

Can Naturalistic Environmental Enrichment Buffer Stress from Commercial Hatchery Processing in Chickens (*Gallus gallus*)?

Author: Sandra Frödén ■ Supervisor: Per Jensen

BACKGROUND

The commercial hatchery process is a critical period in the development of young domestic chickens, during which stressors can have enduring effects on their well-being. Implementing environmental enrichment resembling outdoor conditions might help buffer this early stress, potentially enhancing chicks' coping abilities and reducing fearfulness and stress-related behaviors.

METHODS

58 female White Leghorn chickens from a commercial hatchery were divided into control and enrichment groups. The control group received standardized enrichment, while the enrichment group had additional access to UV-light, fake grass, plastic plants, and peat (fig. 1). After habituation, various tests (ethological observation, open field test, novel object test, restraint test, and feather sampling for fault bars analysis) assessed differences in behavior, fearfulness, and stress levels between the groups.

RESULTS & CONCLUSION

The enrichment group showed higher perching and dust bathing activity than the control group, and they spent more time near the novel object (fig. 2), suggesting a more relaxed state and less fearfulness. Additionally, they had fewer fault bars, which are malformations in the feather, caused by stressful situations during the growth period (fig. 3), indicating reduced acute stress. Other tests didn't show significant differences. In conclusion, providing naturalistic environmental enrichment seemed to lower stress, underscoring the importance of early relevant enrichment.

