

## Studies on seasonal incidence of sorghum shoot fly, (*Atherigona soccata* Rondani)

S.T. AGHAV, A.B. TAMBE, H.S. BAHETI\* AND A.J. PATIL

Department of Entomology, Oilseeds Research Station, Mahatma Phule Krishi Vidyapeeth, JALGAON (M.S.) INDIA

(Accepted : February, 2007)

A field experiment was conducted during rabi cropping season of 2001-02 to characterize relationship of various meteorological parameters with sorghum shoot fly incidence. The serial sowing technique was used starting from 36<sup>th</sup> meteorological week to 44<sup>th</sup> meteorological week. Maximum per cent dead hearts on 14 days after emergence were recorded during 36<sup>th</sup> meteorological week (45%) when prevailing maximum, minimum temperature and morning and evening relative humidity were 33.1°C, 22.1°C, 77.5 and 58.5%, respectively. Maximum per cent dead hearts on 28 days after emergence were recorded during 36<sup>th</sup> meteorological week (78.8%) when prevailing maximum, minimum temperature and morning and evening relative humidity were 32.7°C, 22.1°C, 78.7 and 54.7%, respectively. The shoot fly incidence in the form of dead hearts was correlated with the meteorological parameters corresponding to the period of observations. The population dynamics showed significant positive correlation with meteorological parameters studied while dead hearts formation was not correlated.

Key wards : Shoot fly, *Atherigona soccata*, Sorghum

### INTRODUCTION

Sorghum (*Sorghum bicolor* L. Monech) is one of the major food and fodder crop of Asia. It is an important cereal crop in India. It is the fourth most important cereal following rice, wheat and maize. It is the staple food in the semiarid parts of the world and well recognized for its draught resistance and is most suitable for dry regions. India is the major sorghum growing country in the world contributing 34% of the semi arid tropical sorghum (Shivkumar and Virmani 1982). It ranks first in acreage and second in production next to USA. The sorghum shoot fly, (*Atherigona varia soccata* Rondani) an Anthomyid fly, in the family Muscidae, order Diptera is the primary pest of economic importance of sorghum. The incidence of the shoot fly is known to vary from region to region and season to season.

### MATERIALS AND METHODS

The experiment was conducted during the rabi season of 2001-2002 at Sorghum Research Station, M.A.U., Parbhani (19° 16'N; 76° 47'E with an altitude of 408.50 m above MSL). It consists of nine serial sowing dates as treatments - S<sub>1</sub> 3<sup>rd</sup> September, 2001; S<sub>2</sub> 10<sup>th</sup> September, 2001; S<sub>3</sub> 17<sup>th</sup> September, 2001; S<sub>4</sub> 24<sup>th</sup> September, 2001; S<sub>5</sub> 1<sup>st</sup> October, 2001; S<sub>6</sub> 8<sup>th</sup> October, 2001; S<sub>7</sub> 15<sup>th</sup> October, 2001; S<sub>8</sub> 22<sup>nd</sup> October, 2001 and S<sub>9</sub> 29<sup>th</sup> October, 2001.

The cultivar CSH-13-R was sown in a uniform,

leveled and well drained field. The soil was typical medium black cotton having 8.02 pH, with medium depth. The gross plot size was 6.5m x 3.25m and net plot size was 5.00 x 2.25m. A plant spacing of 45cm x 15cm was maintained. Cultural operations were carried out as per recommended practice. Thinning as well as gap filling was carried out 3 days after germination and a single healthy seedling per hill was kept. Observations on dead hearts were recorded on 14<sup>th</sup> and 28<sup>th</sup> day after emergence. The plants showing dead hearts were recorded and then removed to avoid recounting. The observations on meteorological parameters obtained from Agro-meteorological observatory situated at SRS, MAU, Parbhani.

### RESULTS AND DISCUSSION

*Meteorological conditions during the period of observations i.e. on 14 days after emergence :*

The meteorological data shows that, the mean maximum temperature (max.T.) during the experimental period was 32.2°C and varied between 30.8-33.1°C. Whereas, the mean minimum temperature (min.T.) was 18.9°C and varied between 14.1-22.2°C. The mean morning relative humidity (RH-I) was 76.0% with a range from 67.5-85.0% and the mean afternoon relative humidity (RH-II) was 47.3% with a range from 34.5-58.5% (Table 1). The mean rainfall intensity during the experimental period was 46.5 mm which fluctuates between 11.2-190.7 mm.

\* Author for Correspondence