

Circadian Rhythm of Blood-Sucking Behavior of Female Forcipomyia taiwana

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Abstract : Forcipomyia taiwana, an important vexing pest, influences the development of the industry of Taiwan tourism and the quality of country life. Using human-attractant method to investigate the blood-sucking behavior of Forcipomyia taiwana in three districts in Taichung, it revealed that female F. taiwana only exhibits blood-sucking behavior in daytime, not in nighttime. The blood-sucking behavior of female F. taiwana was affected by some factors, i.e., season and atmospheric factors. During 2008 to 2010, our study revealed that blood-sucking behavior commenced from 7:00 to 8:00 in the spring equinox, the summer solstice and the autumnal equinox, but from 8:00 to 9:00 in the winter solstice. However, regardless of any seasons, it revealed that blood-sucking behavior reached the acme between 13:00 and 15:00, and then descending. In those four seasons, the summer solstice had longer lighting and higher temperature, the average sucking activity was around 12 hours, on the contrary, the winter solstice had shorter lighting and lower temperature, the average sucking activity bridled to around 8 hours whilst it retrenched to 11 hours in the spring equinox and the autumnal equinox. To analyze the correlation between blood-sucking behavior and atmospheric factors, it revealed that female blood-sucking behavior was correlated positively to temperature and lighting but negatively to humidity. In addition, our study also showed that there is no blood-sucking behavior under 18°C.

Keywords : Forcipomyia taiwana, circadian rhythm, blood-sucking behavior, season

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