



**POPULATION-LEVEL MORPHOMETRIC VARIATION AND SEXUAL SIZE
 DIMORPHISM IN NEZARA VIRIDULA FROM TOMATO FIELDS**

AUTHORS

Ana – Maria VÎRTEIU^{1*}, Silvia PRUNAR¹, Snejana DAMIANOV¹, Florin PRUNAR¹, Dora ORBOI¹, Ioana GROZEA¹

AFFILIATIONS

¹ University of Life Science "King Mihai I" from Timisoara
 *Corresponding author: anamariavarteiu@usvt.ro

INTRODUCTION

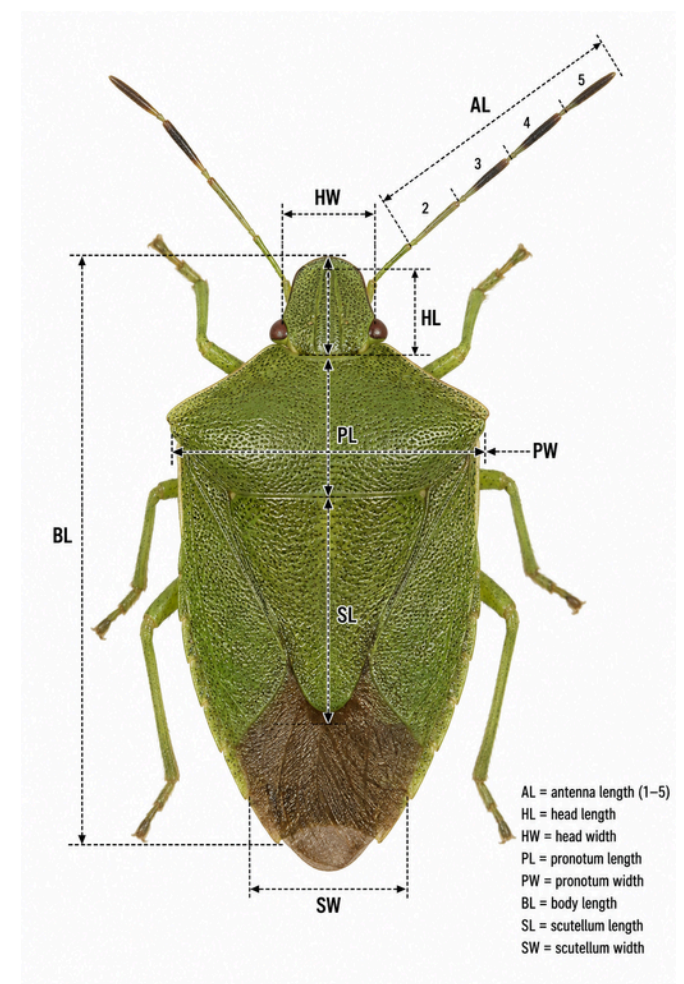
Be is a highly polyphagous pest commonly associated with vegetable agroecosystems, where it attacks numerous cultivated plant species, particularly tomato, pepper, bean and soybean crops. Both nymphs and adults produce damage through piercing-sucking feeding, causing tissue discoloration, fruit deformation and reductions in marketable yield quality. Due to its broad host range, ecological adaptability and increasing distribution, the species is considered an important agricultural pest in many European regions. Despite its economic relevance, information regarding the morphometric variability and morphological structure of local populations in Romania remains limited.

AIM

This study investigates morphometric variability and sexual dimorphism in a population collected from tomato fields in Giarmata, Timiș County (western Romania).

MATERIAL AND METHODS

Adults were sampled from the same field during the pre-overwintering period in autumn 2025 and subjected to standardized biometric measurements of the main morphological traits. Measurements included several body parameters commonly used in morphometric studies, allowing a comparative evaluation of body size and proportional variation between individuals. Statistical analyses were performed to quantify intrapopulation variability and to assess sex-related morphometric differences between males and females. These analyses provided preliminary information regarding the morphological structure of the studied population under local environmental conditions



RESULTS

Analyses indicated moderate morphometric variation among individuals of the studied population, suggesting a relatively homogeneous morphological structure under the prevailing local environmental conditions. Although variability was present for several measured traits, most specimens showed similar biometric proportions, indicating limited intrapopulation differentiation. Clear differences were observed between sexes, with females generally presenting higher mean values for most morphological parameters, particularly those related to body size and body width, while males exhibited smaller dimensions and a narrower range of variation. In addition, female specimens tended to display greater variability for certain measurements, possibly reflecting differences in physiological condition and pre-overwintering development. Together, these findings highlight a consistent pattern of sexual dimorphism within the studied population and emphasize the importance of morphometric analyses for understanding population structure in *Nezara viridula*.

