Regional Changes in Brazilian Beef Cattle Production

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Objectives: The objective of this study was to analyze the dynamics of beef cattle production in Brazil on a municipal scale and to identify potential areas of strangulation for continued growth and variables that could limit the increase in production and productivity.

Materials and Methods: This study considered all municipalities in five regions of Brazil (5561). Data on cattle production in Brazil were obtained from the website of the Brazilian Institute for Geography and Statistics from 1977 and 2011. The spatial midpoint of production in the country was calculated for each year to assess the direction of production in the country. Changes in the relative production and acceleration of production were calculated, and the data were spatialized using ARCGIS®. Cluster and canonical discriminant analyses were performed to further highlight differences between regions in terms of cattle production.

Results: Currently, the mean production point has moved from the Center of Minas Gerais State (in the southeast region) to the North of Goiás State (in the midwest region). These data generate a reflection of changes in environmental factors, such as pasture type, temperature and humidity. The relative increase in production in the midwest and northern regions is evident, which is considerably higher compared to other regions. In the northern region, because the original herd was small, the initial acceleration (1980-1990) was high with the migration of cattle production from other regions, but in numeric terms, the herd size has only become expressive within the last 10 years. Recently, "traditional" cattle-rearing regions, such as the south and southeast, showed a reduction in growth rates as well as a reduction in herd size or internal migration over the period studied. Regardless of the slowing growth and significant reduction in herd numbers, the states of São Paulo, Minas Gerais, Mato Grosso do Sul, Mato Grosso and Goiás, still represent the majority of beef exports in Brazil. These states are where the main structure for export of slaughtered animals is located, and they are also the main centers for completing feed-lots, which explains the fact that even with a reduction of the herd, they remain the leading exporters of meat. However, with the technological improvements in the agricultural sector, soils that are currently limited for farming should, in the future, present economic viability and force livestock production to new regions of the country.

Conclusions: Changing the configuration of a production system for beef cattle production from one region to another requires skills and expertise as it passes through a redefinition of farming objectives, as well as strategies and processes to achieve better results. Future studies should incorporate variables related to the expansion of crops, income from plant products, average area of farms, different specializations in cow-calf, growth and completion of production systems and density of cattle in different regions of Brazil.