

reduced nitrate and oxalic acid content. Application of 150 kg N through pressmud increased the shelf life, peel and seed weight per fruit with decreased moisture content. Control recorded lower gross and net returns, benefit cost ratio and yield. Application of 150 kg N in the form of urea recorded higher oxalic acid, nitrate and moisture content with decreased juice, peel content, seed weight and shelf life of tomato fruits.

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Research Notes

Twenty seven stars and seasonal rainfall forecast

R. KARTHIKEYAN, R. RAJA AND T.N. BALASUBRAMANIAN

Dept. of Agril. Meteorology, Tamil Nadu Agricultural University, Coimbatore - 641 003, Tamil Nadu

An indigenous knowledge is one that was built from thousands of years of experience and is a unique to a given culture and religion. This knowledge is being used from times immemorial by our forefathers for forecasting events such as weather, monsoon, optimum time for starting agricultural operations, etc. Almanacs, (Mishra and Dubhey, 1997) is based on astronomy in which stars (Naksatra) contribute a major part for predictions.

In order to find out the influence of stars on seasonal rainfall, an analysis was made at Department of Agricultural Meteorology, Tamil Nadu Agricultural University, Coimbatore-3 (11°N latitude and 77°E longitude) of Tamil Nadu. With the help of almanac (Panchanga), daily rainfall data were collected against 27 stars for 10 years (1991-2000) and the data were then grouped into seasonal (Cold Weather Period, Hot Weather Period, South West Monsoon and

North East Monsoon) data. Thus grouped seasonal rainfall data were vibratd for initial probability analysis at 30, 50 and 75 per cent levels and the results are presented as follows.

Considering the 30 per cent probability level, none of the star did influence the rainfall amount during Cold Weather Period (CWP) whereas Revathi star had offered higher chance for getting 13.0 mm of rainfall during Hot Weather Period (HWP). The stars like Miruhasirisham (11.4 mm), Kiruthigai (11.1 mm), Pooradam (9.1), Kettai (5.8), Uthirattath (5.5), Moolam (4.5) and Aailyam (3.5) also did influence the rainfall though not like Revathi star. During South West Monsoon (SWM) period the star, Maham showed greater influence on rainfall upto 22.5 mm. The other stars namely Kirithigai, Miruhasirisham, Punarpoosam, Poosan Astham, Chittirai, Swathi and Anusham did influence rainfall with a range between 10 and

Table 1. Stars Vs seasonal rainfall - a probability analysis at Coimbatore (Rainfall in mm)

Sl. No.	Stars	CWP			HWP			SWM			NEM		
		30	50	75	30	50	75	30	50	75	30	50	75
1.	Aswini	0	0	0	1.5	0	0	8.0	4.0	1.0	6.8	4.0	2.0
2.	Barani	0	0	0	4.0	0.5	0	3.5	1.5	0	18.4	12.0	0.5
3.	Kiruthigai	0	0	0	11	0	0	17.8	6.0	1.0	3.0	1.2	0.5
4.	Rohini	0	0	0	2.5	0	0	10.0	7.0	1.5	8.0	2.5	0
5.	Miruhasirisam	0	0	0	11.4	4.2	0	10.8	3.0	0.2	8.0	0	0
6.	Thiruvathirai	0	0	0	0	0	0	3.8	2.8	0	43.5	30.8	4.5
7.	Punarpoosam	0	0	0	2.0	0.5	0	16.5	7.5	0.5	22.0	10.0	1.2
8.	Poosam	0	0	0	2.5	0	0	13.0	6.0	1.0	29.0	12.5	0
9.	Aailyam	0	0	0	3.5	0	0	7.0	4.2	1.5	21.6	6.5	4.2
10.	Maham	0	0	0	0	0	0	22.5	15.7	7.0	12.5	5.6	0
11.	Pooram	0	0	0	6.0	0	0	9.5	6.5	0.6	22.0	12.5	6.0
12.	Uthiram	0	0	0	2.5	0	0	21.0	6.4	1.2	46.0	27.3	0
13.	Astham	0	0	0	3	0	0	13.0	10.5	0	26.3	20.6	2.0
14.	Chittirai	0	0	0	0	0	0	13.8	6.0	2.0	44.0	13.0	7.1
15.	Swathi	0	0	0	0	0	0	12.0	1.0	1.2	17.0	13.0	7.1
16.	Vishaham	0	0	0	0	0	0	3.0	2.5	0	5.8	5.0	0.3
17.	Anusham	0	0	0	0	0	0	13.0	8.8	1.0	18.2	3.8	0
18.	Kettai	0	0	0	5.8	0	0	6.0	1.5	0	15.7	7.0	0
19.	Moolam	0	0	0	4.5	2.2	0	5.0	4.2	0	27.5	11.5	0
20.	Pooradam	0	0	0	9.1	4.0	0	2.0	0	0	13.2	1.2	0
21.	Uthiradam	0	0	0	0	0	0	6.3	2.5	0	2.5	1.0	0
22.	Thiruvonam	0	0	0	1.0	0	0	6.3	2.5	0	4.0	1.6	0
23.	Avittam	0	0	0	1.2	0	0	9.0	4.2	0.5	13.5	7.5	3.0
24.	Sathayam	0	0	0	0	0	0	8.3	1.8	0	10.0	4.5	2.5
25.	Poorattathi	0	0	0	0	0	0	8.0	1.5	0	19.9	7.0	0
26.	Uthirattathi	0	0	0	5.5	0	0	8.1	1.6	0	11.5	4.5	0
27.	Revathi	0	0	0	13.0	3.0	0	9.0	1.6	0.5	27.2	11.5	0

