

DIVERSITY OF INSECT VISITORS/POLLINATORS IN PIGEONPEA

Garishma Singh, G.P. Painkra*, K.L. Painkra, P.K. Bhagat, Sachin Kumar Jaiswal and Shilvi Yadav

Department of Entomology, Raj Mohini Devi College of Agriculture and Research Station, Ambikapur-497001 (C.G.)

Email: garishmasingh02@gmail.com

Received-09.07.2021, Revised-16.08.2021, Accepted-26.08.2021

Abstract: A field experiment was undertaken to study the diversity of insect visitors/pollinators in pigeonpea during *Kharif* 2020-21 at Raj Mohini Devi College of Agriculture and Research Station, Ambikapur. The pigeonpea crop attracted twelve species of pollinators represented by family Apidae (73.98%), Megachilidae(13.36%), Vespidae,(2.64%) belonging to a order Hymenoptera; Muscidae (2.60%) belonging to a order Diptera; Lycaenidae(5.15%), Erebidae (1.55%) belonging to a order Lepidoptera; and Pyrrhocoridae (1.01%) belonging to a order Hemiptera. Species wise diversity indicated that *Tetragonula iridipennis* was the most dominant one(35.88%), followed by *Apis mellifera* (20.62%), *Apis dorsata* (11.23%), *Megachile lanata* (9.43%), *Lampides boeticus* (5.15%), *Megachile disjuncta* (3.93%), *Apis cerana indica* (3.47%), *Xylocopa latipes* (2.78%), *Vespa velutina* (2.64%), *Musca domestica* (2.60%), *Amata phegea* (1.55%) and *Dysdercus cingulatus* (0.73%). All the visitors/pollinators were active during the mid flowering stage except *Megachile disjuncta*, *Dysdercus cingulatus* which were more active at the late flowering stage. At peak activity period *i.e* mid flowering stage, *Tetragonula iridipennis* with 7.58 bees/m²/5min followed by *Apis mellifera* 4.90 bees/m²/5min and also at late flowering stage, *Tetragonula iridipennis* 5.66 bees/m²/5 min followed by *Apis mellifera* 2.60 bees/m²/5min outnumbered the other pollinators. Among the species, the insect pollinators/ visitors abundance were more at 10.00a.m.-11.00 a.m. (2.25 bee/m²/5 min) followed by at 13.00-14.00 p.m. (1.73 bee/m²/5 min).

Keywords: Honey bees, Pollinators/visitors, Pigeonpea, Wasps

REFERENCES

- Ahmad, R. and Srivastava, D.P. (2002). Relative visitation of Hymenopteran bees to pigeonpea. Indian J. Pulses Res. p.15-20.
- Dhuria, A. (2020). Pollination studies in Chinese cabbage (*Brassica rapa* L. subsp. chinensis) seed production under subhash palekar natural farming and conventional farming systems. MSc. Thesis. NAUNI, UHF; p. 63.
- Howard, A., Howard, G.C. and Khan, A.R. (1919). Studies in the pollination of Indian crops. I. Memoirs. Department of Indian Crops, India (Botanical Series). 17(10): 195-200.
- Jadhav, J. A., Sreedevi, K. and Prasad, P. R. (2010). Insect pollinator diversity and abundance in sunflower ecosystem. Current Biotica, 5(3): 344-350.
- Kambrekar, D.N., Raikar, Megha, R., Jahagirdar, S. and Gudalur, K. (2019). Pollinator fauna associated with pigeonpea, *Cajanus cajan* (L.) Millspaugh in Bijapur and Bagalkot district of Karnataka. Journal of Entomology and Zoology Studies; 7(4): 158-161.
- Khater, A.M., Zakardy, E.L. K.A.H. and Ebadah, I.M.A. (2003). The efficiency of honeybees and other insect pollinators in pollination of faba bean (*Vicia faba* L.). Bulletin-of-Faculty-of- Agri.Cairo-University, 54(4):465-482.
- Lawal, O. A. and Banjo, A. D. (2010). Appraising the beekeeping knowledge and perception of pest's problem in beekeeping business at different ecological zones in South-Western Nigeria. World J. Zool, 5: 137-142.
- Onim, J.F.M.(1981). Pigeonpea Improvement in Kenya. Proc Intl Workshop on Pigeonpeas. 15–19 Dec. 1980, ICRISAT Center.; 1:427-436.
- Padhy, D., Satapathy, C.R., and Mohapatra, R.N. (2018). Diversity of Insect pollinators on pigeonpea, *Cajanus cajan* L. in Odisha. Journal of Entomology and Zoology Studies, 6(6): 47-50.
- Paikara, S. P. and Painkra, G.P. (2020). Diversity of different pollinators/visitors on coriander flowers. J EntomolZool Stud; 8(6):515-520.
- Painkra, G. P. Shivastava, Shiv, K. Shaw, S. S. and Gupta, Rajeev (2014). Scenario of various insect pollinators/ visitors visiting on niger flowers, *Guizotia abyssinica* Cass. Progressive Research 9(Special) :700- 704.
- Painkra, G. P. Shivastava, Shiv, K. Shaw, S. S. and Gupta, Rajeev (2015). Succession of various insect pollinators/visitors visiting on niger flowers (*Guizotia abyssinica* Cass.) in North Zone of Chhattisgarh. J. of Plant Dev.Sciences 7(5) : 389-392.
- Painkra, G. P. Shivastava, Shiv, K. Shaw, S. S. and Gupta, Rajeev (2015). Succession of various insect pollinators/visitors visiting on niger crop (*Guizotia abyssinica* Cass.). Int. J. of Plant Protection. 8(1) : 93-98.
- Rashmi, T., Kuberappa, G.C. and Thirumalaraju, G.T. (2010). Pollinators diversity with special reference to role of honeybees in seed production of CMS line of pigeonpea *Cajanus cajan* L. Mysore Journal of Agricultural Sciences, 44(2), 295-299.

*Corresponding Author

- Rasheed, M. T., Inayatullah, M., Shah, B., Ahmed, N., Khan, A., Ali, M., Ahmed, S., Junaid, K., Adnan, M. and Huma, Z.** (2015). Relative abundance of insect pollinators on two cultivars of sunflower in Islamabad. *Journal of Entomology and Zoology Studies*; 3(6): 164-165.
- Revanasidda.** (2015). Role of flower visitors in pollination and fruit set of muskmelon (*Cucumis melo* L.). University Of Agricultural Sciences Gkvk, Bengaluru.p. 139.
- Sharma, D. and Green, J. M.** (1980). Pigeonpea. In hybridization of crop plants. Madison, WI, USA: American society of Agronomy and crop science society of America. pp: 471-481.
- Singh, L., Shankar, U., Abrol, D.P., Mondal, A.** (2017). Diversity of Insect Pollinators Associated with Pigeonpea, *Cajanus cajan* L. Mill sp. and Their Impact on Crop Production. *Int. J Curr. Microbial. App. Sci.* 6(9):528-535.
- Somerville, D.** (2002). Honeybees in faba bean pollination. New South Wales Department of Agriculture. No. Reg, 166/26. p. DA1-128.
- Williams, L.H.** (1977). Behavior of insects foraging on pigeonpea (*Cajanus cajan* (L.) Millsp.) in India. *Trop Agric.*; 54:353-363.