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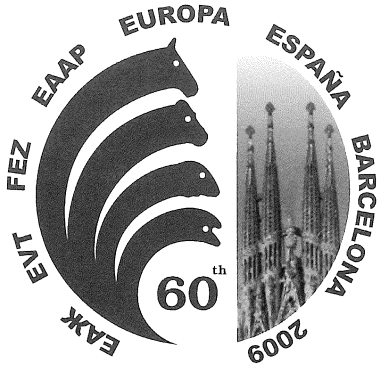

Survey in the artificial insemination network on health status, production and reproduction performance in cattle herds as influenced by management

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A degradation of the reproduction performances is observed from many years in different countries. The aim of this work was to describe the impact of the health status, production and management on the reproduction performance in Walloon farms. An inquiry was carried on with the veterinarians of the artificial insemination network. There were 3,495 dairy and 5,598 beef herds involved. The age at first calving (AFC) was significantly different (27.0 vs 28.9 months, P=0.002) in dairy and beef herds. In beef herds, the AFC, the calving interval (CI) and the apparent fertility index were negatively correlated to herd size (r=- 0.183, r=-0.267, r=-0.324; P<0.05) indicating that in farms with large herds, high quality management seemed to be a factor of importance to achieve good reproduction. For the dairy farms, the CI only was correlated to the size (r=-0.152, P<0.05). In dairy herds, the AFC was reduced when the annual milk yield increased (31.2 months for production <5,000 kg milk vs 28 months for production >8,000 kg milk). For CI, an average production of about 6,000-7,000 kg seemed to be the best for cow fecundity (CI of 397 days). In the beef farms, the heifer and cow fecundities seemed to be improved with the increase of production expressed in total live weight gain/ha. Heat detection appeared to be the most important source of problems accountable for partial failure in the reproduction performance for both dairy and beef herds (28.7% and 35.8%). Nutrition induced also a large frequency of reproduction disorders with equal propositions in both herd types (30.6% and 28.4%). The dairy farmers seemed to invest more in reproduction than the beef farmers. The major acts requested by farmers to inseminators were the diagnosis of pregnancy made by hand (27.0 and 27.6%) or by sonography (19.1 and 17.2%).

Effect of body condition and suckling restriction with and without presence of the calf on cow reproductive performance on range conditions

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Nutrition and suckling are the most important factors affecting the anoestrous period (AP). The presence of the calf and lactation are recognized as the most important factors involved in the suckling-induced suppression of LH secretion. The effects of body condition score (BCS) and suckling restriction with and without presence of the calf on reproductive efficiency were evaluated. Sixty three Angus x Hereford multiparous cows were managed to maintain different BCS at calving and thereafter (low v. moderate; L, n=31 and M, n=32). Within each group of BCS, cows were assigned to three suckling treatments at 66 d postpartum: 1) suckling ad libitum (S, n=20); 2) calves fitted with nose plates during 14 days remaining with their dams (NP, n=22); 3) calves were completed removed from their dams for 14 days, and thereafter returned with them (CR, n=21). Cows were bled monthly from 98 d prepartum until 66 d postpartum and weekly thereafter until 128 d postpartum (end of mating period). Plasma insulin concentrations and presence of corpus luteum (CL) were determined. At 94 d postpartum, presence of CL was greater (P<0.001) for NP and CR than for S cows (68, 57 and 21% for NP, CR and S, respectively). Also, more M BCS presented CL than L BCS cows (77 vs. 25; P<0.0001). The length of the AP was longer (P<0.05) in S than in NP or CR cows (108±3.4 vs. 95±3.4 and 91±3.5 days for S, NP and CR, respectively). Insulin concentrations were less for L BCS than for M BCS cows (1.46±0.06 mUI/ml vs. 1.82±0.06 mUI/ml; P<0.0001) and for S than for NP and CR treatments (1.48±0.08 mUI/ml vs. 1.74±0.07 mUI/ml and 1.71±0.08 mUI/ml for S, NP and CR cows, respectively). Suckling restriction with and without presence of the calf had an improved effect on reproductive performance compared to suckled cows and this could be mediated through increased insulin concentrations.