20 mm while the stars viz. Aswini, Rohini, Pooram, Kettai, Moolam, Uthiradam, Thiruvonam, Avittam, Sathayam, Poorattathi, Uthirattathi and Revathi offered rainfall upto 5-10 mm. During North East Monsoon (NEM) period, the star Uthiram offered high chance of rainfall upto 46.0 mm, followed by the star, Chittirai (44.0 mm). The stars, Punarpoosam, Poosam, Aailyam, Pooram, Astham, Moolam and Revathi influenced rainfall upto 20 and 40 mm while the stars Parani, Maham, Swathi, Kettai, Pooradam, Avittam, Sathayam, Poorattathi and Uthirattathi showed rainfall influence with a range from 10.0 to 20.0 mm.

The results from 50 per cent probability analysis revealed that no stars in CWP did

influence rainfall. During HWP, the star, Miruhasirisham offered greater rainfall influence only upto 4.2 mm and this was followed by the star, Pooradam (4.0 mm). During SWM period, the same star Maham which had shown influence on 30 per cent probability level offered greater influence of rainfall upto 15.7 mm followed by Astham (10.7 mm). All the other stars showed their influence on rainfall below 10.0 mm. While during NEM period, higher rainfall of 30.8 mm was influenced by Thiruvathirai and this was followed by Uthiram (27.3 mm). The stars viz. Pooram, Poosam, Astham, Chittirai, Swathi, Moolam and Revathi influenced rainfall receipt upto 20 mm from 10 mm whereas the remaining stars did their influence on rainfall less than 10.0 mm. Hence at 50 per cent probability

level, during both SWM and NEM periods, Miruhasirisham, Aailiyam, Pooram, Uthiram, Chittirai, Swathi, Vishaham, Anusham, Moolam and Avittam did offer their influence on seasonal rainfall in general.

At 75 per cent probability level also, no stars showed their influence on seasonal rainfall during CWP and HWP. During SWM period, the star, Maham had greater influence on rainfall amount upto 7.0 mm while the other stars did show their least influence. And during NEM period, higher rainfall amount of 7.1 mm was influenced greatly by the star Swathi followed by Pooram (6.0 mm). The stars Thiruvathirai and Aailiyam showed their influence to get 4.5 mm and 4.2 mm rainfall respectively. Hence, at 75 per cent probability level, the star Maham during SWM and the stars Swathi Aailiyam, Pooram, Chittirai and Sathayam during NEM offered their influence on seasonal rainfall.

To conclude, in general, all the 27 stars showed their influence on NEM rainfall and SWM rainfall. As Coimbatore falls under less rainfall zone, with an annual rainfall amount of 640.0 mm. At 30 per cent probable level of rainfall, the star Revathi had greater influence during HWP while during SWM and NEM periods, the stars Maham and Uthiram, respectively showed their greater influence on rainfall.

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