revista online de extensão e cultura
REALIZAÇÃO

DOI 10.30612/realizacao.v12i23.19556
ISSN: 2358-3401

Submitted January 31, 2025
Accepted March 13, 2025
Published on August 8, 2025

III FARMING FIELD DAY IN THE SEMIARID REGION OF MINAS GERAIS NORTHERN: MILK SYSTEM MANAGEMENT

III DIA DE CAMPO NA REGIÃO SEMIÁRIDA DO NORTE DE MINAS GERAIS: MANEJO DO SISTEMA DE PRODUÇÃO DE LEITE

III JORNADA DE CAMPO EN LA REGIÓN SEMIÁRIDA DEL NORTE DE MINAS GERAIS: MANEJO DEL SISTEMA DE PRODUCCIÓN DE LECHE

Flávio Pinto Monção[1]
Universidade Estadual de Montes Claros, Campus Janaúba
ORCID: https://orcid.org/0000-0002-9821-0107
Ana Cláudia Maia Soares
SENAR-MG
ORCID: https://orcid.org/0000-0003-0078-9518
Vicente Ribeiro Rocha Júnior
Universidade Estadual de Montes Claros
ORCID: https://orcid.org/0000-0002-0721-1981
Jordânia Pereira da Silva
Universidade Estadual de Montes Claros
ORCID: https://orcid.org/0009-0004-0534-7027
Nelson de Abreu Delvaux Júnior
Universidade Estadual de Montes Claros
ORCID: https://orcid.org/0000-0003-4125-3744
Anselmo Batista Antunes
EMATER Minas Gerais
ORCID: https://orcid.org/0009-0001-5803-5164

Abstract: The meeting of people linked to agribusiness, considering the same segment, is a tool that can be used to exchange experiences generated in research centers with rural producers and field technicians and vice versa. There is always an increase in individual knowledge through the exchange of knowledge between people. The field day held on farms

[1] Autor para Correspondência: moncaomoncao@yahoo.com.br

has this focus, to guide and encourage agricultural producers, students and field technicians from the semiarid region regarding the use of technologies strategically aimed at improving animal and plant productivity. The III Field Day held at Fazenda São Jorge, in Verdelândia, semiarid region of northern Minas Gerais, was aimed at exchanging knowledge within the dairy activity practiced in the region, and developed through technical lectures on management in dairy farming, production and use of sorghum silage for dairy cattle, genetic improvement of cattle for milk production with emphasis on the semiarid region, implementation, management and use of forage palm for cattle. There were 461 producers participating, most of whom were from the municipalities of Verdelândia, Porteirinha, Monte Azul, Jaíba and Janaúba. The rural producers praised the event and the Mayor of Verdelândia highlighted the importance of holding more field days with lectures and guidance for rural producers in the semiarid region, indicating that the reception of the rural extension action was positive in all aspects, highlighting the importance of new events with lectures and technical guidance for producers in the semiarid region of northern Minas Gerais.

Keywords: Rural extension, Forage, cactus pear, Unimontes.

Resumo: O encontro de pessoas ligadas ao agronegócio, considerando o mesmo segmento, é uma ferramenta que pode ser utilizada para trocar experiências geradas em centros de pesquisa com produtores rurais e técnicos de campo e vice-versa. Sempre há crescimento do conhecimento individual por meio da troca de saberes entre as pessoas. A realização do dia de campo em fazendas tem esse foco, orientar e incentivar produtores agropecuaristas, alunos e técnicos de campo da região semiárida quanto ao uso de tecnologias de forma estratégica visando à melhoria da produtividade animal e vegetal. O III Dia de Campo realizado na Fazenda São Jorge, em Verdelândia, região semiárida do Norte de Minas, foi direcionado para troca de conhecimento dentro da atividade leiteira praticada na região, e desenvolvido por meio de palestras técnicas sobre gestão na pecuária de leite, produção e utilização de silagem de sorgo para bovinos leiteiros, melhoramento genético de bovinos para a produção de leite com ênfase na região semiárida, implantação, manejo e utilização de palma forrageira para bovinos. Houve a participação de 461 produtores, sendo a maioria destes pertencentes aos Municípios de Verdelândia, Porteirinha, Monte Azul, Jaíba e Janaúba. Os produtores rurais elogiaram o evento e o Prefeito de Verdelândia destacou a importância da realização de mais dias de campo com palestras e orientação aos produtores rurais da região semiárida, indicando que a recepção da ação de extensão rural foi positiva

