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Morphometric Identification of Fall Army Worm, *Spodoptera frugiperda*

N. Lakshmi Gayathri[1] and K. Vinodh[2]
[1]Assistant Professor, Department of Entomology, Agricultural College, SKYCAS, Acharya N. G. Ranga Agricultural University
[2]Research Scholar, Department of Entomology, Agricultural College, SKYCAS, Acharya N. G. Ranga Agricultural University

SUMMARY

Fall army worm a major pest causing damage to the crops like maize, sorghum etc., It'seconomic injury level has a major impact on the yields. Identification and control of the fall army worm can make shift in the control. Hence identification is first step of control. The below described morphometry can help in identification of fall army worm.

INTRODUCTION

The fall army worm(*spodoptera frugiperda)*is alepidopteran pest native to tropical and subtropical regions of America belonging to family *Noctuidae* andgeneus*Spodoptera* is a major prevailing pest in maize andbesides maizefeed on more than 350 plant species like rice, sorghum, sugarcane, cotton, millets and vegetable crops. Damage symptoms include pinholes, windowing of leaf, tattered leaf margins, defoliation and skeletisation of plants,chewing damage of vegetables and fruits.The cumulative data published by the Department of Agriculture Cooperation and Farmers Welfare, GoI on 25 June 2019, indicate that Karnataka has the highest area affected with fall army worm (2,11,300 ha), followed by Telangana (24,288 ha), Maharashtra (5144 ha) and others.(Rakshit, S. et al.,).

MORPHOMETRY

The life cycle of FAW *S. frugiperda* falls under different stages of development followed as egg, larva (instars), pupa, adult. Different morphological characters at each stage of development is presented below.

Egg

Eggs are pale yellow in colour and 0.4mm in diameter they are laid in 'clusters' or 'masses' and covered with cottony fibre like structure whichhelps the eggs to stick to foliage.100-200 eggs can been in a 'mass'.

Larvae

The larvae are light green to brown in colour and have 6 instar larval stages with a larger dark head. As they develop the colour becomes darker with white stripes lengthwise along each side and dark spots with spines. Older larvae (30-36mm) have a distinctive pattern of four spots starts for the second segment to last body segment and an inverted 'Y' shaped line pattern on their head.

Pupa

The pupais initially whitish - green and reddish-brown colournearing to adult eclosion,14-18mm in length and approximately 4-4.5mm wide. Pupation occurs mostly in soil, and occasionally on host vegetation. Pupa cannot survive temperatures below 10^{o}C.

Adult

Sexual dimorphism exists in the form of patterns and colour markings on the forewings of moths, male and female moths can be distinguished by the patterns on the fore wings. Male moth have a distinct white spot on each wing with more patterns than females, forewings were grayish brown to rust brown in colour. Female forewings were uniformly grayish brown to rust brown but darker than male. Hindwings in both sexesare silvery-white with brownish apical borders. Wingspan of male and female moths is 32-40mm.

CONCLUSION

The short developmental period and high fecundity suggest the potential of fall army worm a threat to major crops like corn, sorghum, cotton, etc., above mentioned morphometry of fall army worm helps for the identification and to make necessary decisions and actions for the control either by using chemical or natural enemies under field conditions.

REFERENCES

Fall armyworm (Spodoptera frugiperda), V1 17 March 2020. Department of Agriculture and Fisheries, 2020.

Navasero, M.M. and Navasero, M.V. (2020). Life cycle, morphometry and natural enemies of fall armyworm, spodopterafrugiperda (JE Smith)(lepidoptera: Noctuidae) on zea mays l. in the Philippines. *Journal of the International Society for Southeast Asian Agricultural Sciences*. Vol. 26, No. 2: 17-29

Rakshit, S. *et al*., (2019). Fight against Fall armyworm Spodopterafrugiperda (J. E. Smith). ICAR-Indian Institute of Maize Research, Ludhiana, Punjab, p. 52.

Suby SB, Soujanya P L, Yadava P, Patil J, Subaharan K, Prasad GS, Babu KS, Jat SL, Yathish KR, Vadassery J, Kalia VK, Bakthavatsalam N, Shekhar JC, Rakshit S. (2020). Invasion of fall armyworm (Spodoptera frugiperda) in India: nature, distribution, management and potential impact. Current Science 119(1):44-51.