

Photoperiodic Induction and Termination of Reproductive Diapause in *Orius strigicollis*

**Jum Rae Cho, Hong Sun Kim, Jeong Hwan Kim
and Kyung Saeng Boo¹**

Division of Entomology,

National Institute of Agricultural Science and Technology,

¹Entomology Program, School of Agricultural Biotechnology,

Seoul National University

Photoperiod had an influence on nymphal development and diapause induction of *Orius strigicollis*. At 18°C, nymphal development at the photoperiod of 8L: 16D was more or less faster than that at 12L: 12D. However, there was no difference in the developmental period between male and female at both conditions. When exposing from the second, the third, and the fourth instar to adult at 15°C, 9L: 15D respectively, the longevity of *O. strigicollis* adult was shorter as the earlier stage was exposed. The adult stage was insensitive to short photoperiod. Exposing the nymphal instar 1st-3rd, egg-instar 3rd, egg-instar 2nd, and only egg stage to short photoperiod were not enough to induce reproductive diapause. The first three instars were sensitive to short photoperiod, while the fifth instar was not. The diapause did not occur at 15, 25, and 30°C, at 16L: 8D. The preoviposition period became much shorter as the temperature and photoperiod were increased. Diapause, induced by exposing to 18°C, 9L: 15D from the second instar to adult, was terminated within 18 days as both temperature and day length were increased. Diapause termination in *O. strigicollis* was faster at long photoperiod than at short photoperiod, and at high temperature than at low temperature. From the first instar, *O. strigicollis* showed a long-day response with the critical photoperiod between 12L: 12D and 14L: 10D.