em todos os aspectos, apontando para a importância de novos eventos com palestras e orientação técnica aos produtores da região semiárida do Norte de Minas Gerais.
Palavras-chave: Extensão rural, Forragem, Palma forrageira, Unimontes.

Resumen: El encuentro de personas vinculadas al agronegocio, considerando un mismo segmento, es una herramienta que puede ser utilizada para intercambiar experiencias generadas en los centros de investigación con productores rurales y técnicos de campo y viceversa. Siempre hay crecimiento en el conocimiento individual a través del intercambio de conocimientos entre personas. El objetivo de la realización de días de campo en fincas es orientar y estimular a los productores agrícolas, estudiantes y técnicos de campo de la región semiárida a utilizar tecnologías de manera estratégica para mejorar la productividad animal y vegetal. El III Día de Campo realizado en la Hacienda São Jorge, en Verdelândia, región semiárida del Norte de Minas Gerais, tuvo como objetivo el intercambio de conocimientos dentro de la actividad lechera practicada en la región, y se desarrolló a través de charlas técnicas sobre gestión en la producción lechera, producción y utilización de ensilaje de sorgo para ganado lechero, mejoramiento genético de ganado para producción de leche con énfasis en la región semiárida, implementación, manejo y utilización de palma forrajera para ganado. Participaron 461 productores, la mayoría pertenecientes a los municipios de Verdelândia, Porteirinha, Monte Azul, Jaíba y Janaúba. Los productores rurales elogiaron el evento y el alcalde de Verdelândia destacó la importancia de realizar más días de campo con charlas y orientaciones para los productores rurales de la región semiárida, indicando que la recepción de la acción de extensión rural fue positiva en todos los aspectos, apuntando la importancia de nuevos eventos con charlas y orientaciones técnicas para los productores de la región semiárida del Norte de Minas Gerais.
Palabras clave: Extensión rural, Forrajeras, Palma forrajera, Unimontes.

INTRODUCTION

Brazil is a world powerhouse in the production of feeds such as meat and milk. In terms of cattle production, the country stands out as one of the largest producers and exporters in the world. This prominence in ruminant production is due to the tropical climate forage plants that play a fundamental and unquestionable role in animal feed and that, when well-managed, are capable of providing nutrients such as carbohydrates and protein for the animals to maintain, produce and reproduce for long periods.

With around 197.2 million cattle, Brazil has the largest commercial herd in the world,

with the animals managed on 161 million hectares of native or cultivated pastures (Abiec, 2024). Of this total number of cattle, 15.7 million head are involved in the production of 34.6 billion liters of milk in the country (Anuário do Leite, 2024), mainly from crossbred cows. In Brazil, the price paid for milk in cheese factories and dairies is one of the factors that defines the production system to be used. Most farms have used extensive production systems in the summer and fall, and semi-intensive and intensive production systems in the winter and spring.

In the semiarid region of northern Minas Gerais, long periods of drought associated with fluctuations in the nutritional value of forage plants mean that milk producers need to conserve forage and inputs and manage animals semi-intensively and intensively during the dry season in order to maintain the productivity of the production system. However, this animal management is not an easy task on the farm, especially when it comes to balancing production costs, which are basically defined by the cost of feeding the animals. In view of this challenge, the importance of regional extension actions developed by Unimontes professors and other research, extension and technical management assistance institutions such as EPAMIG, EMATER and Senar Minas, respectively, stands out in supporting and disseminating agronomic and zootechnical technologies to rural producers (Monção et al., 2019a; Monção et al., 2021; Monção et al., 2022).

