



Planning, management and operational standards in piglet production: economic, social and environmental impacts

João D. Henn^{*1}, Jonas I. dos S. Filho¹, Jean C. P. V. B. Souza¹, Sandro L. Tremea² e Luizinho Caron¹

^{*}Assessment and evaluation of technologies; ¹Brazilian Agricultural Research Corporation - Embrapa Swine and Poultry. BR 153 km 110. Caixa Postal 21. CEP 89700-000 Concórdia - SC, Brasil. 89700-000; ²Aurora Alimentos, Chapecó, SC.

[*joao.henn@embrapa.br](mailto:joao.henn@embrapa.br)

The project of Planning, management and operational standards in piglet production named "Ideal Piglet", was developed in cooperation by Embrapa Swine and Poultry and Aurora Alimentos, and supported by Sebrae/SC. The main activity was to establish a management system based in productivity indexes control and operational standards implementation. This project was designed to provide to the farmers a total control of the process, achieving the productivity needed to keep them in the activity, with profit, using the same genetics, diet and equipment. It was created Standard Operating Procedures required to increase the productivity, based in planning, management and operational standards for the piglet production. This model could improve the management and productivity rates of hundreds of producers belonging to the Aurora Alimentos Cooperative System. The "Ideal Piglet" project brought a real contribution for the management and technical assistance qualification, therefore it become a permanent program in the Coop. In this study, we aimed to assess the economic, social and environmental impacts of this technology adoption. The impacts assessment was conducted using the Assessment System of Environmental and Social Impacts of Agricultural Technological Innovations - AMBITEC (Rodrigues et al, 2005). The Social Ambitec comprises 79 components, grouped into 4 major aspects: 1) employment; 2) income; 3) health; and 4) management and administration. The Environmental Ambitec comprises 11 indicators consisting of 52 components, grouped into five major aspects: 1) technological efficiency; 2) environmental preservation; 3) environmental remediation; 4) welfare and animal health; and 5) the product quality. The indicators were calculated for the social and environmental impact indexes estimation, ranging from -15 to +15. This scale was standardized for all individual indicators and later for the general index of the technology impact. A questionnaire was applied to producers, technicians and researchers in order to assess the impacts of each social and environmental indicator, economic performance and the level of adoption. For the economic impacts assessment, it was used the economic surplus method by productivity increase (productivity differential x price) and cost reduction (cost differential x quantity). The internal rate of return (IRR) calculation, net present value (NPV) and benefit/cost (B/C) ratio, based on the analysis of technology costs and benefits flow were estimated. The social impact index was 6.20, which is considered very expressive. The environmental impact index was 1.40, also positive. The cost/benefit analysis resulted in IRR equal 160.40%, the NPV of R\$ 1,965,305.00 and B/C ratio was 4.30. In conclusion, the social and environmental impacts of this technology were positive, especially for pig's farm income generating, residue recycling, training, welfare and animal health. The economic impact was also very positive, improving the piglet production profitability.

Keywords: Swine production, sustainable development, technology transfer, good manufacturing practices, production management, technical assistance.