

A NOTE ON THE ATTACK OF GROUNDNUT LEAF ROLLER IN RELATION TO WEATHER PARAMETERS

The infestation of leaf roller is sporadic but at times especially in dry warm weather following continuous rain for a few days causes considerable damage to the crops (Bhattacharjee 1976). It means the awareness of congenial weather conditions in advance may be very helpful to check the severeness of the pest. Therefore, an attempt has been made to examine the predisposing meteorological factors using qualitative data of pest infestations, collected from weekly weather report on crop and weather conditions issued by the Directorate of Agriculture, Maharashtra State.

Areas of the peak infestation were the districts of Pune, Jalgaon, Akola, Solapur, Ahmednagar, Buldhana, Amravati and Yeotmal. The actual weekly meteorological data compiled from mean daily values of maximum and minimum temperature in °C, hours of bright sunshine (SSH), mean of morning and afternoon relative humidity (RH) %, rainfall in mm and their normals in respect of these districts were analysed.

In most of the districts the condition of the crop growth was satisfactory because of good monsoon activity at the time of germination, but in some places growth of the crop was reported to be retarded for want of adequate rain. In general, crop was in vegetative phase in all these districts, when the pest attack was noticed, during second fortnight of July 1981.

For the outbreak of any pest, it is necessary to have more generation quickly, before sudden increase in population at a particular time, so the weather condition should be favourable before the outbreak is noticed. Therefore, the meteorological data for the period from 21st week (21-27 May) to 30th week (23-29 July) was analysed, and depicted along with normals in Fig. 1 for Pune. It was found that in the second fortnight of May all the places had maximum temperature 40°C, minimum temperature 24°C to 28.7°C, high sunshine hours (10 to 12 hours) and low mean of morning

and afternoon relative humidity (around 50%). During the period of 25th to 28th week, due to good monsoon activity over all the places maximum temperature dropped down and remained in the range of 27°C to 32.6°C, sunshine remained in the range of 1.3 to 5.0 hrs, with higher relative humidity.

For comparison the meteorological data for the same period of Parbhani which was free from the pest infestation were also analysed and shown in Fig. 1. It was found that although the temperature, sunshine hours and relative humidity were similar but the monsoon activity during 25th to 28th week of Parbhani was very poor. The rainfall was quite below normal.

It can be inferred from the above that in the end of pre-monsoon period, if there is: (i) maximum temperature above 40°C, (ii) minimum temperature of about 24.1 to 28.7°C, (iii) sunshine hours more than 10 hrs/day followed by good rain for about 2 to 3 weeks, causing drop in maximum temperature by 1-2°C and sunshine hours by 2-3 hours and rise in relative humidity by 10% from the normals in the period of mid June to Mid July, followed by break monsoon condition, for a week or two the condition is favourable for the infestation of the pest. Although the result is based on visual observations, but it may help farmers to be alert for taking precautionary measure before the crop damage becomes noticeable. The actual recording of weekly population density, of the pest along with meteorological data by conducting field experiment would have been the ideal method of drawing any useful inference. The use of only qualitative data of pest infestation, may be taken as the limitation of this short note.

Reference

- Bhattacharjee, N.S., 1976, Record of the parasites and predators of soyabean leaf roller in India, *Ind. J. Ent.*, 38, 4, pp. 383-384.

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