Although there is an increasing number of rural producers with access to information through the internet and other technologies, there are still gaps in knowledge regarding milk production (Monção et al., 2021; Monção et al., 2022). Furthermore, many rural producers do not have access to the internet and quality technical assistance, especially in matters involving business management.

Field days are a tool that has been used by the aforementioned institutions and others in the country to change the scenario of animal production through the dissemination of technology generated in research centers and through the exchange of experiences with rural producers (Menegat et al., 2019; Monção et al., 2021).

In the city of Verdelândia, located in the North of the State of Minas Gerais, this practice of rural and university extension through field days is taking shape in rural areas due to the positive results generated through previous events.

Little by little, the paradigms brought from ancestors are broken, modulated or adapted to current milk production systems and this response from producers directs the University and other institutions to continue rural extension activities.

Based on the above, the objective of the III Field Day was to guide and encourage agricultural producers in the semiarid region of Northern Minas Gerais regarding the adoption

and use of technologies to improve milk production on the property, since the event is an important moment for producers and technicians to exchange and improve knowledge (Monção et al., 2021). Furthermore, the occasion allows for interaction among those involved, especially with regard to the University-Field.

MATERIAL AND METHODS

The 3rd Field Day was held at the São Jorge Farm, located in the municipality of Verdelândia, in the semiarid region of northern Minas Gerais. According to Thornthwaite's classification, the region's climate is BSh, with rain in the summer and well-defined dry periods in autumn, winter and spring. The average annual rainfall is less than 800 mm, with an average annual temperature of 27 °C. The climate is mesothermal, almost megathermal, due to the altitude, subhumid and semiarid, with irregular rainfall and long periods of drought. Based on experience from previous events, the actions carried out during the 3rd Field Day for rural producers in April 2023 were outlined after a prior survey of the activities and needs routinely developed on local rural properties, such as silage production, grass and forage palm management, milking and animal management, diet management and selection of dairy cows adapted to semiarid conditions. The 3rd Field Day was developed through technical lectures on the management, production and use of sorghum silage for ruminants; genetic improvement of cattle for milk production with emphasis on the semiarid region; implementation, management and use of forage palm and BRS capiaçu grass; strategies for bulky and concentrated supplementation for dairy cattle; and management and use of vaccines in cattle. All the methodology used was adapted from the 1st and 2nd Field Days published by Monção et al. (2021) and Monção et al. (2022).

In addition to the technical lectures, companies from the region were present to present agricultural machinery, veterinary products and animal nutrition.

In the northern region of Minas Gerais, dairy farming is growing due to the shorter return on invested capital and the generation of short-term and monthly income. Furthermore, the development of cheese factories combined with the expansion of some dairies has increased the demand for milk, which has boosted the market in the region and contributed to reducing the rural exodus.

During the meetings, posters, TV, projectors, banners and folders, among other resources, were used to convey information to producers and technicians in the best possible way. All educational and field-use materials, such as seeds, enriched mineral supplements, milking equipment and other topics, were purchased from local stores and companies with the

help of programs and projects developed by Unimontes, Campus Janaúba, Senar Minas and partner institutions such as the Municipal Department of Agriculture and Livestock of Verdelândia.

The lectures were publicized through verbal contact with store owners in the region, printed posters, digital media, social networks and through the distribution of folders in strategic locations by the Municipal Department of Agriculture and Livestock and Senar Minas. The schedule planned for the III field day was based on the registration of producers to participate in the event; breakfast and visit to the exhibitors. Afterwards, there were presentations lasting 40 minutes each and 20 minutes for questions. Four lectures were given. At the end, everyone was invited to the celebratory lunch.

The *Feedback* was obtained verbally by the producers after an interview using a random approach. A group of students, with a pre-prepared questionnaire with three questions, approached the participants to participate in responding.