Effect of body condition and suckling restriction with and without presence of the calf on milk production and calves performance on range conditions

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Lactation and presence of the calf are important factors involved in the suckling-induced suppression of LH secretion. The effects of body condition score (BCS) and suckling restriction, with and without the presence of the calf, on milk production (MP) and calf performance were evaluated. Sixty three Angus x Hereford multiparous cows were managed to maintain different BCS at calving and thereafter (low (L) v. moderate (M); L, n=31, M, n=32). Within each BCS group, cows were assigned to three suckling treatments (ST) at 66 d postpartum (pp): 1) suckling ad libitum (S, n=20); 2) calves fitted with nose plates during 14 days while remaining with their dams (NP, n=22); 3) calves were completely removed from their dams for 14 days, and thereafter returned to them (CR, n=21). Cows were bled monthly from 98 d prepartum until 66 d pp and weekly thereafter until 128 d pp. Plasma non esterified fatty acid (NEFA) concentrations were measured. From 65 d pp until weaning, MP was assessed every 20-22 d. A BCS x time interaction on NEFA concentrations was found due to an increase 42 d prepartum in NEFA levels in L BCS compared to M BCS cows(1.59±0.06 and 1.08±0.06 ng/ml, $P<0.001$). From 66 to 122 d pp, cows in M BCS had greater ($P<0.05$) NEFA concentrations than cows in L BCS (0.37±0.008 and 0.31±0.008 ng/ml). Within M BCS cows, MP was similar among ST (4.24, 3.87 and 4.18 kg/d for S, NP and CR, respectively). In L BCS, cows in NP and CR produced less ($P<0.005$) milk than those in S (4.12, 3.4 and 3.29 kg/d for S, NP and CR, respectively). The correlation between calf daily live weight (LW) gain and MP was 0.49 ($P<0.0002$) and calf LW at weaning was greater ($P<0.001$) for S than for NP or CR (159.3±3.1, 150.1±2.9 and 147.0±3.1 kg for S, NP and CR, respectively). The reduction in MP and calf weaning LW was similar between suckling restriction treatments with and without presence of the calf.

Evaluation of beef genetic merit for growth rate in beef x dairy steers

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In Ireland, beef genetic evaluations are carried out on an across-breed basis. For dairy beef production, growth rate comprises ~70% of the monetary value of the total merit index. The objective of this study was to evaluate genetic merit for growth rate expressed as expected progeny difference for carcass weight (EPD_{CWT}). Spring-born male progeny out of Holstein-Friesian cows and Aberdeen Angus (AA=10) and Belgian Blue (BB=13) sires of either high (H=13) or low (L=10) EPD_{CWT} were used. Pure-bred Friesians (FR=7) and Holsteins (HO=12) were also included. In total, 170 animals with sire verification, distributed across 6 genetic groups, namely AAH (n=32), AAL (n=24), BBH (n=31), BBL (n=27), FR (n=28) and HO (n=28) were reared to slaughter. Mean sire EPD_{CWT} values, weighted by number of progeny per sire, for these genetic groups were 3.4, -13.4, 26.7, 13.0, -8.1 and 0.9 kg, respectively. Slaughter weight and carcass weight were significantly greater for H than L, but because of significant genetic merit x beef breed interactions, the effects were evident for AA only. Slaughter weight, kill-out proportion and carcass weight were significantly higher for BB than AA. Compared to HO, m. longissimus depth, fat depth and kill-out proportion were significantly higher for FR. Overall, with increasing genetic merit for growth, live weight and carcass weight increased for AA but not for BB. Dry matter intake and feed efficiency were not affected by genetic merit and the extra weight due to H was not accompanied by any increase in fatness. BB were superior to AA for all important production traits. FR had greater m. longissimus and fat depths, and a higher kill-out proportion than HO, but slaughter weight and carcass weight were not significantly different.