revista online de extensão e cultura
REALIZAÇÃO

DOI 10.30612/realizacao.v12i23.20005
ISSN: 2358-3401

Submitted on April 14, 2025
Accepted June 11, 2025
Published on August 8, 2025

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USE OF INSTAGRAM AS A SOCIAL NETWORK FOR THE DISSEMINATION OF TECHNICAL INFORMATION IN ANIMAL SCIENCES: CASE STUDY AT UFVJM

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Abstract: This study aimed to evaluate the effectiveness of Instagram as a tool for disseminating technical information in animal science through a university extension project linked to the Animal Science program at UFVJM. Between January and December 2021, weekly posts were published on the program's official profile (@dzoufvjm) and on four student profiles. The data were analyzed based on metrics provided by the platform itself, such as reach, likes, comments, shares, and views, using a quantitative and descriptive approach. The results indicated significant growth in the institutional profile's performance, with a 144% increase in the reach of technical publications between the first and second semesters. Strategies such as choosing times when followers are most active (between 9:00 AM and 9:00 PM) and addressing relevant topics contributed to engagement. The conclusion is that, when used strategically, social media can be effective tools for rural extension and technical dissemination, expanding communication between academia and society. In short, the research demonstrated that social networks, when used strategically, are a valuable tool for the instant dissemination of technical information in animal science and agribusiness, facilitating communication and the dissemination of knowledge.
Keywords: Communication, Knowledge, Instagram, Media.

Resumo: Este estudo teve como objetivo avaliar a eficácia do Instagram como ferramenta para a divulgação de informações técnicas em zootecnia, por meio de um projeto de extensão universitária vinculado ao curso de Zootecnia da UFVJM. Entre janeiro e dezembro de 2021, foram realizadas publicações semanais no perfil oficial do curso (@dzoufvjm) e em quatro perfis de estudantes. Os dados foram analisados com base em métricas fornecidas pela própria plataforma, como alcance, curtidas, comentários, compartilhamentos e visualizações, utilizando abordagem quantitativa e descritiva. Os resultados indicaram crescimento expressivo no desempenho do perfil institucional, com aumento de 144% no alcance de publicações técnicas entre o primeiro e o segundo semestre. Estratégias como a escolha de horários de maior atividade dos seguidores (entre 9h e 21h) e a abordagem de temas relevantes contribuíram para o engajamento. Conclui-se que, quando utilizadas de forma estratégica, as redes sociais podem ser ferramentas eficazes de extensão rural e divulgação técnica, ampliando a comunicação entre o meio acadêmico e a sociedade. Em suma, a pesquisa demonstrou que as redes sociais, quando utilizadas de forma estratégica,

são uma ferramenta valiosa para a divulgação instantânea de informações técnicas em zootecnia e agronegócio, facilitando a comunicação e a disseminação de conhecimento.

Palavras-chave: Comunicação, Conhecimento, Instagram, Mídias.

Resumen: Este estudio tuvo como objetivo evaluar la eficacia de Instagram como herramienta para la difusión de información técnica en zootecnia, a través de un proyecto de extensión universitaria vinculado al curso de Zootecnia de la UFVJM. Entre enero y diciembre de 2021, se realizaron publicaciones semanales en el perfil oficial del curso (@dzoufvjm) y en cuatro perfiles de estudiantes. Los datos se analizaron con base en métricas proporcionadas por la propia plataforma, como alcance, "me gusta", comentarios, publicaciones compartidas y visualizaciones, utilizando un enfoque cuantitativo y descriptivo. Los resultados indicaron un crecimiento significativo en el rendimiento del perfil institucional, con un incremento del 144% en el alcance de las publicaciones técnicas entre el primer y el segundo semestre. Estrategias como elegir los horarios de mayor actividad de los seguidores (entre las 9:00 y las 21:00) y abordar temas relevantes contribuyeron a la interacción. Se concluye que, cuando se utilizan estratégicamente, las redes sociales pueden ser herramientas eficaces para la extensión rural y la difusión técnica, ampliando la comunicación entre la academia y la sociedad. En resumen, la investigación demostró que las redes sociales, cuando se utilizan estratégicamente, son una herramienta valiosa para la difusión instantánea de información técnica en ciencia animal y agronegocios, facilitando la comunicación y la difusión del conocimiento.

