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Seasonal Incidence of Sucking Pests of Groundnut (*Arachis hypogaea* L.)

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A B S T R A C T

Seasonal Incidence of sucking pests of groundnut (*Arachis hypogaea* L.)" was studied during July to October 2016, at Research farm, College of agriculture, Kolhapur. Groundnut crop was infested by Jassid (*Empoascakerri* Pruthi), Thrips (*Scirtotharips dorsalis* Hood). The study revealed that the incidence of jassid started in 2nd week of August; and thrips 1st week of August. The population of Jassid, *Empoascakerri* (Pruthi) the population steadily increased and reached to its peak in the 35th MW corresponding to September 1st week 3.06 jassids/3 leaves. The population of thrips, *Scirtothrips dorsalis* (Hood) The population started increasing slowly and reached to its peak in the 38th MW corresponding to September 4th week 4.20 thrips/3 leaves. The population of jassid showed negatively non-significant with temperature and rainfall and positively associated with relative humidity. The thrips population was negatively non-significant with temperature and rainfall and positively and significantly associated with relative humidity.

Introduction

Groundnut (*Arachis hypogaea* L.) is an annual legume crop, also known as peanut, earthnut, monkey– nut and goobers. It forms the world's largest source of edible oil and ranks 13th among the food crops and is also 4th most important oil seed crop of the world. It is grown in tropical and subtropical countries. Cultivated groundnut has been reported from South America (Weiss, 2000). It is grown in 26.4 million hectares with a production of 38.20 million tones and productivity of 691 kg ha^{-1} (FAO, 2010). Asia posses 1st rank in area (63.4%) and production (71.1%). Major groundnut countries are India (26%), China (19%) and Nigeria (11%). In India is mainly grown in the southern and north–western states; Gujarat, Andhra Pradesh, Tamilnadu, Karnataka, Maharashtra, and Madhya Pradesh together occupying about 90 percent of the groundnut area in the country.

The major insect pest of groundnut are the groundnut Aphid (*Aphis craccivora* Koch), Leaf miner (*Stomopteryx nertara* meyrick), Stem borer (*Sphenoptera perotett* camron), White grub (*Holotrichia consainguinia* Blanchard), Bihar hairy caterpillar (*Spilosoma oblique* walker), Tobacco caterpillar (*Spodoptera litura* Fab.), Red hairy caterpillar (*Amsacta albistriga* Butler), Jassid (*Empoasca*

kerri Pruthi), Thrips (*Scritothrips dorsalis*), Termite (*Odontotermesobesus* Rambur) as reported Atwal and Dhaliwal, (2008). However aphid was not considerd to be a serious pest of groundnut until late 1980 (Nandgopal, 1992).

Materials and Methods

The experiment was conducted during Kharif 2016 at College of agriculture, Kolhapur to investigate the Seasonal Incidence of Sucking Pests of Groundnut **(***Arachis hypogaea* L.) Variety TAG –24 was sown under natural conditions without spraying the insecticides in plot size 3.0 m x 1.80 m with 30cm row to row and 10 cm plant to plant spacing. The population of sucking pests *viz.*, Jassid (*Empoascakerri* Pruthi) and Thrips (*Scritothrips dorsalis* Hood) were recorded at weekly intervals during morning hours between 7.00 am to 9.00 am on five randomly selected and tagged in each plot by using sampling techniques given by Yeotiker *et al.*, (2015) population was counted on three leaves. The data were subjected to statistical analysis and correlation coefficient was worked out.

Results and Discussion

The mean population of Jassid (*Empoasca kerri* Pruthi) and Thrips (*Scritothrips dorsalis* Hood) has been presented in Table 1 during the course of investigation, Jassid, *Empoasca kerri* Pruthi; Thrips, *Scirtothrips dorsalis* were recorded sucking insect pests of groundnut.

