Low Light Intensity Decreases the Fertility of Callithrix Jacchus

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Our breeding colony of Marmosets (Callithrix jacchus) is distributed in three different rooms. The lighting force in two rooms was involuntarily only 110 Lux against 700 Lux in the control room. The illumination in the interior of the cages situated in the lower ranks was consequently only 20 Lux. Marmoset pairs living in these cages showed a very low fecundity (maximum 0.5 deliveries per year).The fecundity of the upper ranks was 1.1 deliveries per year and corresponds to the breeding rate of the control group (1.19 deliveries per year). Daily monitoring of the excreted steroid hormones showed abnormally low levels and prolonged ovulatory cycles (up to 50 days in 27 out of 33 females from the lower ranks). Improvement of the light fixtures in both rooms doubled thelighting force and increased the breeding rate during the following 12 months approx. 20% in the upper and 130% in the lower cages. With exception of the older pairs in the lower rank. all pairs now have the same fecundity as the control group. Studies supported by grants from the Deutsche Forschungsgemeinschaft to Sfb 174 and by grants from the Bundesministenium für Forschung und Technologie (CMT-35).