

longed luteal phase after the first or second ovulation postpartum has also been reported to be on the increase. The objectives of this study were to show the incidence of the prolonged luteal phase in cows postpartum and to compare the reproductive performance between a group of cows with normal resumption of ovarian cycles and the other groups of cows with prolonged luteal phase or delayed first ovulation. Milk samples were collected two or three times weekly from the 2nd week to the 12th week postpartum in 396 Holstein cows being reared on 10 commercial farms across Japan during a period of 18 months. Average milk yield per cow per lactation in each herd ranged between 9000 and 12,000 kg. Milk progesterone concentrations were determined by a direct ELISA to monitor ovarian cycles postpartum. Cows resuming ovarian cycles within 35 days postpartum were considered normal. Prolonged luteal phase was defined by a luteal phase exceeding 21 days on the basis of milk progesterone profile. The incidence of abnormal resumption of ovarian cycles in 396 cows was 57.3%, which varied among the different herds from 47.8% to 72.2%. The most frequently observed abnormality was delayed first ovulation, 29.0%, followed by prolonged luteal phase after the first or second ovulation postpartum, 17.7%. The other abnormalities include cessation of ovarian cyclicity after a normal cycle. The incidences of delayed first ovulation as well as prolonged luteal phase varied among different herds, 12.7–38.4% and 6.1–33.6%, respectively. Pregnancy rates within 100 days postpartum in cows with delayed first ovulation (20.8%) and in cows with prolonged luteal phase (17.1%) were significantly lower ($P < 0.01$) than the rate in cows with normal resumption of ovarian cycles (47.3%). In conclusion about a half or more cows in the commercial dairy herds in Japan, where the national average in milk yield per cow per lactation is more than 9000 kg, had abnormal resumption of ovarian cycles, which resulted in poor pregnancy rate.

Keywords: Cows; Ovarian cycles; Ovarian dysfunction, Postpartum; Prolonged luteal phase

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EARLY CONCEPTION FACTOR TEST FOR DETERMINATION OF PREGNANCY/NON-PREGNANCY STATUS IN VIRGIN HOLSTEIN HEIFERS

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An early accurate test of pregnancy and non-pregnancy is an important reproductive tool for an adequate reproductive cattle management. Recently, a new test called the ECFTM (early conception factor) Dip Stick Test has been developed. The objective of the present study was to evaluate the accuracy of early conception factor (ECFTM) using blood samples collected at day 11 after artificial insemination in dairy Holstein heifers known to be pregnant and non-pregnant. Forty-eight virgin Holstein Heifers of 14–15 months in the first artificial insemination were used. Eighteen animals that were confirmed pregnant based on the presence of a viable embryo by transrectal ultrasonography (TRUS) at day 25 after artificial insemination were used as the pregnant group (positive control group). Twenty-four heifers that were not artificially inseminated were used as the non-pregnant group (negative control group). The product was used according to the manufactures recommendations. Blood analysis was performed by a person unaware of the TRUS results. The prevalence of pregnancy was 37.5% (18/48). The sensitivity ECFTM was 22.2% (4/18) and the specificity was 83.0% (20/24). The positive predictive value and negative predictive values was 60.0% (4/10) and 62.5% (20/32), respectively. The percentage of false-negative and false positive results was 66.7% (12/18) and 16.6% (4/24), respectively. Each blood same was tested with two different batches of ECFTM. Results showed poor agreement ($\kappa = 0.14$). It is concluded that the present ECFTM test is not reliable and cannot be recommended as a test to determine pregnancy and non-pregnancy.

Keywords: Cattle; Pregnancy diagnosis; Early conception factor; Accuracy