PREGNANCY DIAGNOSIS BY ULTRASONIC SCANNING AND MEASUREMENT OF SERUM PROGESTERONE LEVELS IN EZO SIKA DOES (*Cervus nippon yesoensis* HEUDE)

Natsuki HAMA

Department of Theriogenology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo, 060 Japan

Ultrasonic scanning and radioimmunoassay of progesterone were used to diagnose pregnancy in 5 domesticated and 20 wild Ezo Sika does.

In domesticated does, the earliest pregnancy diagnosis was done 187 days before fawning. The estimated gestational age of the fetus was 44 days. Aside from detecting the fetal body, the enlarged uterus and the size of the caruncles were noted. The caruncles became larger as gestation progressed.

Fetal growth was observed by measuring the fetal biparietal diameter and the fetal heart rate. As only 6 measurements were made, it was not possible to establish a correlation between the biparietal diameter and the days before fawning. However, a very highly significant negative correlation was observed between the fetal heart rate and the days before fawning. The fetal heart rate became slower in a negative linear regression as gestation progressed; $Y=119.7-0.505X$ (X=days before fawning, Y=fetal heart rate).

The wild does used in this study were located on Nakanoshima Island in Lake Toya. The conception rate was 50% and the first fawning age was 3 years. The average fawning date of wild Ezo Sika does was estimated when the average fetal heart rate (199rpm) was adjusted to the regression line ($Y=119.7-0.505X$), based on data obtain from the domesticated does. The estimated fawning date was over 2 months later than in domesticated does.

The annual serum progesterone level in domesticated does was also investigated. The basal level was 1ng/ml while the average progesterone level during pregnancy was 3.8 ± 1.5ng/ml. In one case, as elevation from and decline to the basal progesterone level were observed before the pregnancy period, it was suspected that this Ezo Sika doe was polyestrous.

In these wild Ezo Sika does, (pregnant and non-pregnant groups as determined by ultrasonic scanning) the progesterone level of the pregnant group was significantly higher ($P<0.05$) than that of the non-pregnant group.