

CROSSBREEDING AND NEW BEEF CATTLE BREEDS IN BRAZIL

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ABSTRACT

Data from both crossbreeding experiments and new breed development projects carried out in Brazil are reviewed in this paper, with the purpose of summarizing the results as far as the utilization of animal genetic resources is concerned. We consider the relative importance of differences, if any, among the strategies for utilizing animal genetic resources. These average relative differences (ARD) should be estimated for characters of economic importance to beef cattle producers and expressed in relation to the most commonly used genetic resources in a given region or country. The strategies of utilizing animal genetic resources for beef production (E = European breeds; Z = Zebu breeds; and NB = New breeds) may be classified, if one considers the different types of animals resulting from their utilization, into 5 classes: 1 - purebred breeding (E and Z breeds); 2 - F₁ production (E x Z, Z x E, E x E, Z x Z, NB x E, and NB x Z crossbreeding programs); 3 - backcross production (to either E or Z); 4 - three-cross production (three-breed crossbreeding systems); and 5 - new breed development and utilization.

Average relative differences (ARD), for a given characteristic, were estimated from data reported in the literature, as the relative difference (%) between means of different types of animals (purebred European, purebred Zebu, F₁, backcross, three-cross and new breed). These ARD estimates were then expressed as a proportion of that of purebred Zebu cattle (ARD = 100), without doubt the most common animal genetic resource for beef production in Brazil. Sufficient data were only available (for all types of animals and from at least two different experiments) for birth weight, weaning weight, liveweight at slaughter, carcass weight, and dressing percentage. Net average relative differences (NARD), obtained by averaging the ARD for these 5 characteristics of animals from the 5 classes of strategies defined above, were compared to that obtained by utilizing purebred Zebu cattle (NARD = 100) and the following results were obtained: three-cross production

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