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POTENTIALITIES AND VALORIZATION OF THE NATIVE SWINE PIAU BREED IN THE CONTEXT OF THE AGRARIAN REFORM SETTLEMENTS

POTENCIALIDADES E VALORIZAÇÃO DA RAÇA DE SUÍNO NATIVO PIAU NO CONTEXTO DOS ASSENTAMENTOS DE REFORMA AGRÁRIA

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Abstract: Most small farmers in Brazil have in pig farming activities an alternative to obtaining the food of high nutritional value and profitability. The objective of this work was to implement and develop a system of sustainable extensive production of pigs in the centers of irradiation and agroecological management in the areas of agrarian reform settlements in the northern region of Minas Gerais, enabling to expand the source of income of the settlers and greater diffusion and valorization of the native swine breed. To start the extension project, contact with farmers and project exposure was carried out, identification of multiplier agents and formation of family nuclei, after a nucleus of agroecological management of pigs was implanted in the settlements in the municipality of Montes Claros using pure animals of the Piau breed. A survey of the limiting and potential factors was conducted with the community, to consolidate a pig model that best adapts to local specificities. Data were tabulated for one year of collection regarding the zootechnical indexes of the animals. We obtained 8.6 piglets born alive/childbirth/sow; 6.47 piglets weaned/calving/sow in the project, indexes that are higher than the zootechnical indexes obtained in traditional swine management, using national breeds. With the implementation of this sustainable and agroecological production system in the areas of agrarian reform settlements in the Northern Region of Minas Gerais, it was possible to obtain better productive production data, in addition to greater dissemination and valorization of the native swine breed.

Keywords: Family farming, income generation, extensive management, native breeds.

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Resumo: A maior parte dos pequenos produtores rurais no Brasil tem em atividades de criação de suínos caipira uma alternativa para obtenção de alimento de alto valor nutritivo e de rentabilidade. O objetivo deste trabalho foi implantar e desenvolver um sistema de produção extensivo sustentável de suínos, nos centros de irradiação e manejo agroecológico nas áreas de assentamentos de reforma agrária da região do Norte de Minas Gerais, possibilitando ampliar a fonte de renda dos assentados e maior difusão e valorização da raça suína nativa. Para início do projeto de extensão foi realizado o contato com os agricultores e exposição do projeto, identificação dos agentes multiplicadores e formação de núcleos familiares, após, implantada uma granja núcleo de manejo agroecológico de suínos nos assentamentos no município de Montes Claros utilizando animais puros da raça Piau. Foi realizado um levantamento dos fatores limitantes e potenciais junto à comunidade, com o objetivo de se consolidar um modelo de suínos que melhor se adapta às especificidades locais. Foi realizada a tabulação de dados de um ano de coleta referente aos índices zootécnicos dos animais. Foram obtidos 8,6 leitões nascidos vivos/parto/porca; 6,47 leitões desmamados/parto/porca no projeto, índices estes que são superiores aos índices zootécnicos obtidos na suinocultura de manejo tradicional, utilizando raças nacionais. Com a implantação deste sistema de produção sustentável e agroecológico nas áreas de assentamentos de reforma agrária da região do Norte de Minas foi possível obter melhores dados produtivos da produção, além de maior difusão e valorização da raça suína nativa.

Palavras-chave: Agricultura familiar, geração de renda, manejo extensivo, raças nativas.

INTRODUCTION

In Brazil, pig farming is an important activity for the economy, generating employment and income, with revenues of R$ 12 billion per year. This scenario is represented by cooperatives and integrators, which hold 75% of the national pig herd, while small independent producers only 25% (ANIS et al., 2020). According to CEPEA (2019), Brazil produced 3.75 million tons and exported 693,000 tons of pigs to more than 70 countries. Its reproductive cycle and the financial return fast, which makes it interesting to the small property.

Brazil has several breeds of domestic animals that developed from breeds brought by Portuguese settlers soon after the discovery (LIMA et al., 2018). Over the last five centuries, these breeds have been submitted to natural selection in certain environments, to the point of presenting specific characteristics of adaptation to such conditions, is now known as "Criolo, local or naturalized", among these breeds we have pigs of national breeds, also known as " free-range pig " (VERONEZE et al., 2014).

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The rearing of "Criolo, local or naturalized" pigs is present in almost all Brazilian rural properties, offering meat and lard, important in the eating habits of these populations (GERMANO, 2002). The native Piau breed was almost extinct, leaving only three pure plants in the country. It enjoys great popularity, such as good feed conversion and rusticity, which allows ideal crossings with specialized breeds (BULOS et al., 2016). With the intensification of pig production systems, the arrival of large integrations supported by large companies, associated with the mistakes made by the official technical assistance and rural extension agencies, the pigs of the Criolo breeds suffered great racial mischaracterization due to crossings with exotic breeds, improved in non-tropical environments.

