

Association of weather parameters with population fluctuations of tea mosquito bug of cashew in Bastar region of Chhattisgarh

J.L. Chaudhary and K.R. Sahu
S.G. College of Agriculture & Research Station,
Kumhrawand, Jagdalpur (Chhattisgarh state)- 494 005



Paper presented at National Seminar on Agrometeorology- Needs,
approaches and Linkages for Rural Development
November 26-27, 2009
CCS Haryana Agricultural University, Hisar

Introduction

- The cashew (*Anacardium occidentale* L) is an important commercial plantation crop and dollar earner of India.
- Chhattisgarh is a tribal state and Bastar is one of the biggest tribal districts to have around 40,000 hectares suitable for cashew plantation (Geographical Information Survey & Survey of Government of India –2002-03).
- In India, cashew cultivation area has increased from 706 to 780 thousand hectares during 1998-99 to 2003-04 but average productivity remained 800 kg per hectare (Directorate of Cashew & Cocoa Development REPORTS, 2006-07).
- There are various factors responsible for this low yield in cashew, in which the insect pest problem is major one.
- Cashew crop is attacked by more than 180 species of insects and non-insect pests in India including insects, mites and vertebrates. Among insects the cashew stem and root borer, tea mosquito bug (TMB) and foliage and flower insects are important ones (Sundaraju, 1993).

Looking to pest problem a survey was conducted at S.G. College of Agriculture & Research Station, IGKV, Jagdalpur (C.G.) during 2004-05 and 2005-06 to study the incidence and intensity of different insect pests in randomly selected trees of cashew plantation done in surrounding areas of Bastar. The intensities of insect pests were recorded at weekly intervals. To know the influence of abiotic components the corresponding meteorological weather data were also collected and correlation was also analyzed.

Table: 9 Seasonal incidences of Cashew insect pests and corresponding weather data during 2004-05 at Jagdalpur

Month	Temp 0C		Rainfall mms	Relative Humidity		% TMB Damage	
	Max.	Min		I	II	Rainy Days	Shoot
Apr-04	36.0	22.9	43.5	84	35	3	3.81
May-04	35.6	23.0	85.6	73	50	5	2.57
Jun-04	30.0	22.3	351.8	84	64	10	3.74
Jul-04	27.6	22.2	356.3	91	73	24	0.00
Aug-04	25.9	21.8	308.6	93	81	13	0.00
Sep-04	29.6	21.9	258.2	93	71	14	0.00
Oct-04	29.3	19.0	151.4	93	70	7	0.00
Nov-04	27.1	12.2	7.6	93	43	1	0.02
Dec-04	26.8	8.0	0.0	94	28	0	0.77
Jan-05	27.2	10.7	20.6	95	35	1	1.66
Feb-05	30.2	12.6	19.4	92	38	2	6.53
Mar-05	33.5	17.0	11.4	82	38	2	4.63

Table: Seasonal incidences of Cashew insect pests and corresponding weather data during 2005-06 at Jagdalpur

Month	Temp 0C		Rainfall	Relative Humidity		% TMB Damage	
	Max.	Min.		mms	I	II	Rainy Days
2005 April	35.5	19.7	63.8	77.3	21.1	5	0.65
2005 May	37.4	20.9	90.8	76	32	3	0.10
2005 June	32.9	21.5	220.8	72	53.9	10	0.00
2005 July	27.8	20.4	242.8	91.6	80.5	19	0.13
2005 Aug	27.7	20	284.8	92	81	16	0.08
2005 Sep	28.6	20.1	254.8	94	85	11	0.00
Oct	28.8	18.4	262.4	92.6	81.7	7	0.26
Nov	27.4	9.5	1.7	87.4	82.6	0	0.00
Dec	26.7	7.2	0.0	91	76	0	0.24
2006 Jan	29.1	7.8	0.0	93.3	74.8	0	0.08
Feb	32.6	11.0	0.0	95.7	73.5	0	0.17
2006 Mar	32.6	18.1	55.6	92.1	74.4	5	0.60

Table : Correlation of weather parameters with the Tea Mosquito Bug at Jagdalpur 2004-05 and 2005-06

Weather Parameters	Correlation coefficient values (r) of TMB damages	
	2004-05	2005-06
Max. Temp °C	0.592*	0.095
Min. Temp °C	-0.055	0.033
R. H. (m) %	-0.459	-0.084
R. H. (e) %	-0.506*	-0.178
Rainfall	-0.358	-0.094
Rainy Days	-0.428	-0.081



THANK YOU