Palabras clave: Comunicación, Conocimiento, Instagram, Medios.

INTRODUCTION

The turn of the 20th century to the 21st was marked by a profound technological revolution that democratized access to education through distance learning and expanded access to knowledge in various spheres: political, cultural, religious, and technological. In this context, the internet emerged as the central tool of this transformation. According to Schiavoni (2007), the internet makes it possible to organize, transform, and process information with increasing speed and capacity, at ever-lower costs. The author also highlights the intrinsically interactive nature of the internet, where users cease to be mere spectators and actively interact with information.

Digital social networks, as pointed out by Araújo and Vilaça (2016), enhance this

interactivity, allowing individuals to connect, read news, express opinions, make demands, produce knowledge, disseminate information and mobilize collectively.

In this context, the academic environment is no longer the only source of technical and scientific information, and universities and other educational institutions are embracing digital media to expand the dissemination of their knowledge. Prensky (2001) introduces the concepts of "digital natives" and "digital immigrants" to describe the different relationships with technology. Digital natives, born between 1986 and 2010, grew up immersed in digital technologies and naturally adapt to their constant updates, such as the use of social media.

Social networks, according to Grossi et al. (2014), allow people to connect with people around the world, share opinions and content, and create spaces for exchanging knowledge and experiences. Users can form virtual groups, discuss specific topics, and disseminate ideas relevant to society. The authors conclude that social networks play a fundamental role in the daily lives of the Internet generation, driving virtual society, breaking down geographic boundaries, and highlighting the power of individuality online.

Given the points raised, this study aimed to evaluate the potential of social media as a means of disseminating technical information on animal husbandry and agribusiness. Furthermore, it aimed to evaluate the best strategies for achieving greater reach in publications.

MATERIALS AND METHODS

This study was conducted between January and December 2021, with funding from the Institutional Extension Grant Program of the UFVJM Office of the Provost for Extension and Culture (registration 2021010120210253034). The initiative focused on using Instagram as a technical dissemination platform, through the weekly publication of content on the official profile of the UFVJM Animal Science program (@dzoufvjm) and on four student profiles. The content was written in accessible language and focused on practicality, aimed primarily at rural producers, agricultural science students, technicians, and the public interested in topics related to animal science and agribusiness. The initiative sought not only to promote technical knowledge but also to bridge the gap between academia and society through digital communication. The strategy consisted of weekly publication of digital content, covering three main formats:

- **Illustrative technical posts:** Creation of informative designs on zootechnical topics, using editing *software.*

- **Explanatory videos:** Production of short videos (up to 5 minutes) to clarify complex topics and demystify misinformation frequently disseminated in the media.
- **Interactive content:** Publication of photos and short videos addressing technical topics relevant to the public's daily lives.

Text posts were published Monday through Friday, between 9:00 AM and 9:00 PM. Videos were posted on Sundays or Mondays at 6:00 PM, and times determined by the team based on their availability. Audience engagement was monitored using Instagram's analytics tools, which allowed us to track comments, questions, likes, saves, and shares. Monthly reports were generated, recording the performance of each post.

The data was organized into comparative tables, divided between the first and second half of the year. Due to Instagram's limitations, which only display data from the last 90 days, some data from the first half of the year were not recorded by the team.

The project, which originated as an outreach initiative, set a goal of reaching at least 1,000 people with the publications in the first half of the year.

Account reach refers to the number of unique accounts that saw the content published on the profiles (stories, Reels videos and IGTV videos), and technical posts represent the content posted on animal science topics.

METRICS

According to Santana (2020), it is possible to monitor the audience that uses social media using metrics, thus enabling the development of strategies to improve online reputation. Therefore, through certain elements provided by social media networks themselves, information and data are generated that will, in the future, serve as input for users in decision-making within an institution.

When an Instagram user creates a business profile, the social network provides metrics to track results. Metrics are statistics based on collected data, measuring the performance of posts. They are based on:

- Impressions: number of times publications were seen;
- Reach: is the number of people who saw the profile's posts;
- Profile visits: how many people visited the profile in question;
- Likes: number of people who liked a certain post;

- Comments: number of people who commented on a given post;
- Saved: number of users who saved that post.
- Gender and Age: Shows the gender and age of your followers;
- Location: shows the main countries and cities where the audience is located;
- Followers (hours): this is the average time that followers of that profile spend on Instagram on a specific day;
- Followers (days): shows which days of the week that profile's followers are most active.

