New Agriculturist, **29**(2) : 355–362, 2018 http://biovedjournal.org/

Development of chickpea wilt incidence in relation to edaphic and epidemic factors

Sunil Silavat, R.K. Singh, Jagdish Kumar Patidar and Vivek Kashyap

Received and Accepted

ABSTRACT : The present investigation on wilt of chickpea caused by *Fusarium oxysporum* f. sp. *ciceri* was carried out to study the edaphic and endemic factors responsible for development of wilt. In the present study, correlation between chickpea wilt disease incidence and edaphic factors on resistant to highly susceptible four lines revealed that there was a significant strong correlation between disease incidence and soil temperature and soil moisture (%). All the four entries were showed positive correlation with soil temperature, while negative correlation with soil moisture. Coefficient of determination (R^2) showed that both the factor contribute 54.70 % (JG-315), 56.32 %, (IGP-187), 54.88 % and 39.42 % in development of wilt. Pot experiment was carried out in environmental growth chamber with combination of three different level of temperatures viz., 20, 27 and 34, two different level of relative humidity viz., 60, 80 % and two inoculums load (5 and 10%) were evaluated to find out the effect of temperatures, relative humidity and inoculums load on disease incidence of chickpea wilt. All the three factor viz., air temperature, relative humidity and inoculum load were found positive correlation with wilt incidence. Statistically aerial temperature (0.7226**) and inoculums load (0.6435**) were found significant positive correlation with wilt incidence, while relative humidity (0.1315) was found non-significant.

Key Words : Chickpea (*Cicer arietinum* L.), wilt incidence, (*Fusarium oxysporum* f. sp. *ciceri*), soil temperature, soil moisture, aerial temperature, relative humidity, inoculums load.