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## **Lipid classes content in plasma of dairy goats and cows fed similar diets supplemented or not with lipids**

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The objective of this work was to determine plasma lipid content and composition on dairy cows and goats fed diets that induced milk fat depression (MFD) in cows, but not, or to a lesser extent, in goats. Twelve cows and 14 goats, at a similar lactation stage, were assigned to a 3x3 latin square design, and successively fed a basal diet without addition of lipids (Ctrl), or supplemented with sunflower oil plus wheat starch (SOS), or fish oil (FO). Plasma lipids were extracted by modified Folch procedure from individual blood collected before morning feeding at the end of each nutritional 26-d period. Lipid classes were separated by HP-TLC (High Performance-Thin Layer Chromatography, Camag, Switzerland). After derivatization and heating, the plates were analyzed by densitometry (VideoScan, Camag, Switzerland). In order to quantify the major lipid classes, 5 standard curves with increasing quantities of pure C17:0-phospholipid (PL), Cholesterol (Chol), C23:0-fatty acid (NEFA), cis9-C18:1-triglyceride (TG) and C15:0-cholesteryl ester (CE), were deposited on each plate with individual samples, and concentrations were expressed in  $\mu\text{g}/\mu\text{L}$  of lipid extract. Data were analysed with proc MIXED of SAS (SAS Institute Inc., Cary, NC), and effects of diet, species, and their interaction were determined. Whatever the species, and compared to Ctrl, FO increased plasma CE (+31%,  $P<0.001$ ), Chol (+33%,  $P<0.001$ ) and PL (+22%,  $P<0.05$ ), whereas SOS increased plasma NEFA (+55%,  $P<0.05$ ) and Chol (+23%,  $P<0.001$ ). Irrespective of dietary treatments, plasma lipid content was higher (+39%,  $P<0.001$ ) in cows than in goats, with more Chol (+86%,  $P<0.001$ ), CE (+43%,  $P<0.001$ ) and PL (+44%,  $P<0.001$ ), but less TG (-68%,  $P<0.001$ ). In conclusions, we show for the first time differences in plasma lipid composition among goats and cows fed similar diets supplemented or not with lipids. These data will contribute to better understand the differences in mammary lipogenic response to MFD diets observed in cows and goats.

