

Induction and Termination of the Reproductive Diapause in the Black Rice Bug, *Scotinophara lurida* Burmeister

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The number of days required for the first oviposition in *Scotinophara lurida* was different depending on the collection date, when kept at 25°C under a photoperiod of 16L: 8D after field collection. In general, the number of days to first oviposition progressively decreased as the collection dates go by. In the overwintering sites, *S. lurida* did not develop the ovary or male accessory glands until June 5, but those collected after June 25 well developed the reproductive tissues. *S. lurida* adults terminated diapause and oviposited sooner when transferred to the 16L:8D photoperiod regime than the 9L:15D photoperiod regime. The reproductive diapause in *S. lurida* was promptly terminated as the photoperiod and temperature increased. Longer photoperiod and higher temperature accelerated oviposition of field-collected *S. lurida*. For *S. lurida* adults and 4th-instar nymphs, the critical photoperiod for diapause induction appeared to be 8.5 and 9.5 h, respectively, at 30°C. At 25 and 20°C, both stages showed the same critical photoperiod to be 14 h, and at 15°C, 100% of both stages entered diapause even under a long daylength. The number of days until first oviposition became longer with 4th-instar nymphs than adults, when reared at various photoperiodic and thermoperiodic regimes. Thus, 4th-instar nymphs were more sensitive to diapause induction by photoperiod and temperature. Regarding the diapause termination, *S. lurida* terminated the reproductive diapause within 35 days after treatment at 25 and 30°C under all the photoperiod examined. At 20°C, the critical photoperiod for diapause termination appeared to be 8.5 h. At 15°C, 100% of *S. lurida* adults maintained the reproductive diapause more than 110 days after treatment under all the photoperiod examined. Extirpation of the compound eyes resulted in delayed ovarian development in *S. lurida*. Therefore, the compound eyes may be the principal, if not the only, photoperiodic receptors in the termination of diapause.