RESULTS AND DISCUSSION

Just like the 2nd Field Day, members of Family Farming were present to sell their home-made products and some organic items. After the official opening of the event, the first lecture was held, addressing the management of dairy farming. The speaker invited by Senar Minas spoke with great skill about the importance that is given to controlling the costs of the activity on the property, as well as to controlling zootechnical indexes.

Values such as the acquisition of animals, diets, veterinary medicines and other points were highlighted as relevant when organizing the accounts and also monitoring production costs. This information was well received by producers and technicians, who claimed that this data is easy to collect in daily rural life.

With the technical assistance provided by the institutions involved, producers will be able to better organize themselves in relation to production costs, highlighting the costs of greatest relevance in the final amount and management strategies to reduce the total cost of production. The speaker made it clear which are the main items to be controlled and noted by producers to monitor profitability.

It is worth noting that on the 1st Field Day some producers were reluctant to participate due to their inexperience with these events, because they did not believe in the university/rural environment link or perhaps because they somehow felt exposed, which was not observed among producers on the 3rd Field Day.

On the 1st and 2nd Field Days, 93 and 409 producers participated, respectively. More

relevant than the number of participants in each event was the composition observed. There was an increase in the number of rural producers, that is, people truly involved in agribusiness who made a greater effort to be present at the III Field Day, which was attended by 461 producers from several municipalities such as Jaíba, Matias Cardoso, Mucambinho, Janaúba, Porteirinha, Nova Porteirinha, Mato Verde, Espinosa, Montes Claros, Monte Azul, Sebastião Laranjeiras and Verdelândia (Figure 1). The extension actions developed through the III Field Day at Fazenda São Jorge served many rural producers from the semi-arid region, northern Minas Gerais and southwestern Bahia because agriculture is increasingly connected to social media, which allows for greater dissemination and access to the desired niche.



Figure 1. III Field Day held at the São Jorge Farm, Municipality of Verdelândia-MG

Other producers reported that the III Field Day provided them with contact with owners and representatives of dairy farms and agricultural implements such as tractors and milking machines available for purchase in the region, which was important for improving the marketing of individual and community milk (Figure 2).



Figure 2. Meeting of producers at the São Jorge Farm, Municipality of Verdelândia-MG

The main limitation of milk production systems in the semiarid region of Brazil is the quantitative and qualitative supply of bulky feed throughout the year for animals, depending on the seasonality of rainfall in the region.

In practice, forage plants such as sagegrass (*Urochloa mosambicensis* (Hanck). Dandy), buffel-grass (*Cenchrus ciliaris*), andropogon grass (*Andropogon gayanus* Kunth) and native legumes are the most commonly used for mass production.

However, the preserved forage mass obtained with these forages is not always sufficient for the quantity and demand of animals throughout the seasonal production period and, consequently, there is a deficit (Monção et al., 2019a; Monção et al., 2019b; Monção et al., 2020a) both in volume and nutritional value. An aggravating factor observed in this scenario is the increasingly smaller size of rural properties, which exposes the need for vertical integration of animal and plant production.

Working with forage species that are adapted to the semi-arid climate, tolerant to drought, with uncertainties about precipitation is the biggest challenge for producers in this region. Therefore, among the extension actions presented at the III Field Day, adapted forage

plants and strategies for conserving the mass for use, especially during the dry season, were highlighted.

During the lecture on the ensilage of forage plants and the production of forage cactus, topics such as the importance of sampling and the interpretation of soil analysis for cultivation, and the appropriate management of forage plants for ensilage such as BRS capiaçu grass, sorghum, corn and millet, which are the main forage plants used in the region for conservation, were addressed. Within the management, topics such as the ideal height and phenological stage of harvest for different forages were addressed, as well as the care to be observed in the stages of cutting, silo filling, compaction, types of tarpaulins and sealing, which are critical points in the silage process.

In the lecture on the selection of animals with dairy aptitude and management of diets for dairy cows, given by Prof. Dr. Vicente Ribeiro Rocha Júnior, the importance of F1 Holstein x Zebu cows was addressed.

