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Poster Presentation P40

ABIOTIC FACTORS INFLUENCING BODY COLOR IN
MURGANTIA HISTRIONICA

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Many insects have developed the ability to thermoregulate by basking in the sun in order to maintain a higher body temperature. Because dark colors absorb more solar radiation, some insects will also alter their body color in colder weather in order to thermoregulate more efficiently. This experiment was designed to determine the effects of thermoperiod and photoperiod on the body color of the harlequin bug, *Murgantia histrionica*. Two populations were raised from the nymph stage. One treatment was exposed to simulated summer conditions with a 15:9hr, light:dark (L:D) photoperiod, and 30:24°C (day:night) thermoperiod, while the other treatment was exposed to simulated fall conditions with a 9:15hr L:D photoperiod and 22:15°C thermoperiod. After one generation, adults were examined for differences in the ratios of black to yellow body color. As predicted, the harlequin bugs in the first treatment had significantly more yellow color on their dorsal side than those in the second treatment ($t=4.67$, $df=9$, $p<.000$). The increase of black color in the fall population is most likely facilitating their absorption of more solar radiation. This allows them to compensate for the lower temperature and the shorter duration of daily light.