linear effect of prepartum TZD dose on plasma GH ($P = 0.07$) such that an increasing TZD dose prepartum was associated with lower postpartum GH concentrations (9.55, 8.26, and 6.82 ± 1.12 ng/ml for 0, 2.0, 4.0 mg TZD/kg BW treatments, respectively). Prepartum TZD treatment did not affect postpartum IGF-I, but there was a linear trend ($P = 0.12$) for a decreased postpartum ratio of GH:IGF-I (0.258, 0.240, and 0.174 ± 0.040 for 0, 2.0, 4.0 mg TZD/kg BW treatments, respectively). A more positive calculated EB after parturition was associated with lower GH concentrations in cows receiving the 4.0 mg TZD/kg BW treatment, but there was no apparent relationship between postpartum EB and IGF-I concentrations.

Key Words: Transition Cow, Thiazolidinedione, Growth Hormone

T185 The metabolic status during the dry period influences the ovulation of the first follicular wave postpartum in dairy cows. N. Castro*[1,2], C. Kawashima[3], H. A. van Dorland[1], S. Richter[1], I. Morel[4], A. Miyamoto[3], and R. M. Bruckmaier[1], [1]*University of Bern*, *Bern, Switzerland*, [2]*Las Palmas de Gran Canaria University*, *Arucas, Spain*, [3]*Obihiro University of Agriculture and Veterinary Medicine*, *Obihiro, Japan*, [4]*Agroscope Liebefeld-Posieux*, *Posieux, Switzerland*.

The aim of this study was to investigate the effect of the nutritional status, liver function and key metabolic factors in the liver during the dry period (dp) and early lactation on the resumption of the ovarian activity in dairy cows. 23 high yielding dairy cows were allocated in two groups based on the first ovulation postpartum (pp) as detected by milk progesterone (P4) profiles. Milk samples were collected thrice per wk from d 7 pp until a new pregnancy. Ovulations were identified by an increase of P4 to more than 1 ng/mL. 47.8% of cows showed the first ovulation within 3 wk pp (OC), while in the others, ovulation occurred later (AC). Blood samples were obtained biweekly from 9 wk antepartum (ap) to wk 9 pp and plasma concentration of βHB, NEFA, Glucose (Glu), T-cholesterol, IGF-I, Insulin (Ins), T3, T4, AST and GGT were measured. Liver biopsies were taken ap and pp to analyze mRNA expression levels of hormone receptors (GH-R, IR, IGF-R1) and key metabolic enzymes (PC, PEPCKc, PEPCKm). In addition BCS and energy balance (EB) during dp and pp were assessed. Data were analysed by repeated measures ANOVA. Areas under the curve were calculated for the entire periods dp and pp, respectively. OC during dp showed higher Glu, Ins, IGF-I and T3 than AC (3.64±0.03 vs 3.42±0.06 mmol/l, 5.99±0.99 vs 3.89±0.44 µg/l, 173.09±11.50 vs 133.04±11.56 µg/l and 1.26±0.06 vs 1.07±0.06 nmol/l, respectively). During the pp period only higher T4 and BCS in OC were found (48.38±2.23 vs 44.46±0.98 nmol/l and 2.93±0.07 vs 2.72±0.09, respectively). Liver mRNA expressions and EB did not differ in dp and pp. In conclusion the metabolic status during the dp is crucial for the ovulation of the first follicular wave pp.

Key Words: Ovulation, Metabolism, Dry Period