Embrapa´s Animal Genomics Network and Biotechnology for Economically Important Traits

Alexandre Rodrigues Caetano, Ph.D.
Embrapa Genetic Resources and Biotechnology
Alexander.caetano@embrapa.br

Abstract - Embrapa´s Animal Genomics Network (EAGN) has been operating since 2008 to incorporate and develop data analysis tools, as well as generate and analyze genomic data for a series of ongoing projects within Embrapa´s research portfolio. The main grant supporting EAGN ended in December 2011 and the project had great success in achieving proposed goals and producing expected results. Moreover, a number of new projects were approved in the period in association with EAGN ongoing activities, leading EAGN to reach a prominent role in Embrapa´s research activities using genomic data to prospect genes of interest and improve genetic breeding programs. New technological and methodological trends have emerged in the period, marked mostly by changes in DNA Genotyping and Sequencing technologies and rapidly developing methods to apply data to conduct genetic evaluations and breeding (Genomic Selection). In this context, we structured a new network project (EAGN-II) which was funded for 48 months starting in January 2013 with the following main objectives: (a) promote the incorporation and development of new tools and methods to analyze genomic data focusing on implementing Genomic Evaluations and Selection into animal breeding programs under Embrapa´s responsibility; (b) continue to generate and analyze data for new projects aiming at prospecting genes of interest in food production species; (c) generate genomic information to develop basic tools for genetic management of species undergoing domestication and pre-breeding (i.e. native fish species); (d) prospect new species and molecules in the microbiome associated with different livestock species through metagenomic analysis. The EAGN has a modular structure designed to easily interact and work with new groups and projects and could greatly benefit from new collaborations.

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