

**BIOLOGICAL STUDIES OF THE REPRODUCTIVE
CYCLE AND THE EFFECTS OF PHOTOPERIOD
UPON THE REPRODUCTIVE SYSTEM IN THE
FEMALE NATIVE THAI CHICKEN**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in Environmental Biology**

Suranaree University of Technology

Academic Year 2007

การศึกษาชีวิตวิทยาของวงจรการสืบพันธุ์และผลของช่วงแสงต่อระบบ
การสืบพันธุ์ในไก่พื้นเมืองไทยเทศเมีย

นางสาวสุนันทา โกศลศิริลักษณ์

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรดุษฎีบัณฑิต
สาขาวิชาชีววิทยาสัตว์เลี้ยง
มหาวิทยาลัยเทคโนโลยีสุรนารี
ปีการศึกษา 2550

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Suranaree University of Technology has approved this thesis submitted in partial fulfillment of the requirements of the Degree of Doctor of Philosophy.

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อาจารย์ที่ปรึกษา : ผศ. ดร.ยุพาพร ไชยสีหา, 240 หน้า

การศึกษาค้นคว้าด้วยระบบประสาทและระบบต่อมไร้ท่อและบทบาทของช่วงแสงต่อระบบสืบพันธุ์ของไก่พื้นเมืองไทยเทศเมียพบว่า ระดับของฮอร์โมนโปรแลคตินในพลาสมามีการเปลี่ยนแปลงตามวงจรการสืบพันธุ์โดยมีระดับสูงสุดในไก่ที่อยู่ในระยะนั่งฟัก แต่ไม่พบการเปลี่ยนแปลงของลูติไนซิงฮอร์โมนในพลาสมา การศึกษาโดยใช้เทคนิคอิมมูโนฮิสโตเคมีสทรีพบว่า เซลล์ประสาทที่ผลิตวาโซแอกทิฟอินเทสทินอลเปปไทด์กระจายอยู่ทั่วทั้งสมองและพบมากที่สุดที่สมองส่วนไดเอนเซฟาโลน โดยพบว่าจำนวนเซลล์ประสาทที่มีวาโซแอกทิฟอินเทสทินอลเปปไทด์ที่บริเวณอินฟินดิวลา นิวเคลียร์คอมเพล็กซ์มีการเปลี่ยนแปลงตามวงจรการสืบพันธุ์และพบเป็นจำนวนมากในไก่อายุระยะนั่งฟักซึ่งสอดคล้องกับระดับของฮอร์โมนโปรแลคตินในพลาสมา ช่วงแสงอาจมีบทบาทต่อระบบสืบพันธุ์ของไก่พื้นเมืองไทย ผลที่ได้จากการศึกษาโดยรวมแล้วสรุปได้ว่าวาโซแอกทิฟอินเทสทินอลเปปไทด์และฮอร์โมนโปรแลคตินมีบทบาทที่สำคัญยิ่งต่อระบบสืบพันธุ์ของไก่พื้นเมืองไทยซึ่งเป็นสัตว์ที่มีถิ่นอาศัยอยู่ในแถบเส้นศูนย์สูตร

สาขาวิชาชีววิทยา

ปีการศึกษา 2550

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SUNANTHA KOSONSIRILUK : BIOLOGICAL STUDIES OF THE
REPRODUCTIVE CYCLE AND THE EFFECTS OF PHOTOPERIOD
UPON THE REPRODUCTIVE SYSTEM IN THE FEMALE NATIVE THAI
CHICKEN. THESIS ADVISOR : ASST. PROF. YUPAPORN CHAISEHA,
Ph.D. 240 PP.

LUTEINIZING HORMONE/NATIVE THAI CHICKEN/PHOTOPERIOD/
PROLACTIN/REPRODUCTIVE CYCLE/VASOACTIVE INTESTINAL PEPTIDE

Neuroendocrine regulation and the roles of photoperiod upon the reproductive system of female native Thai chickens were elucidated. Plasma prolactin (PRL) levels changed throughout reproductive stages with the highest level in incubating hens (B) whereas the changes in plasma luteinizing hormone (LH) levels were not observed. Immunohistochemistry studies revealed that distributions of vasoactive intestinal peptide (VIP) immunoreactivity were found throughout the brain and predominantly in the diencephalon. The changes of VIP-immunoreactive neurons in the infundibular nuclear complex were observed across reproductive stages with the greatest density were found in B and mirrored the plasma PRL levels. Photoperiod might play a role in the reproduction. In conclusion, VIP and PRL play a pivotal role in reproduction in this equatorial species.

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ACKNOWLEDGEMENTS

I would like to express my sincere and deepest gratitude to my kind advisor, Asst. Prof. Dr. Yupaporn Chaiseha for her expert advice and guidance. She has been considerate and support throughout my time as her graduate student. I would also like to extend my appreciation to my co-advisor Prof. Dr. Mohamed El Halawani for his valuable advice and hospitality throughout the time when I was in his laboratory.

I would also like to express my appreciation to Asst. Prof. Dr. Griangsak Eumkeb, Assoc. Prof. Dr. Thaweesak Songserm, and Asst. Prof. Dr. Rungrudee Srisawat, for taking the time to serve on my thesis committee.

The production of this dissertation would not be possible without the full financial support of The Royal Golden Jubilee Ph.D. Program.

My dissertation research was facilitated by the expert technical teaching by Asst. Prof. Dr. Aree Thayananuphat and Orlan Youngren. I would also like to extend my appreciation to the Department of Pathology, Kasetsart University for providing the cryostat, Suranaree University Farm for providing the barn for the experimental animals. I am thankful to Natagarn Sartsoongnoen and Nattiya Prakobsaeng for their helps, sympathy, friendship, and sincere encouragement.

Finally, I would like to express my deep gratitude to my parents and my family for their love, support, and understanding that helped me to overcome many difficult moments. Thank you very much.

Sunantha Kosonsiriluk

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