These animals have shown themselves to be quite adapted to the conditions of the semi-arid region due to the combination of the hardiness and adaptation of zebu animals and the productivity provided by the Holstein breed. The F1 Holstein x Zebu matrices stand out, therefore, for their tolerance to thermal stress, mainly heat, and several studies carried out at the State University of Montes Claros (Unimontes) prove the productive efficiency of this animal in the semiarid region of Northern Minas Gerais (Ramos et al., 2021; Rigueira et al., 2021).

One of the novelties presented by the speaker was the possibility of producing silage with 60% of the mass consisting of sorghum biomass, in natural matter, and 40% of sliced forage cactus, which increases the total digestible nutrient content of the ensiled mass, which is of great importance for the region.

With a focus on milk production, the III Field Day also highlighted the lectures on the management and use of forage cactus (*Opuntia* and *Nopalea*) and BRS capiaçu grass. These topics were also addressed at the previous event and it was noted that there are still many difficulties in managing forage cactus and BRS capiaçu grass. Therefore, these topics were revisited.

Forage cactus is one of the few plants for animal intake found in the semiarid region that can produce up to 400 t/ha of green mass in hostile environments, and this has sparked the interest of many milk producers in the region in specific technical guidelines for this crop.

Forage cactus has a high water use efficiency for dry matter production when compared to other forage plants and, under dryland conditions, produces 10 to 30 t/ha of dry mass, with an average of 65% non-fibrous carbohydrates and 60% total digestible nutrients. It is a feed rich

in energy and water for animals that are produced in regions where water availability is very limited (Monção et al., 2019b; Monção et al., 2022).

In addition, with the high cost of acquiring inputs such as corn, sorghum, millet and wheat bran used in the formulation of diets for ruminants, the energy content of cactus has been a great ally for producers in reducing animal feed costs.

Ingredients such as corn are not produced on a large scale in the semi-arid region and, for this reason, it also has a high share of feed costs (Monção et al., 2019 a).

BRS capiaçu grass has the genetic potential to produce up to 72 t of dry matter/ha.year-1 in the semiarid region of northern Minas Gerais, with good nutritional value, provided that the soil's physical and chemical resources are not limiting. Therefore, it is of great importance for the growth of dairy farming in the semiarid region of northern Minas Gerais.

Due to its importance, management techniques related to planting, such as fertilization, spacing, methods, and maintenance, such as irrigation, and control of weeds, pests, and diseases, were presented at the III Field Day.

The cutting height of BRS capiaçu grass was the subject of much debate at the II Field Day because some producers ensilage the material with a high moisture content. A height of 1.8 meters (after 50 days of regrowth) is recommended for starting daily cuts of BRS capiaçu grass. For ensiling, cutting at a height of 3.0 meters (90 to 120 days of regrowth) is recommended. Cutting grass for silage before 90 days of regrowth (less than 2.5 meters in height) results in high losses of dry matter in the form of effluents, low animal intake and performance. Some have even reported giving up grass cultivation for this reason.

CONCLUSION

The receptiveness of producers and the importance of the Field Day in disseminating technologies developed in study and research centers to rural producers was detected, aiming to increase regional animal and plant production, improving the quality of life in rural areas and the source of income for those involved.

ACKNOWLEDGMENTS

The authors would like to thank Unimontes, the National Rural Learning Service (SENAR) of Minas Gerais, Unipec Jr. Consulting Company, the Minas Gerais State Research Support Foundation (FAPEMIG), the National Council for Scientific and Technological Development (CNPq), the National Institute of Science and Technology, and the Municipality of Verdelândia for their support in carrying out the event. This study was funded in part by the

Coordination for the Improvement of Higher Education Personnel (CAPES) - Financial Code 001.

REFERENCES

ABIEC. **Beef report perfil da pecuária no Brasil.** 2024. Disponível em: http://abiec.com.br/en/. Acesso em 27/01/2025.

ANUÁRIO LEITE 2024: avaliação genética multirracial. Disponível em https://www.embrapa.br/busca-de-publicacoes/-/publicacao/1164754/anuario-leite-2024-avaliacao-genetica-multirracial. Acesso em Janeiro de 2025.

