

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## Characterization of the daily behavior of grazing Girolando heifers in integrated livestock systems

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Tree shade in pasture system should be an alternative to reduce the impact of warm climate and heat stress on dairy cattle herd. This study aimed to access grazing behavior of Girolando heifers in integrated crop, livestock (ICLS) and forestry (ICLFS) systems throughout a 24-hour day. Trial was carried out at Experimental Field of Embrapa Rondônia in Porto Velho from September to November of 2015. Eight 25±6.8 month-old Girolando ( $\frac{3}{4}$ Holstein ×  $\frac{1}{4}$ Gir) heifers with 268±83 kg of live weight (LW) were distributed in a 2x2-crossover trial (two systems x two 30-day evaluation periods). Both systems had pastures cultivated with xaraés palisadegrass under intermittent stocking (2.5 animal unit ha<sup>-1</sup>). The ICLFS was shaded by seven tiers of eucalyptus trees planted in four lines with 3x3 m of plant distance with 65% of crown cover. For assessing heifer behaviors, audio data was collected during 48 hour of each evaluation period with MP3 recorders. Bioacoustic analysis was performed using Audacity® software for identification of times spent with grazing, rumination, resting and water drinking. Data for estimation of Temperature-Humidity Index (THI) during the experimental period was taken from a weather station located 500 m from the experimental area. Variance analysis was performed by MIXED procedure of SAS. Means were compared between treatments (ICLS and ICLFS) during 00:00h to 23:00h by F test at 5% of significance level. The means of THI range from 72 to 80 throughout a 24-hour day, which mean mild to moderate stress thresholds. Regardless the system, grazing was higher in the beginning of morning (from 06:00h to 08:00h), in the end of afternoon (from 16:00h to 17:00h) and in the middle of the night (from 22:00h to 01:00h), being the means 74.62, 102.28 and 47.30 minutes, respectively; and rumination was higher from 18:00h to 05:00h, when THI mean was lower (73). Heifers spent more time grazing at 07:00h and 22:00h and less time resting at 05:00h, 09:00h and 22:00h in the ICLFS than in the ICLS. The water drinking was higher in the full sun pasture (ICLS) at 7:00h, 9:00h and 15:00h, being higher (P<0.05) in this last time when THI was 79. Girolando heifers prefer to graze and ruminate when air temperature and humidity are milder. In pasture without shading, heifers drink more water and spend more time resting, especially in the hottest period of the day.

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