

Analysis: ‘We can sequence an animal’s entire genome’ — How advanced biotechnology could dramatically improve meat production

The production of meat, the main protein consumed in the world, needs to grow as consumption increases. To this end, genetic improvement contributes effectively and continuously. According to researcher Mônica Ledur at Embrapa Swine and Poultry, new biotechnologies make possible advances in the knowledge of the genes that control the productive characteristics. “A more efficient animal leads to more sustainable production”, she [explains].

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The application of advanced biotechnologies in animal production ranges from genetic evaluation (using Genomic Selection, for example), through pedigree confirmation, characterization and genetic diversity, diagnosis of hereditary diseases, bioprospecting of bacteria of interest and resistance to diseases. “All these types of application consist of taking advantage of the genetic variability that already exists in populations,” she says, and adds: “One of the best ways to take advantage of the existing genetic variability is through the genetic improvement of herds. It is a simple, accumulative and quick way of making improvement, as it only uses selection and crosses”.

There is also the application of biotechnologies to create genetic variability, the so-called genetically modified organisms (GMOs), common in plants. “In transgenic plants, material from another species is placed in the culture of interest, such as pest resistance genes”, he explains. In gene editing technology, changes are made only to the genome itself, such as the correction of a mutation.

[Editor’s Note: This article has been translated from Portuguese and edited for clarity.]

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