

**Fatty acids in sheep milk related to diet and season**

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Tank milk of 10 commercial dairy sheep farms in The Netherlands was sampled periodically in 2008/09. Management details and diet information were provided by the farmers. Fatty acid (FA) analyses were carried out and the FA profiles were related to the rations fed in the weeks preceding samplings. Seasonal variation could thus be related to actual changes in diet, and to lactation stage of herds with seasonal lambing. A literature survey revealed that the average concentration of mono-unsaturated FA (MUFA) found in sheep milk (23.1 g/100 g) was lower than in average Dutch cow milk (25.5 g/100 g), but that the poly-unsaturated FA (PUFA) concentration was higher (4.0 g/100 g versus 2.8 g/100 g). The concentrations measured in this experiment were on average higher than published values for sheep for both MUFA and PUFA (i.e., 24.0 g/100 g resp. 4.5 g/100 g), but showed large variation among farms and sampling dates. Besides, the measurement period varied among the various farms. PUFA concentrations ranged from 2.24 g/100 g in June on a farm with indoor feeding of grass silage plus concentrated to 6.11 g/100 g in July on a farm with unrestricted stocking on perennial ryegrass. CLA concentrations ranged from 0.39 g/100 g to 1.91 g/100 g. The concentration of CLA was correlated to that of total unsaturated FA, and grazing was positively associated with both. Also the omega-3 FA and MUFA concentrations were positively correlated and associated with grazing, albeit less strong. One farm with two breeds showed higher concentrations of saturated FA in 'Lacaune' sheep in early lactation than in milk from 'Zwartbles' animals in late lactation, but breed and lactation stage were confounded. Further studies would be needed to further unravel the relative effect of breed, lactation stage and diet on milk FA in sheep.