MENEGAT, A.S.; NUNES, F.P.; CONCEIÇÃO, C.A.; OLIVEIRA, E.R. A Extensão Universitária no Assentamento Areias, Nioaque/MS: diálogos transformando pessoas, saberes e processos de produção. **Revista online de Extensão e Cultura Realização**, v.6, n.12, p.16-35, 2019.

MONÇÃO, F.P., SOARES, A.C.M., ROCHA JÚNIOR, V.R., ALENCAR, A.M.S., CRUZ, F.N.F. DA, BACKSMANN, C.F., LEAL, D.B. Dia de campo na região semiárida do norte de Minas Gerais: manejo do sistema de produção de leite. **Revista online de Extensão e Cultura Realização**, v.9, n.17, p.52–62, 2022.

MONÇÃO, F.P.; ALKIMIN, J.M.; RIGUEIRA, J.P.S.; TOLENTINO, D.C.; ROCHA JÚNIOR, V.R.; CHAMONE, J.M.A.; CARVALHO, C.C.S.; MARQUES, O.F.C.; MELO, J.A.R.; SILVA, M.F.P.; SALES, E.C.J.; ROCHA, M.H. Transferência de tecnologias zootécnicas a agricultores familiares no município de Espinosa/MG. **Revista online de Extensão e Cultura Realização**, v.6, n.11, p.84-139, 2019a.

MONÇÃO, F.P.; COSTA, M.A.M.S.; RIGUEIRA, J.P.S.; MOURA, M.M.A.; ROCHA JÚNIOR, V.R.; GOMES, V.M.; LEAL, D.B.; MARANHÃO, C.M.A.; ALBUQUERQUE, C.J.B.; CHAMONE, J.M.A. Yield and nutritional value of BRS Capiaçu grass at different regrowth ages. **Semina Ciências Agrárias**, v.41, n.5, 2019b.

MONÇÃO, F.P.; COSTA, M.A.M.S.; RIGUEIRA, J.P.S.; SALES, E.C.J.; LEAL, D.B.; SILVA, M.F.P.; GOMES, V.M.; CHAMONE, J.M.A.; ALVES, D.D.; CARVALHO, C.C.S.; MURTA, J.E.J.; ROCHA JÚNIOR, V.R. Productivity and nutritional value of BRS capiaçu grass (*Pennisetum purpureum*) managed at four regrowth ages in a semiarid region. **Tropical Animal Health and Production,** v.51, p.1-7, 2020a.

MONÇÃO, F.P.; ROCHA JÚNIOR, V.R.; MENDES, E.V.C.; CARVALHO, C.C.S.; SALES, E.C.J.; FERREIRA, H.C.; SOARES, A.C.M. Dia de campo sobre tecnologias agronômicas e

zootécnicas para produtores rurais do semiárido norte de Minas Gerais. **Revista online de Extensão e Cultura Realização**, v.8, n.15, p.133-141, 2021.

RAMOS, J.C.P.; ROCHA JÚNIOR, V.R.; MONÇÃO, F.P.; PARRELA, R.A.C.; CAXITO, A.M.; CORDEIRO, M.W.S.; HORA, F.F.; PIRES, D.A.A. Effect of replacing forage sorghum silage with biomass sorghum silage in diets for F1 Holstein × Zebu lactating cows. **Tropical Animal Health and Production**, v.53, n.1, p.1-12, 2021.

RIGUEIRA, J.P.S.; JESUS, N.G.; ROCHA JÚNIOR, V.R.; MONÇÃO, F.P.; COSTA, N.M.; DAVID, G.S.S.; SILVA, F.V. CARVALHO, C.C.S. Effects of different banana crop wastes on nutrient intake and digestibility, microbial protein synthesis, feeding behavior, and animal performance of ¾ Holstein × Zebu heifers in a semiarid rangeland. **Tropical Animal Health and Production**, v.53, n.1, p.1-13, 2021.