Jassid, *Empoasca kerri* (Pruthi)

The data presented in the Table 1 clearly indicated that the jassids incidence first appeared in the 32nd MW corresponding to the August 2nd week with mean population 0.33 jassids/3 leavas. The population steadily increased and reached to its peak in the 35th MW corresponding to September 1st week (3.06 jassids/3 leaves) when the maximum temperature was 28.01 0C, morning relative humidity 90 per cent and 1.10 mm rainfall.

The population of the jassids declined thereafter from 3.00 at 36th MW corresponding to September 2nd week to 0.30jassids/3 leaves at 42nd MW corresponding to October 3rd week.

Table.1 Seasonal incidence of sucking insect pests in groundnut variety TAG –24 during *kharif*, 2016

SMW	Date	Temperature	Humidity	Rainfall	Avg. number of sucking insect pests on 3leaves		
No.		(°C)	(%)	(mm)	jassid	Thrips	
31	30 July -5 Aug	25.00	89.00	166.7	0.0	0.90	
32	6 Aug–12 Aug	25.80	92.00	100.4	0.33	1.20	
33	13 Aug–19 Aug	26.70	88.00	16.7	2.64	3.03	
34	20 Aug–26 Aug	27.20	89.00	27.1	3.03	3.93	
35	27 Aug–2 Sept	28.10	90.00	01.1	3.06	3.17	
36	3 Sept –9 Sept	28.50	83.00	01.9	3.00	3.26	
37	10 Sept–16 Sept	28.30	85.00	17.9	2.50	3.30	
38	17 Sept – 23 Sept	26.00	86.00	44.0	2.80	4.20	
39	24 Sept– 30 Sept	29.10	83.00	01.5	1.50	3.50	
40	1 Oct – 7 Oct	28.50	82.00	02.7	0.80	1.74	
41	8 Oct–14 Oct	30.70	82.00	29.9	0.60	1.02	
42	15 Oct–21 Oct	31.90	81.00	0.0	0.30	0.90	
43	**22 Oct– 28 Oct**	31.70	76.00	**0.0**	**0.00**	**0.00**	

Table.2 Correlation coefficient between abiotic factors and population of sucking pests of groundnut

Parameters	Jassid	Thrips
Temperature	–0.03872	**–0.08251**
Humidity (%)	0.562916*	**0.545565***
Rainfall (mm)	**–0.382706**	**–0.27669**

* Significant at 5 per cent level.

The correlation coefficient was compared between the jassids population and weather parameters. The analysis in the Table 2 revealed that jassids population was negatively non-significant with temperature (-0.03), rainfall (-0.38) and positively associated with relative humidity (0.56).

Thrips, *Scirtothrips dorsalis* (Hood)

The data presented in the Table 2 clearly indicated that the thrips incidence first appeared in the 31st MW corresponding to the August 1st week with mean population 0.90 thrips/3 leaves. The population started increasing slowly and reached to its peak in the 38th MW corresponding to September 4th week (4.20 thrips/3 leaves) when the maximum temperature was 26 0C, morning relative humidity 86 per cent and 44 mm rainfall. The population of the thrips declined thereafter from 3.50 at 39th MW corresponding to September 5th week to 0.90 thrips/3 leaves at 42nd MW corresponding to October 3rd week.

The correlation coefficient was compared between the thrips population and weather parameters. The analysis indicated in the Table 2 revealed that thrips population was negatively non-significant with temperature (-0.08) and rainfall (-0.27) and positively and significantly associated with relative humidity (0.54). These findings are in harmony with the results of Yadav *et al.*, (2012) who reported that the incidence of jassids started in 2nd week of August, increased slowly and attained the peak in the second week of September. Similar results were also reported by Yadav *et al.*, (2012) and Kandakoor *et al.*, (2012) that temperature was non significantly and negatively correlated with jassid incidence in groundnut.

Yadav *et al.*, (2012) reported that thrips population was negatively correlated with temperature and positively associated with relative humidity which confirms the present findings.

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