Pig farming is widespread in the rural environment due to its ability to reproduce and ease of creation. This model has as production characteristics the use of family labor, contemplates food sovereignty, and stimulates the economy with the sale of surplus (BARROS et al., 2012). The consumption of pork derived from redneck pigs was a tradition in the past of our country. After the 1970, the consumption and rearing of redneck pigs weakened due to the industrial production of pigs, working with imported breeds, generating a system of productive integration (MARIANTE, 2005).

The great myth regarding the consumption of redneck pigs was in the possible harms that their fat can bring to health. Studies conducted with pigs reared free and slaughtered late observed that, in addition to the higher amount of protein in meat, fat in a higher percentage is rich in unsaturated fatty acids, considered healthy for human consumption (SILVA FILHO et al., 2008). Technical Assistance and Rural Extension policies in rural areas are extremely fundamental services in the process of developing the production chain for family agriculture. With this perspective, the Intensive System of Pigs Reared Outdoors (SISCAL) presents itself as an alternative for the entry into pig production or to increase its production and does not have financial resources (EMBRAPA, 2002).

Thus, the objective of the work was to implement and develop a system of sustainable extensive production of pigs, in the centers of irradiation and agroecological management in the areas of agrarian reform settlements of the Northern region of Minas Gerais, enabling to expand the source of income of the settlers and greater diffusion and valorization of the native swine breed.

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MATERIAL AND METHODS

To start the extension project, contact with farmers and exposure of the project, identification of multiplier agents, and formation of family centers were carried out. For this phase were responsible the technicians of the partner entities, professors, and students of the courses of Agronomy and Animal Science of the Federal University of Minas Gerais, who will hold meetings with the coordination and with the communities involved in the project.

The multiplier agents are farmers who have experience in pig production and after training, these producers have become the reference for their community, each nucleus having at least one multiplier agent, to facilitate the articulation and formation of the family nucleus. A farm was established for agroecological management of pigs in the Estrela do Norte Settlement (ENS), in the municipality of Montes Claros using pure Piau animals. And a Paraguaçu Research Execution Unit (UPEP).

A survey of limiting and potential factors was carried out with the community, to consolidate a model of pigs that best adapts to local specificities. The implementation of this project complemented some programs and actions developed in these areas; Food and Nutrition Security Program, in partnership with the State Government; Terra-Sol Project (Support to Agroindustrialization), developed in partnership with Instituto Nacional de Colonização e Reforma Agrária/ Ministério do Desenvolvimento Agrário INCRA/MDA; Structuring Project of the BioNatur Network of Agroecological Seeds, in partnership with COONATERRA; National Biodiesel Program, in partnership with Petrobrás, Program to promote sustainable development in the settlement areas, in partnership with AESCA and Government of Navarra/Spain.

Six pure Piau animals donated by the Department of Animal Science of the Federal University of Viçosa - UFV were acquired, being 2 breeding males (M1 and M2)

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and 4 matrices (F1, F2, F3, and F4). The crossings were made for the production of F1 (M1f1, M2f2, M1f3, and M2f4) (Figure 2).

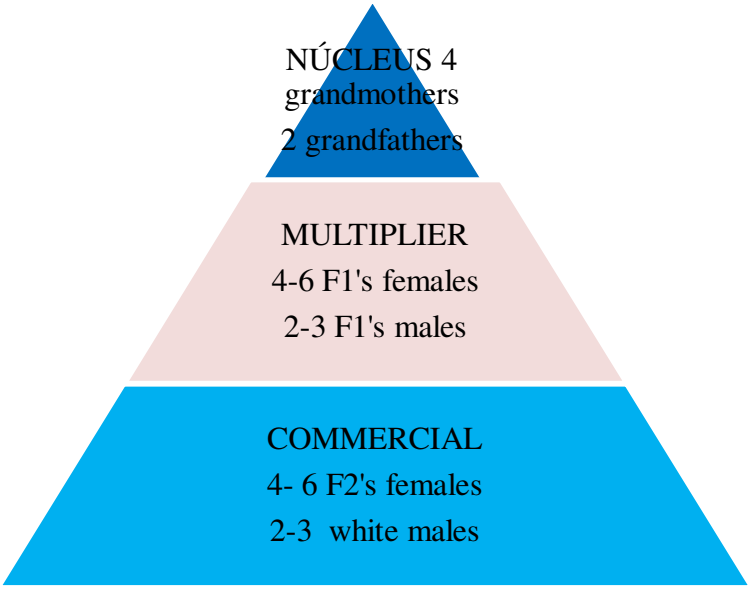

Figure 2. Representative pyramid of the Squad and crossings carried out

In the first year, the genetic nucleus was implanted with the involvement of the cooperative settlers of the Veredas da Terra Cooperative, in parallel with the performance of training, where they had the opportunity to acquire technical knowledge about zootechnical data and agroecological management of pigs, as well as about the appropriate facilities (Figure 3).



Figure 3. Animals implanted in the core farm

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Over 02 years, data were collected regarding the zootechnical indices of the plants, such as the number of live births, number of weaned animals, and mortality.