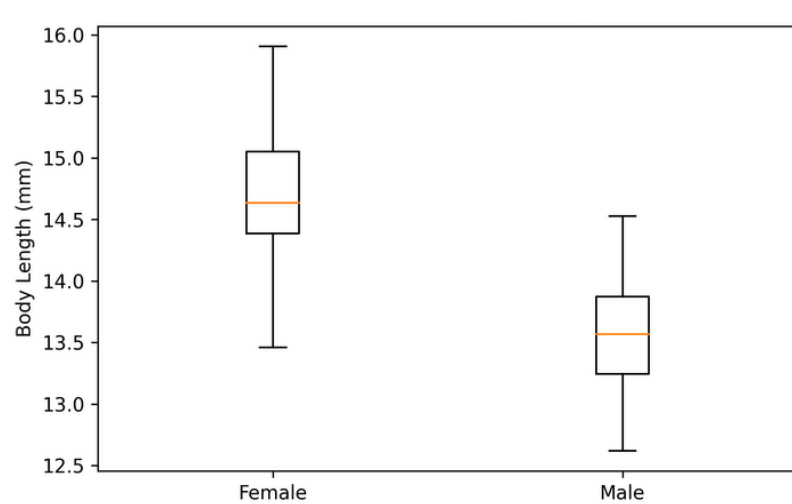


Figure 1. Body length of *Nezara viridula*

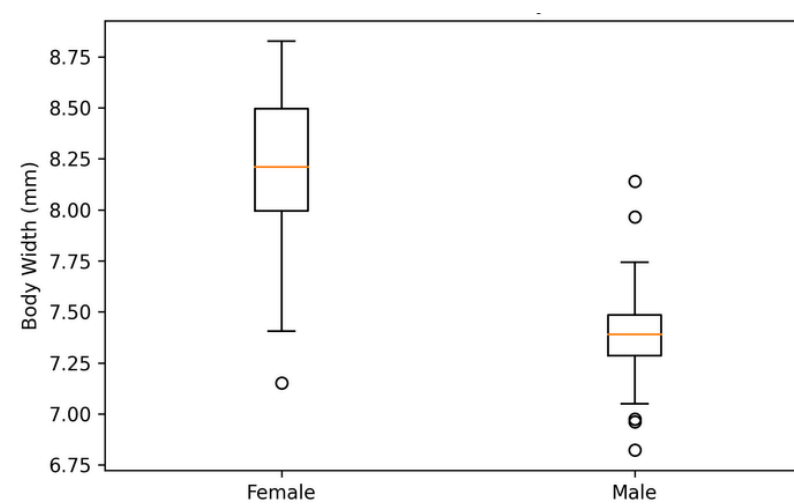


Figure 2. Body width of *Nezara viridula*

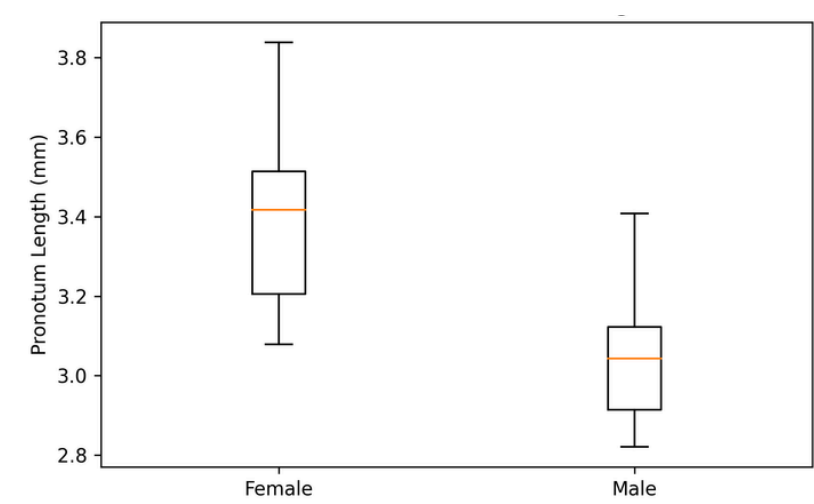


Figure 3. Pronotum length of *Nezara viridula*

CONCLUSION

The study provides new data on the morphological variability of *Nezara viridula* in Romania and underlines the value of morphometric approaches for improving the understanding of population structure in vegetable cropping systems. The observed patterns of variation and sexual dimorphism may also contribute to future comparative studies focused on ecological adaptation, population differentiation and pest monitoring under different environmental conditions.

