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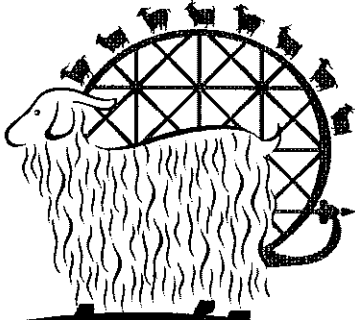
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Contributions of Caprine Agroalivopastoral Production Systems to Society and the Environment

BOOK of ABSTRACTS



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Recent advances in our understanding of acidosis in goats

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High producing ruminants receive highly fermentable diets to satisfy their high requirements. These diets induce a high production of organic acids in the rumen, and then release of protons which depress the ruminal pH under 6.0, a threshold value under which cellulolytic digestion is impaired. Health disturbances resulting from these diets are classified as acute (drastic reduction of rumen pH) or chronic (sub-acute rumen acidosis or SARA) which is the most frequent syndrome of acidosis in dairy farms based on the degree of ruminal pH depression. This disease has been widely described in dairy cows, but less in goats. This disease is quite difficult to study because with a given diet, animals are not impaired at the same moment and with an analogous severity.

Our understanding of acidosis has improved during the last years by measuring simultaneously in dairy goats fed different diets feeding behavior, rumen parameters, blood and plasma parameters, milk yield and composition. Thus, it was possible to study the interrelationships between these variables and to analyze the between-animal variability to better understand the between-animal differences in acidosis susceptibility.

Several assumptions have been made to better understand the multifactorial etiology of acidosis. The first one is based on feeding behavior. Some results show that pH evolution is highly related to intake rate and level. Chewing and sorting behaviors are modified when animals are given a high concentrate diet. The second assumption concerns the digestion and microbial origin: goats present different susceptibility to a sudden change from a normal to a high concentrate diet. This can be due to either differences of initial rumen parameters or to differences in absorption of volatile fatty acids and ammonia across the ruminal epithelium. A third assumption deals with the metabolism of the animal, and especially with the energy and electrolytic balances. Moreover, ruminal and metabolic acidosis are inversely related. Within and between days modeling approaches are also helpful to better understand the etiology and consequences of acidosis in dairy goats. Even if some points remain unclear, recent advances have been obtained in understanding acidosis in goats.