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Enhanced *in vitro* fermentation parameters of guinea grass ecotype 'A' (*Panicum maximum*) and rice straw (*Oryza sativa*) with supplementation of exogenous fibrolytic enzymes

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A study was conducted to evaluate the use of exogenous enzymes as a potential means of improving the rumen fermentation of guinea grass 'ecotype A' (*Panicum maximum*) rice straw (*Oryza sativa*). The enzymes used for the *in vitro* incubations were characterized for Cellulase (CE), Xylanase (XY). Enzymes were supplemented separately (CE and XY) as treatments T1, T2, T3, T4 and a control with corresponding levels of enzymes in 5, 10, 20, 40 and 0 μ l for 500 mg ground (1 mm) substrates dry matter. Anaerobic buffer medium and strained ruminal fluid (42 ml) were added to the *in vitro* incubations (followed by 24 hours pre incubation of substrate and enzyme) in triplicates and *in vitro* gas production (IVGP) was measured at 2, 4, 8, 12, 18, 24 and 48 hours of incubation. At the end of incubation *in vitro* rumen dry matter disappearance (IVRDMD), ammonia nitrogen (NH₃-N), short chain fatty acid (SCFA) and metabolizable energy (ME) were estimated. All enzyme treatments except for some instances significantly increased ($p < 0.05$) IVGP while there was no significant effect on IVRDMD irrespective of enzyme or substrate. The total NH₃-N in fermentation liquid was significantly increased by both enzymes irrespective of substrate. Calculated values for SCFA and ME also have significantly enhanced with enzyme supplementation. Therefore it can be concluded that the use of fibrolytic enzymes as an effective way to improve the ruminal fermentation characteristics of guinea grass ecotype 'A' and rice straw.

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Milk protein polymorphism study in two Algerian sheep breeds-Hamra and Ouled Djellal

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In sheep, the polymorphism of major milk proteins is reduced as compared with other ruminant species like cattle and goats. As in other ruminant species, in sheep these polymorphisms were studied relative to milk quantity, quality and its manufacturing properties or for authenticity identification of dairy products. In Algeria, data concerning the characterization of the sheep breeds in the six loci codifying for major milk proteins genes are almost absent. The purpose of our study was to determine milk quality indices as well as milk protein polymorphism in local sheep breed using 60 samples of milk from two local sheep breeds Hamra and Ouled Djellal. Our work consisted in the isolation and characterization of milk proteins. For this, we used the precipitation of caseins Phi [pH 4.6]. After extraction, purification and assay both casein and serum protein fractions were then assayed by the Bradford method and controlled by polyacrylamide gel electrophoresis (PAGE) in the different conditions (native in the presence of urea and in the presence of SDS). The electrophoretic pattern of milk samples showed the presence similarities of four major caseins variants (α s1-, α s2- β - and κ -casein) and two whey proteins (β -lactoglobulin, α -lactalbumin) of two races Hamra and Ouled Djellal. But compared to bovine milk, they have helped to highlight some peculiarities as related to serum proteins (α La β Lg) as caseins including α s1-Cn.

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