

Abstract

Visual features of the wing colour, with special reference to the intensity of UV reflectance of the Green-veined White (*Pieris napi*) were investigated. Several studies revealed that only females of *Pieris napi* possess UV reflectance on dorsal wing surface. Based on UV sensitive photography, we analysed correlation between environmental conditions (productivity and climate) and 3 patches on forewing of 347 specimens of *P. napi* from Palaearctic region. Males significantly differ in level of intensity of UV reflectance from females. UV intensity in females is 25% higher in comparison with males. This phenomenon is explained by different deposition of wing pterins. Further, environment significantly affects UV intensity on the forewings of females, but not males. Moreover, we accomplished the analysis of fluctuating asymmetry. First we subjected the environmental variables to PCA. In females, the first PCA axis (temperature seasonality, temperature annual range and longitude) significantly correlated with UV intensity. In males, the second PCA axis (latitude and altitude) was significantly correlated with FA. Additionally, we performed Two-Block Partial Least-Squares (PLS) analysis to assess co-variation between intraspecific shape variation and variation of 12 environmental variables and intensity of UV reflectance. We concluded that large-scale environmental factors do affect the intensity of UV reflectance and level of fluctuating asymmetry on forewings of female and male Green-veined White.

Key words: UV reflectance, Green-veined White (*Pieris napi*), UV intensity, geometric morphometrics, geographical variation