phenothermal index at all the phenopheses over sowing done on December 5th in which higher yield of wheat. Higher thermal units under 5 November and 20 November sowing were not found conducive for a better yield of

wheat crop. Lesser value of cumulative PTI during crop period produces higher grain yield in December 5th sowing.

Key words: Growing degree days, heliothermal unit, photothermal units, phenothermal index, genotypes.

Journal of Agrometeorology 10(2) : 213- 217 (Dec. 2008)

Rainfall probability analysis using Markovchain model in Sabour region of Bihar

P.K.SINGH, L.S.RATHORE, K.K.SINGH, A.K.GUPTA, A.K.BAXLA and B. ATHIYAMAN

NCMRWF, Ministry of Earth Sciences, A-50, Institutional Area, Sector-60, NOIDA-201307, U.P.

Email : pksingh@ncmrwf.gov.in

ABSTRACT

Rainfall during monsoon season and its variability govern the cropping system in the Sabour region. Long-term rainfall data is used to analyse the probability of occurrence of deficit /normal /excess rainfall for better crop planning in the region.

During the 30 years (1972-01) there were about 13 per-cent drought, 10 per-cent flood and 77 per-cent normal years. Among drought years southwest monsoon rainfall was the lowest (646 mm) in 1977. Seed sowing in paddy nursery in the Sabour region generally takes place immediately after onset of monsoon rains during 23-25 standard meteorological weeks and transplanting is carried out around 27th or 28th standard week. The tillering, 50 per-cent flowering and dough stage are observed during 32-33rd, 37-38th and 40-41st standard weeks respectively.

Key words: Rainfall, drought, seasonal rainfall, *kharif* season, *rabi* season, monthly rainfall and weekly probability