

## The sustainable potential of beef cattle in Brazil

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The Brazilian cattle herd has an estimated effective of 194.84 million heads created in 158.75 million hectares of pastures, 57.7 % of these are pastures in good condition, 6.2 % pastures degraded and and 36.1 % pastures natural (IBGE, 2006). Thus, the number of heads per hectare was 1.23 heads or 0.83 UA / hectare. Of the total of 194.84 million heads, it is estimated that 40.86 million are dairy cattle and 153,980,000 are beef cattle. Keeping the same ratio head / hectare for milk 1.23, about 32.71 million hectares are occupied with milk cattle. So the area explored in beef cattle is approximately 126,040,000 hectares. The intensive use of pastures for cows and confinement for Angus-Nellore crossbred calves can radically modify the beef cattle statistics, transforming it into a sustainable and profitable activity. According to simulation conducted by Embrapa Livestock Southeast Research Center supported by research, one can maintain a population of beef cattle 20 % less than the current in only 15.82 % of the pasture area currently used and produce 9.9 million tons of equivalent housing per year, against 8.0 million carcass equivalent tons currently. For simulation model takes as its starting point an area randomly assigned 275 hectares of pasture with carrying capacity of 0.83 UA per hectare for breeding / rearing / fattening. Of the 275 hectares available, 165.02 hectares are intended to pasture with high production of dry matter / hectare (16,200 kg of dry matter / year) and 109.13 hectares to corn production (16,150 kg of dry matter / year) for silage. With these dry matter production levels can be maintained up to 11.49 UA / ha year. With intensive technology can extinguish all currently existing categories of male above a year, which is 29.76 million heads less. Considering that emits a bovine between 40 and 70 kg of methane / year, is reducing the number of animals mean at least a reduction of 1.2 billion kg of methane gas, or a reduction of 19,33 % of carbon emissions. This will provide 105 million hectares, which can be used efficiently for the production of grain, wood pulp, sugar cane, coffee, fruit, etc. The evaluated technology will allow the producer to obtain a free cash flow per hectare / year of R\$ 857, 27.

**Keywords:** beef cattle production, reduction of methane emissions, economic viability of beef cattle.