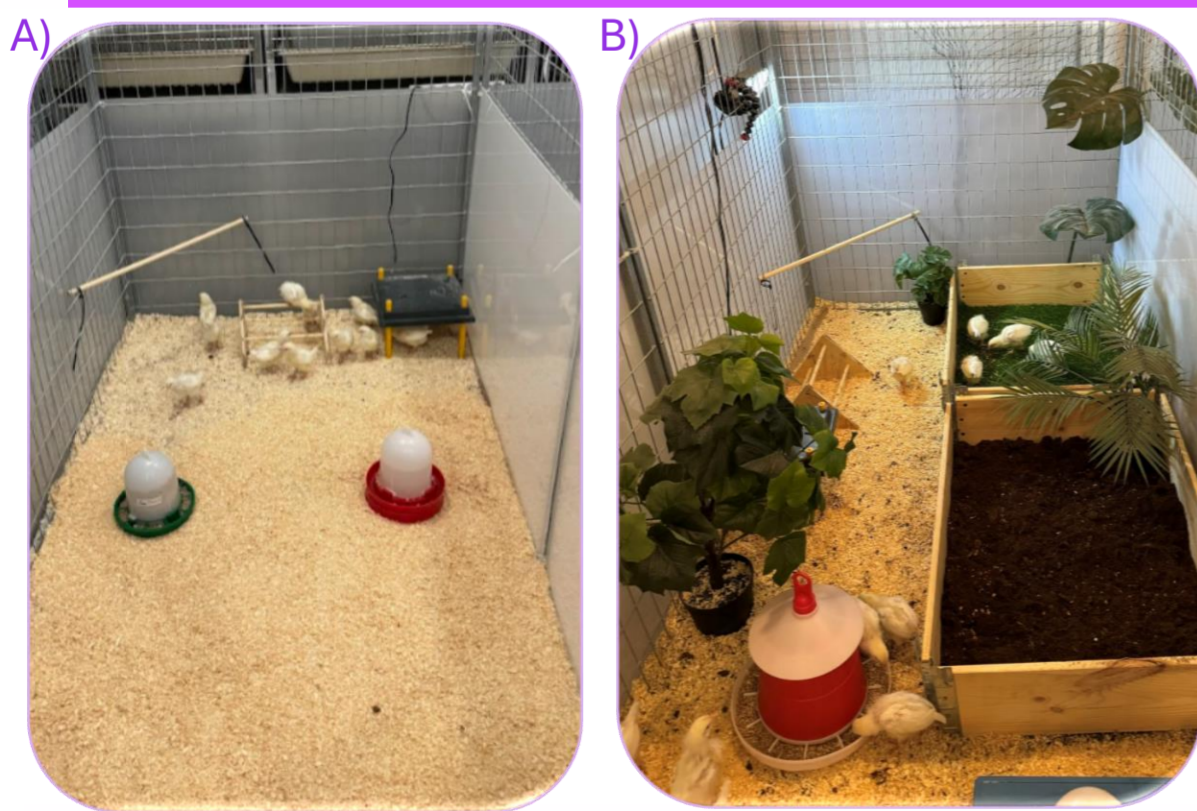


Figure 1: Home pens of A) Control group, and B) Enrichment group

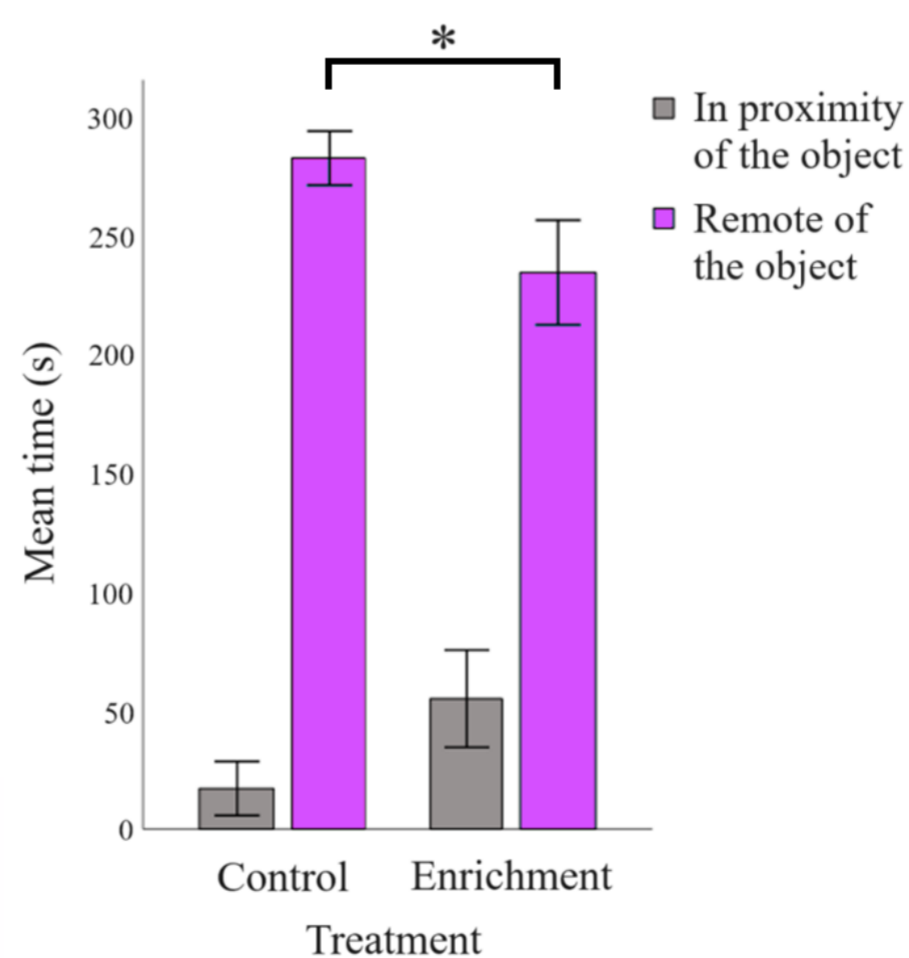


Figure 2: Time spent in proximity and remote of the novel object. *P<0.05

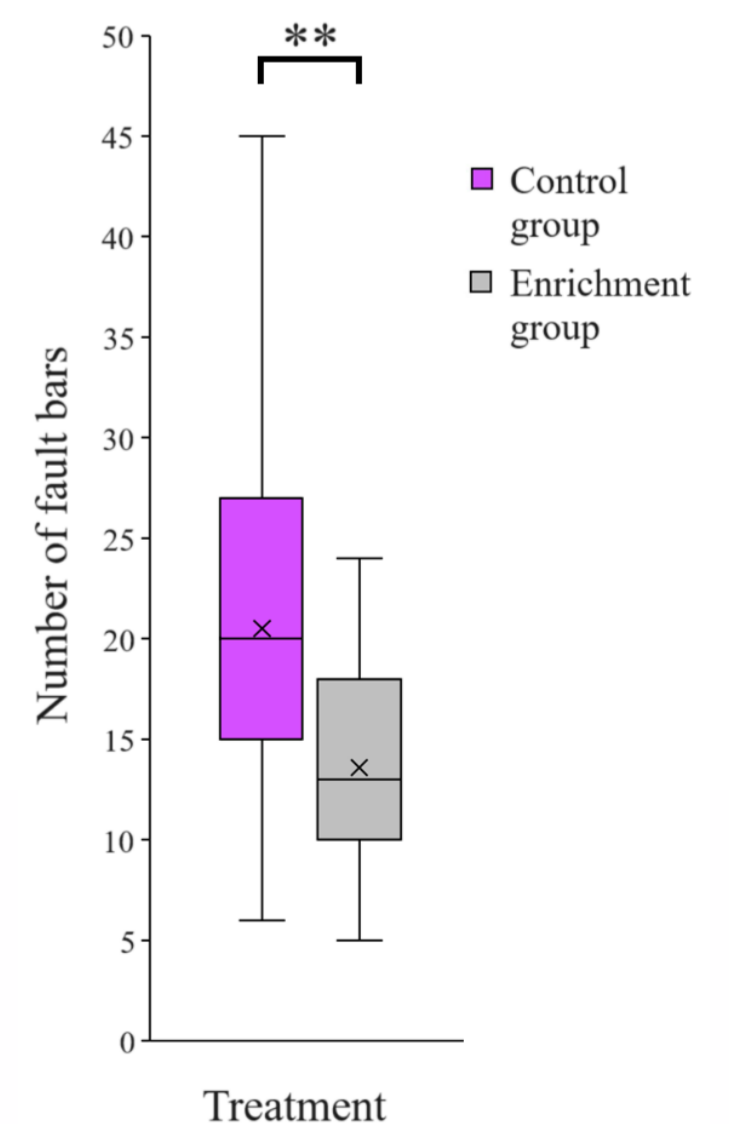


Figure 3: The number of fault bars found for each treatment. **P<0.01

