

**3.2.1 Number of papers published per teacher in the Journals notified on UGC (UGC CARE LIST JOURNALS) website during the year 2021-22**

Sr. no	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
1	Seasonal Fluctuation of Rice Brown Planthopper (Homoptera: Delphacidae), <i>Nilaparvata lugens</i> (Stal) - A Major Paddy Pest in Central India	Madhukar F. Jadhao and Arti A. Salwe	Zoology	Journal of Scientific Research	2021-22	0447-9483	<p><b>Journal Link-</b>  <a href="https://internet.bhu.ac.in/research_pub/jsr/Volume_65_06_2021.html">https://internet.bhu.ac.in/research_pub/jsr/Volume_65_06_2021.html</a></p> <p><b>Paper Link-</b>  <a href="https://internet.bhu.ac.in/research_pub/jsr/Volumes/JSR_65_06_2021/Manuscript%2025.pdf">https://internet.bhu.ac.in/research_pub/jsr/Volumes/JSR_65_06_2021/Manuscript%2025.pdf</a></p>
2	Biology of a Pentatomid Bug <i>Amyotea malabarica</i> (Fabricius) and its Predatory Efficiency in Rice Field of Vidarbha, India	Barsagade D.D. and Salwe A. A.	Zoology	International Journal of Zoological Investigations	2021-22	2454-3055	<p><b>Journal Link-</b>  <a href="https://mjl.clarivate.com:/search-results?issn=2454-3055&amp;hide_exact_match_fl=true&amp;utm_source=mjl&amp;utm_medium=share-by-link&amp;utm_campaign=search-results-share-this-journal">https://mjl.clarivate.com:/search-results?issn=2454-3055&amp;hide_exact_match_fl=true&amp;utm_source=mjl&amp;utm_medium=share-by-link&amp;utm_campaign=search-results-share-this-journal</a></p> <p><b>Paper Link-</b>  <a href="4514553453IssueSpecial_4_(1).pdf">4514553453IssueSpecial_4_(1).pdf</a></p>
3	Sahitya Vishayak Krantikari Bhumikechi Awashyakata	Renukadas Ubale	Marathi	Parivartanacha Watsaru	2021-22	2250-3145	<a href="http://www.pvatsaru.com/pvatsaruweb/frontend/articale/show/3570">http://www.pvatsaru.com/pvatsaruweb/frontend/articale/show/3570</a>



# Seasonal Fluctuation of Rice Brown Planthopper (Homoptera: Delphacidae), *Nilaparvata lugens* (Stal) - A Major Paddy Pest in Central India

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**Abstract:** Among the 5 species of sap feeders belonging to order Homoptera identified in the present investigation in both *rabi* and *kharif* seasons, *Nilaparvata lugens* was infesting rice crop very commonly and thus representing major pest status in Bhandara district (a rice bowl of state) of Maharashtra (central India). The overall population growth rate and peak density of *N. lugens* during *rabi* season was much lower as compared to the *kharif* season. The peak population of *N. lugens* was observed during the late *kharif* seasons from October to November. Another peak appeared during the *rabi* season from April to May. The infestation of *N. lugens* appeared in appreciable number at the grain filling stage of crop. The correlation analysis study showed that in *rabi* season, *N. lugens* exhibited highly positive correlation with relative humidity and significant negative correlation with maximum temperature whereas it showed highly significant negative correlation with relative humidity and minimum temperature during *kharif* season. The linear regression equations derived from the data may help in predicting the occurrence of these major pests in rice ecosystem of this region.


**Keywords:** Rabi, Central India, Correlation, Kharif, *Nilaparvata lugens*, Paddy pest, Regression.

## I. INTRODUCTION

In India, rice (paddy), *Oryza sativa* L. is a staple food for over 55% population and is grown in almost all the states. Despite having the largest area under rice, its yield is among the lowest in the world (Rangi, 1993). The insect pests constitute one of the major yields limiting biotic stresses for rice crop throughout the world. About 300 species of insects have been reported to attack rice crop in India, of which 20 have been

found to be the major pests (Pathak, 1967) causing 21 to 51 percent yield losses (Singh and Dhaliwal, 1994). The present paper describes the seasonal incidence and correlation between weather parameters and population of a major pest, *Nilaparvata lugens* in the rice ecosystem of Bhandara district of eastern Maharashtra (central India) in relation to climatic conditions of this region.