RESULTS AND DISCUSSION

Instagram has been used as an important professional tool, where many people share their routines, while others follow them out of affinity, thus creating what we now call *digital influencers* or content creators. These people earn their income through partnerships with brands, product promotion, creating and teaching courses, selling a "lifestyle," or simply disseminating information on a specific topic to society in general.

Santana (2020) stated that marketing is one of the most widely used strategies by professionals. Furthermore, marketing also utilizes metrics related to relevance indicators that monitor social media, which are crucial for decision-making. They enable the assessment of potential positive or negative results obtained through *online social media*.

Table 1 presents data regarding public interaction with zootechnical content publications (technical posts and videos) from January 2 to June 30, 2021.

Table 1. Public interaction with publications (technical posts and videos) made between January and June 2021, on four different Instagram profiles.

Profile	**Technical Posts**	**Scope**	**Likes**	**Comments**	**Shares**
@dzoufvjm	6	2,423	449	27	151
1j	12	7,536	322	83	44
2d	16	19,936	1,306	84	145
3j	30	12,726	1,282	141	153
Total	**64**	**42,621**	**3,359**	**335**	**493**
Profile	**Videos**	**Scope**	**Likes**	**Views**	**Shares**
@dzoufvjm	1	1,036	62	338	17
1j	3	2.156	214	1,843	23
2d	0	0	0	0	0
3j	5	2,470	338	2.112	46
Total	**9**	**5662**	**614**	**4293**	**86**

Source: Instagram social network metrics (2021).

Because it was something new for the team and the followers of the profiles used, we initially achieved results that exceeded expectations based on the proposed goals of engaging at least 1,000 people with the publications. That same semester, the project team conceived and organized an *online event* titled "1st Online Buffalo Farming Meeting," which directly influenced the growth of the profile of the UFVJM Animal Science program and, consequently, increased access to the shared publications. Table 2 presents data related to the target audience's interaction with publications made between July 1 and December 12, 2021.

Table 2. Public interaction with publications (technical posts and videos) was made between July and December 2021, on five different Instagram profiles.

Profile	**Technical Posts**	**Scope**	**Likes**	**Comments**	**Shares**
@dzoufvjm	13	5,932	894	232	75
2d	8	4.251	437	59	57
3j	23	9,688	1,086	97	160
4g	7	1,618	164	8	1
Total	**56**	**22,831**	**2,761**	**399**	**304**
Profile	**Videos**	**Scope**	**Likes**	**Views**	**Shares**
@dzoufvjm	1	4,626	167	4,773	53
2d	3	1,782	157	823	14
3j	3	3,228	215	1,238	3
4g	1	263	33	323	8
Total	**8**	**9899**	**572**	**7157**	**78**

Source: Instagram social network metrics (2021).

In the second half of 2021, the @dzoufvjm profile saw a significant increase in the reach of its posts. This growth was likely driven by publicity during the VI Animal Production Symposium, hosted by the Department of Animal Science in the last quarter of the year. The event helped increase the profile's visibility, resulting in a larger number of followers and the reach of its posts in other cities and countries.

There was also a change in the team of collaborators. The student with profile 1j, who initially participated in the project, began contributing directly to the @dzoufvjm profile due to a change in her personal profile's content niche. To continue the work, a new student with profile 4g was added to the team.

The data revealed that women showed greater engagement with content, while men accounted for most of the account reach. These findings are in line with the IBGE's 2021

Continuous National Household Sample Survey (PNAD Contínua), which found a slightly higher percentage of women (79.3%) than men (77.1%) in internet use. The study also indicated that women owned more cell phones for personal use (82.5%) than men (79.3%), with cell phones being the primary internet access device in 99.5% of households, according to the same survey.

Table 3 shows the age range of the most active followers on the @dzoufvjm profile between July and December 2021, with the highest concentration in the 18 to 34 age group. This data corroborate research by IBGE (2021), which points to the predominance of internet use among young people aged 19 to 39, representing 90% of users.

