Biochemical Analysis of Seminal Plasma from Rams and Goats

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Mammalian fertilization is one of the most intricate, regulated cell-to-cell interactions, with ions and proteins playing an important role in the binding of spermatozoa and ovum. Calcium has a fundamental role in acrosome capacitation and reaction. Several proteins found in spermatozoa have already been described as ovum-binding proteins. Phospholipase A_2 (PLA_2), a calcium-dependent protein, plays important roles in sperm cell maturation, particularly in the acrosomal reaction in the multifusion process that permits the release of hydrolytic enzymes, which are required for spermatozoa to penetrate the acellular layers surrounding the oocyte. It was analyzed the citric acid and fructose contents, and total protein concentration in seminal plasma of rams and goats. Citric acid has been associated with coagulation and liquefaction of semen and fructose is the primary source of energy for spermatozoa. The animals (rams *Ile de France* and goats *Bôer*) were submitted to the collections during one year, from September until August. The samples were collected by electroejaculation and the biochemical analysis from seminal plasma was realized after centrifugation. The seminal PLA_2 was purified in exclusion size chromatography using 0.15mol/L choline and 0.15mol/L NaCl as mobile phase. The fractions from the purification steps were analyzed by SDS-PAGE and a main component at 15kDa referring to PLA_2 was observed. Biochemical analyses show differences in content concentrations in the four stations of the year. In summer and autumn the constituents analyzed are elevated in both species, observing a relationship with reproductive seasonality.

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