Data analysis was performed with the aid of spreadsheets, using Microsoft Office Excel® 2007. The data from the collections were tabulated and transformed into percentage values, based on these tables, to facilitate the interpretation of the results obtained. Thus, combining a descriptive statistic of the obtained data set.

RESULTS AND DISCUSSION

As result, an average of 7.5 piglets were born live/calving/soat; 7.2 weaned piglets/delivery/som, training of those involved, irradiation to the settlement areas and choice and inclusion of multipliers.

Regarding the zootechnical indices in the Paraguaçu Research Execution Unit, 8.6 piglets were born live/delivery/sock; 6.47 piglets weaned/calving/sock. These indexes are lower than those recommended for technical pig farming of exotic breeds, however, much higher than the zootechnical indices obtained in traditional pig farming, using national breeds (Table 1).

Table 1. Zootechnical indexes of the extensive sustainable production of Piau pigs in the model in the North of Minas Gerais State.

Nucleus	Live Births / Childbirth / Sow	Nº Weaned / Birthing / Sow	Mortality (%)
ENS[1]	7,5	7,2	4,0
UPEP[2]	8,6	6,47	24,76

[1] ENS: Estrela do Norte Settlement. [2] UPEP: Paraguaçu Research Execution Unit.

The constitution of the multipliers was similar to that of the nucleus, where 02 gilts and an F1 breeder aged around 35 days were passed on. These multipliers made these gilts, matrices, and crossed with the breeder resulting in an F2 product that will be destined to the trades. Based on the productivity of 6 piglets/som/delivery and a prolificity of 2 calvings/sor/year, the core farm will produce 48 piglets/year, with 24 males and 24 females at the probability. Of the animals born in the Nucleus, 32.05% were selected for

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reproduction due to their racial and reproductive characteristics, the rest were commercialized for slaughter to capitate resources for the project.

In 1 year, 28% more multipliers were incorporated than in the previous year of implementation, due to the results and credibility acquired by the project, which showed more rustic animals with higher productive and reproductive performance than those already seen in the region. Technical Assistance and Rural Extension policies in rural areas are extremely fundamental services in the process of developing the production chain in the context of family agriculture. According to Dias (2007), the role of technical assistance and Rural Extension is of paramount importance, considering that the rural producer is usually unassisted.

Pig farming is widespread in the rural environment due to its ability to reproduce and ease of creation. This model has as production characteristics the use of family labor, contemplates food sovereignty, and stimulates the economy with the sale of surplus. However, in the subsistence model, few of these advances were passed on. The activity still follows the rustic models of rearing, with little technical assistance, in addition to management and poor sanitary conditions (SANTOS et al., 2016).

This is often an alternative to more income for these mainly family-based farmers. With the intensification of pig production systems, the arrival of large integrations supported by large companies, some mistakes made by the official technical assistance and rural extension agencies, Criolo pigs suffered great racial mischaracterization due to crossings with exotic breeds, improved in non-tropical environments (FORTES et al., 2018).

These breeds, despite their great productive skills, such as rapid growth and great prolificity, do not present the rusticity so necessary for their permanence in a tropical climate and much less adapted to the production systems used by rural populations, the result of the knowledge accumulated by them for so many years (SIQUEIRA 2018).

The use of country breeds is interesting due to its high rusticity because it is a Brazilian breed well adapted to tropical climatic conditions. It is important to encourage and ensure the continuity of correct management at all stages of animal production. This requires continuous technical assistance to producers to ensure production procedures and good practices. As reported by Silva et al., (2019) the national breeds (Piau, Caruncho,

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Canastra, Nilo, and others) are the most suitable for small producers, since they do not require much zootechnical control and have little commercial objectives.

In this context of production, improvements in the quality of life of producers would fit due to increased income and the possibility of expansion of the activity. Another point would be the awareness of breeders about good production practices, such as well-being, health, production costs, among others. The beginning of the project is the reduction of the rural exodus and the fixation of man to the countryside, making him feel stimulated to continue in this culture (VARGAS et al., 2018).

Producers generally have the reluctant characteristic of not accepting with the flexibility the use of new tools even if it is offering better conditions for the exploitation of the developed activity (ROCHA et al., 2016). However, this difficulty does not make impossible the professional/producer relationship, when working at the pace of the target audience. The project also assumed social importance to the extent that it underlies the learning process, with emphasis on the stage in which the academic theoretical bases in a higher education institution are formalized.

With this, it becomes an important activity in the profile of the student for professional preparation and insertion in the labor market. It is expected that the knowledge to be transmitted to producers can have as a response to profitability in production, it is sought that with associative that producers can have better conditions of buying inputs and selling the final product. Marketing techniques, proper management, marketing, and production control will serve as the basis for economically viable production.

CONCLUSIONS

It is of great importance to the preservation of native breeds because it is an alternative of income and food security for family agriculture because it is a rustic breed, resistant and already adapted to the conditions of the semi-arid. With the implementation of this sustainable and agroecological production system in the areas of agrarian reform settlements in the Northern Region of Minas Gerais State, it was possible to obtain better productive production data, in addition to greater diffusion and valorization of the native swine breed.

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