extensively in the oil, gas and chemical industries because of its outstanding mechanical properties. The use of steel is also one of the effective strategies to maximize profit and reduce cost as compared to expensive corrosion resistant alloys. In many industrial applications related to oil and gas processing such as pipeline cleaning, pipeline/acid descaling and oil well acidizing, the use of mineral acids (usually hydrochloric acid) is still an effective method for improving productivity. This process however endangers the life of steel structures as a result of acid driven corrosion. In order to prevent this undesirable reaction, corrosion inhibitors are often added to the acid solution during acidification process (Hassan AR., and Gbadegyan JA., 2015; Ferdows M., et al. 2009). Organic compounds, containing functional electronegative groups and  $\pi$ -electron in triple or conjugated double bonds are usually good inhibitors (Cano E et al 2004; Ghailane T., et al. 2013). Heteroatoms, such as sulphur, phosphorus, nitrogen and oxygen, together with aromatic rings in their structure are the major adsorption centres (Goulart C M., et al. 2013; Bentiss F., et al 2005). The planarity ( $g$ ) and the lone electron pairs in the heteroatoms are important features that determine the adsorption of these molecules on the metallic surface (Hegazy MA., et al. 2013; Hu SQ., et al. 2010). The use of corrosion inhibitors is one of the most effective measures for

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# INTERNATIONAL JOURNAL OF ZOOLOGICAL INVESTIGATIONS

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## **Biology of a Pentatomid Bug *Amyotea malabarica* (Fabricius) and its Predatory Efficiency in Rice Field of Vidarbha, India**

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**Abstract:** *Amyotea malabarica* (Fabricius) (Heteroptera: Pentatomidae: Asopinae) is a predaceous stink bug. Life cycle of *A. malabarica* was studied in rice fields of east Vidarbha, India during Rabi season of 2018-20 on its prey, *Riptortus linearis* (Fabricius) (Heteroptera: Alydidae). The female laid 180 eggs in 4 to 8 batches on upper surface of leaves and each batch consisting of 20 to 45 eggs. The egg was barrel shaped, convex ventrally, flattened dorsally and measured  $1.0 \pm 0.047$  mm,  $0.76 \pm 0.02$  mm in length and width, respectively. The percentage of hatchability was very low (60%) and incubation period was  $8.3 \pm 0.33$  days at 30 to 35 C. Pre-oviposition and oviposition period was 1 to 3 days, respectively. First, second, third, fourth, and fifth instar nymphal period were  $4 \pm 0.57$ ,  $4.3 \pm 0.33$ ,  $5.3 \pm 0.33$ ,  $4.6 \pm 0.33$  and  $5.6 \pm 0.33$  days, respectively. The mean consumptions of prey by second, third, fourth and fifth instar were  $4.3 \pm 0.33$ ,  $8.6 \pm 0.33$ ,  $17.6 \pm 1.4$  and  $26 \pm 1.1$  preys/bug, respectively, while adult fed on  $39 \pm 0.5$  prey/bugs. In entire life a single *A. malabarica* killed  $96.0 \pm 3.7$  preys. The nymphs of *A. malabarica* show cannibalism behaviour in scarcity of food only. Total developmental period from egg to adult was  $32.3 \pm 2.02$  days. Longevity of female was longer (11 to 27 days) than male (10-25 days). Present study provides important life history information of *A. malabarica* which is natural bio-agent against pests found in rice fields.

**Keywords:** *Amyotea malabarica*, Biology, Predatory efficiency, *Riptortus linearis*, Rice fields

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### **Introduction**

*Amyotea malabarica* (Fabricius) (Heteroptera: Pentatomidae: Asopinae) is a brilliantly reddish coloured bug with black spots on dorsal surface and alternate white and black transverse lines on ventral side of abdomen. The bug is widely distributed in Bangladesh, Borneo, Burma, Celebes, China, India, Indonesia, Japan, Java, New Guinea, Phillipines, Sumatra, Sri Lanka and Taiwan in rice, cotton, soybean and other crop ecosystems

(Thomas, 1994). In India, it is recorded in several states (Salini and Viraktamath, 2015). Both nymphs and adults are predatory feeding by sucking the body juice of several insects, including rice pests such as rice bug *Leptocorisa acuta* (Thunberg), *Nezara viridula* (Linnaeus) (Singh *et al.*, 1973) and lepidopteran larvae (Pati and Mathur, 1986). In Vidarbha (Maharashtra) *A. malabarica* was observed to consume a number of

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समसामायिक

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संतत ते गुण जैसे तैसे॥  
सेव्यसेवकता न पडतां ठावी।  
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**सालावादप्रमाणे** १४व्या अखिल भारतीय मराठी साहित्य संमेलनाची चर्चा प्रसारमाध्यमांमधून जोरकसपणे झडू लागली आहे. नुकताच ब्राह्मण महासंघाने या साहित्य संमेलनात गीतकार जावेद अख्तर व गुलजार यांना निमंत्रण देण्यास कडाडून विरोध

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