148. Adaptation of tropical cattle breeds to their environment, in the perspective of climatic change

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Cattle breeds may be broadly divided between temperate taurine breeds, from European origins, African taurine breeds, and Indian zebu breeds, and various admixed populations. A little number of these breeds has a worldwide distribution, while many of them have evolved in restrained areas and remain at a local or a regional level. Tropical countries are rich of a wide diversity of original cattle breeds, whose characteristics remain mostly undescribed. These characteristics are the results of various forces, such as the genetic background of the ancestral populations, the influence of agroecological environment in which they have evolved, and the livestock keeper preferences and practices. Tropical cattle breeds have therefore developed specific attributes and functions, to adapt to a wide range of environmental constraints and production systems. Such characteristics are the ability to tolerate high ambient temperature, with a reduced effect on their production skills, resistance to internal or external parasites and infectious diseases, valorization of rough diets, tolerance to harsh conditions and ability to recuperate during more favorable seasons, and working ability. These characteristics may be in the future of great utility to face the deleterious effects of climate change. The physiological traits involved in these characteristics are complex and their genetic basis has not yet been unraveled. However some studies of selection signatures identification give some insights on the genetic background of some adaptation traits of local tropical cattle breeds that could be useful in the future to face the direct and indirect effects of climatic change on livestock production systems.