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INSECT PESTS ON *ELEUSINE CORACANA* (FINGER MILLET) FROM WESTERN PART OF PANHALA TAHASIL, KOLHAPUR

Manisha M. Bhosale and Manjiri A. More
Department of Zoology , Gopal Krishna Gokhale College, Kolhapur
manishap.patil81@gmail.com

Abstract

Insects are most adaptable form of life. Herbivores insects are serious pests destroying one fifth of world's food crop products per year. In India, agriculture is currently suffering an annual loss of about 8,63,884 million due to insect pests. Provision of food deals with protection of crop from insect pests . *Eleusine coracana* (L.) , also known as fingers millet is one of the major crop grown in western part of Panhala Tahasil of Kolhapur district. About 12 species belong to four orders of insect pests were reported in study area. Identification of insect pests and controlling them is a major way to increase production of finger millet.

Keywords : Insect pest, Nutrition, Hemiptera , finger millet.

Introduction

Insects are most diverse species of animals. Insects are the most adaptable form of life. Majority of insects are important for human being and environment. Less than 0.5% of total number of insects known as pests. Insect pest defined by Williams (1947) as any insect in the wrong place. Herbivores insects destroying one fifth of world's food crop product per year. Worldwide plants are damaged by more than 10,000 species of insects (Dhaliwal et. al., 2007). In India, agriculture in currently suffering an annual loss of about 8,63,884 million due to insect pest (Dhaliwal et. al., 2010). Provision of food has always been challenging in tropics & subtropics. There is need to suppress population densities of pests in crops. Finger millet is one of the major crop grown in Western area of Panhala Tahasil. It is best in environment with medium rainfall, annual temperature 11°C to 27 °C and soil pH 5.0 to 8.2(Duke 1978,1981). At least 120 insect pests recorded on finger millet in Asia and Africa (A. Kalaisekar et.al,2016). Nutritional well being is driving force for development and maximization of human genetic potential (Radhika G. et.al.,2011). Millet has many nutritious and medical functions reported (Yang X. et. al., 2012).It is high in fiber contain, protein and mineral in comparison to all other cereals & millets. It possesses antibiotic and antioxidant property. Finger millet is low in fat and gluten free. Due to nutritional contribution of finger millet, it is now being referred as nutria millets or nutria cereals. To protect finger millet from pest there is need to identify the insect pest of crop.Therefore, the present study was undertaken in western area of Panhala Tahasil in Kolhapur district during June 2016 to Nov 2016.

Material and Method

Panhala Tahasil in Kolhapur district is one of the agricultural rich area. Western part of Panhala Tahasil is with high rainfall, large agricultural field, hilly region and large amount of fertile soil. For study purpose crop fields were selected from various villages in western panhala region.

Material used for observation is Camera, Insect sweeping net and Magnifying glass. The study was done from June 2016 to November 2016. Fields were visited per week, in morning and evening. Collection was done by hand picking and sweeping net. Identification and labeling was done with the help of keys in standard taxonomic literature that are Agricultural Insect Pests of the Tropics and Their Control –Dennis s. Hill (1987), Insect pest of millets:- A. Kalaisekar, P.G.Padmaja, V.R.Bhagwat, J.V.Patil (2017) and Investigation of insect pests of sorghum and millets- Shyamsunderlal Pradhan, M.G.Jotwani (1971) .

Results and Discussion

During study period, about 16 locations were observed for pest occurrence. Plantation in rainfed soil and in hill side region. During early growth stage grasshoppers were defoliating the leaves. Small pinholes observed made by larval form stem boarer in opening of leaves. Dead heart that is drying of central shoot also reported. Damage of leaves by cutting in U shape pattern by Ash weevil was reported. Sucking pests from hemiptera appear during early crop growth stage. Root aphids infested roots and sucking juice from it . Caterpillar infested earheads at maturity stage of crop.

The observtions are noted in Table No. 1 .Total 12 species from 4 orders found in study area .The species number belongs to Order Lepidoptera, Hemiptera, Coleopteran and Orthoptera is 6, 3, 2, 1 respectively.

Finger millet is low cost cereal, predominantly grown in Southern Asia Eastern and Africa both for grain and forage (Gupta

et.al.2010). when consumed as food it provides a sustaining diet especially for people doing hard work. Globally,finger millet is used for the preparation of weaning food , gruels, and beverages (Mugula and Lyino1999,Saona et al 1982; Venkatanarayana et al 1976). Obesity is become a concerning health problem in India. On the other hand, large population of children in country is malnourished and deficient in calcium and protein. Finger millet can be good solution all these extrimities. Finger millet is considered as an ideal food for diabetic patients because of slow release of sugars to the body.(Usha 2004). Finger millet is a crop which can withstand extreme environment condition and can even grow throughout year. Finger millet seeds can remain viable up to 10 years and therefore the grains can be "famine reserve seeds"(A Kalaisekar et. al.2016), it have potential to improve nutrition, food security and foster rural development and support sustainable land use. Increase in area of rice, wheat and sugarcane neglect the finger millet crop. International Crops Research Institute for Semi Arid Tropics (ICRISAT) a member of CGIAR (Consultative Group for International Agricultural Research) consortium, partners with farmers, government researchers & NGO to help farmers to grow nutritious crop. Government needs to focus on increasing finger millet wonder grain. Plant protection deals with controlling pests. So proper identification of insect pests, their control and increasing crop field area will prove solution for many food problems.

Table 1 : - Checklist of insect pests in western panhala during study period

Sr. No.	Pest Name	Family	Order	Damaging Stage	Plant part Affected
1	Pink stem boarer (*Semia inferens*, Walkers)	Noctuidae	Lepidoptera	Caterpillar	Stem
2	White stem boarer (*saluria inficita*, Walker)	Noctuidae	Lepidoptera	Caterpillar	Stem
3	Earhead caterpillar (*Helicorverpa armigera*, Hubner)	Noctuidae	Lepidoptera	Caterpillar	Ear
4	Ragi cutworm (*Spodoptera exigua*)	Noctuidae	Lepidoptera	Caterpillar	Leaves
5	Red hairy caterpillar (*Amsacta albistriga*, Walker)	Arctiidae	Lepidoptera	Caterpillar	Leaves
6	Black hairy caterpillar (*Estigmene lactinea*)	Arctiidae	Lepidoptera	Caterpillar	Leaves, Earhead
7	Shoot aphid (*Hysteroneura setariae,* Thomas)	Aphididae	Hemiptera	Nymph	Leaves
8	Root aphid (*Tetraneura nigriabdominalis,* Sasaki)	Aphididae	Hemiptera	Nymph, adult	Root
9	Ragi leaf hopper (*Cicadulina bipunctella bipunctella*, Matsumura)	Cicadalidae	Hemiptera	Nymph, adult	Leaves
10	Ash Weevil *(Myllocerus discolour*, Boheman)	Curculionidae	Coleoptera	Adult grub	Leaves, root
11	Orange banded blister beetle (*Mylabri spustulata*)	Meloidae	Coleoptera	Adult	Ear head
12	Surface grasshopper *(Chrotogonus sp.,*Servile)	Pyrgomorphidae	Orthoptera	Nymph adult	Leaves

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