

**FISIOLOGI PERILAKU AGRESI DAN TIDUR
TIKUS PUTIH (*Rattus norvegicus* Berkenhout, 1769)
PADA FOTOPERIODE PENDEK**

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INTISARI

Pada organisme tingkat tinggi, perilaku merupakan respon terhadap stimulus yang adekuat. Perilaku merupakan hasil interaksi berbagai sistem organ dalam tubuh, terutama sistem saraf dan endokrin. Tujuan penelitian ini untuk mengetahui pengaruh fotoperiode pendek terhadap fisiologi perilaku harian, kadar glukosa darah, berat badan, dan konsumsi air pada tikus putih (*Rattus norvegicus* Berkenhout, 1769) jantan galur wistar. Penelitian dilakukan pada bulan Mei sampai Juli 2016. Sebanyak 12 ekor tikus putih jantan dibagi menjadi 4 kelompok. Masing-masing kelompok terdiri atas 3 ekor tikus: A (3T/21G); B (6T/18G); C (9T/15G); serta D (kontrol) (12T/12G). Perlakuan fotoperiode dilaksanakan selama 6 minggu. Perilaku harian diamati sejak minggu ke-3. Pada perlakuan terang setiap kelompok diberi paparan cahaya yang berasal dari lampu dengan intensitas cahaya ± 100 -120 lux. Pada perlakuan gelap kandang diberi penutup berupa kain hitam. Parameter yang diamati meliputi perilaku harian (*abnormal, aggressive, drinking, exploring, feeding, foraging, grooming, sleeping* dan *social interaction*), kadar glukosa darah, berat badan, dan konsumsi air. Proses pengamatan dilakukan secara tidak langsung melalui media rekaman kamera CCTV, menggunakan metode *scan sampling* yang dilakukan setiap menit selama 30 menit pertama pada setiap periode terang dan gelap dan 30 menit di tengah setiap periode terang dan gelap. Analisis data menggunakan Anova (*Analysis of Variance for Rank Data*) dan DMRT (*Duncan's Multiple Range Test*). Berdasarkan hasil yang diperoleh, fotoperiode pendek dengan durasi terang yang pendek meningkatkan perilaku tidur tikus. Perilaku agresi muncul tidak hanya pada fotoperiode pendek, tetapi juga pada fotoperiode normal. Fotoperiode pendek tidak berpengaruh signifikan terhadap perilaku berat badan, konsumsi air, serta kadar glukosa darah pada tikus.

Kata kunci: Fotoperiode pendek, perilaku harian, melatonin, serotonin, dan kadar glukosa darah.

***PHYSIOLOGI OF AGGRESSIVE AND SLEEPING BEHAVIOR
IN WISTAR RATS (*Rattus norvegicus* Berkenhout, 1769)
ON SHORT PHOTOPERIOD***

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ABSTRACT

*On the high level of organism, behavior is a response of an adequate stimulus. It is a result towards the interaction of any organ system in the body, especially in the nerve and endocrine systems. This research aims to find the influences of short photoperiod towards the daily behavior physiology, blood glucose level, weight, and water consumption in male wistar rats (*Rattus norvegicus* Berkenhout, 1769). This research was done in May- July 2016. Twelve male rats were divided into 4 categories. Each category consisted of 3 rats: A (3T / 21g); B (6T / 18G); C (9T / 15G); and D (control) (12T / 12G). Photoperiod treatment was conducted over 6 weeks. Daily behavior observed since the 3rd week. On the bright treatment, each group is exposed to bright light coming from the lamp with a light intensity of $\pm 100-120$ lux. On the dark treatment, the stable was covered by black fabric. The measured parameters were daily behavior (abnormal, aggressive, drinking, exploring, feeding, foraging, grooming, sleeping and social interaction), blood glucose rates, body weight, and water consumption. Observation was done indirectly with recording media by CCTV camera, using scan sampling method on every minute during the first 30 minutes in light and dark period and 30 minutes in the middle of light and dark period. The data analysis used in this research is ANOVA (Analysis of Variance for Rank Data) and Duncan Multiple (Duncan's Multiple Range Test). Based on the results, short photoperiod with short bright has increase sleeping behavior in rats. Aggressive behavior appears not only in short photoperiod, but also in normal photoperiod. Meanwhile it does not significantly weight, water consumption, and blood glucose level in rats.*

Keywords: short photoperiod, daily behavior, melatonin, serotonin, glucose rates.