PROCEEDINGS

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5-4 "Garfagnina" Sheep: Relationship Between Electrolyte Profile in Serum and Milk

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186 records on the mineral composition of milk and serum were recorded in a herd of Garfagnina sheep (an Italian local group of unselected dairy sheep). Normal composition of serum and milk are reported in Table #1. Pearson correlation coefficients were calculated between the different electrolyte levels within serum and milk and between the same electrolytes between serum and milk.

In serum Ca^{++} and Cu are related (r = .48) and Mg and Cl^{-} (r = .44). Fe is not linked to any other electrolyte and the group P, K and Na is poorly linked with the other electrolytes (Figure #1). In milk Ca is linked with P (r = .69) while the lowest correlation coefficients were found between the group Na, Fe, Cu and the remaining electrolytes (Fig #1). Very low relationships can be seen between serum and milk levels of electrolytes (R^2 = .001, .015, .010, .015, .001, .029, .001, .043, .058 for Ca/Ca, Ca/Ca^{++}, P/P, Mg/Mg, Na/Na, K/K, Fe/Fe, Cu/Cu, Zn/Zn in milk/serum, respectively).

Table #1. Physiological levels of electrolytes in sheep serum and milk (means±s.d.).

	Ca	Ca^{++}	P	Mg	Cl	Na	K	Cu	Zn	Fe
	mmol/l	mmol/l	mmol/l	mmol/l	mmol/l	mmol/l	mmol/l	µmol/l	µmol/l	µmol/l
Serum levels	2.61 ±.219	1.06 ±.085	1.75 ±.403	1.21 ±.227	110 ±7.6	150 ±2.6	5.0 ±.65	10 ±4.76	11 ±5.91	31 ±6.66
	ppm		ppm	ppm		ppm	ppm	ppm	ppm	ppm
Milk levels	1825 ±507		1449 ±460	163 ±45		448 ±242	1067 ±386	.33 ±.264	4.6 ±2.28	6.0 ±4.05

Figure #1. Pearson correlation coefficients between the different electrolyte levels.