This audience, typically comprised of college students, young professionals, and recent graduates, is characterized by a high level of familiarity with digital technologies, visual language, and rapid information consumption. Considering this profile, posts prioritized dynamic and visual formats, such as short videos and illustrative art, with direct, objective language that connects with users' everyday reality.

Furthermore, this age group tends to seek educational and up-to-date content, especially when related to their training or professional interests. Therefore, the chosen topics focused not only on the technical field of animal science, but also on topics that generate identification and arouse curiosity, such as animal welfare, food safety, and agribusiness trends. Strategies such as the use of informal, interactive language and the presence of multimedia elements were also adopted to increase engagement with this audience.

Table 3. Age range (%) of followers of the @dzoufvjm profile between July and December 2021.

Age Range	Percentage (%)
13 - 17	1.1
18 - 24	35.1
25 - 34	38.9
35 - 44	17.4
45 - 54	4.8
55 - 64	1.9
65+	0.5
Total	**99.7**

Source: Instagram social network metrics (2021).

It was observed that the variation in the number of interactions was not significantly influenced by the day of the week of the posts, but rather by the times of peak follower activity. Table 4 presents the periods of peak activity for followers of the @dzoufvjm profile, indicating the times and days they are most likely *online* on Instagram.

Table 4. Number of people at the most active times on the @dzoufvjm profile.

Times of the day	Mon	To have	Wed	Thu	Fri	Sat	Sun
0h	116	117	124	131	131	187	161
3h	63	62	67	58	61	70	61
6h	301	316	302	315	302	237	206
9am	419	426	425	413	420	396	393
12pm	455	453	449	446	445	427	418
3pm	444	444	438	435	435	419	410
6pm	488	481	473	479	465	448	454
9pm	421	426	419	423	414	387	400

Source: Instagram social network metrics (2021).

Consequently, most technical posts were published regardless of the day of the week, but within the timeframe of 9:00 AM to 9:00 PM, which likely contributed to the increased follower access to the profile's posts. Another relevant piece of data provided by Instagram metrics was the cities where the audience for the UFVJM Animal Science program's profile is located, as well as the reach and engagement in each city, as shown in Table 5.

Table 5. Origin of Followers x Engagement x Reach of the @dzoufvjm profile (%).

City-States	Followers	Engagement	Scope
Diamantina-MG	15.8	17.5	5.5
Belo Horizonte-MG	3.9	2.8	2.3
Curvelo –MG	1.7	2.1	0
Montes Claros-MG	1.7	1.9	0

Unai-MG	1.7	0	0
Sao Paulo-SP	0	0	2.1
Tourmaline-MG	0	0	1.1

Source: Instagram social network metrics (2021).

The data reveals that most of the followers who generated reach and engagement for the profile were in Diamantina, Minas Gerais. This concentration is explained by the fact that the city is home to the JK *Campus,* where the zootechnics program is held. In addition to the cities, the metrics also indicate the countries where followers are concentrated, both in terms of engagement and reach, as shown in Table 6.

Table 6. Countries of origin of Followers x Engagement x Reach of the @dzoufvjm profile (%).

Countries	**Followers**	**Engagement**	**Scope**
Brazil	96.8	97.4	95.7
Venezuela	0.5	0.3	0
Canada	0.3	0.3	0
Italy	0.1	0.3	0
Colombia	0.3	0.1	0
Portugal	0.2	0.1	0
Uruguay	0.1	0.1	0
United States	0	0	0.5
Paraguay	0	0	0.5
Türkiye	0	0	0.3

Source: Instagram social network metrics (2021).

The literature does not establish defined parameters for evaluating the performance of technical posts on Instagram. However, data provided by the platform itself indicates consistent growth in the profile of the UFVJM Animal Science program across all metrics analyzed. Instagram's algorithm also revealed that content considered "controversial," such as the quality and processing of UHT milk, food safety, and animal welfare, tends to generate greater engagement, attracting more comments, likes, and shares, which, in turn, increases the reach of posts.

The dissemination of technical information on social media can also be considered a teaching tool, given the immense popularity of social media. This dissemination of information on these networks enables learning in cyberspace. Oliveira Ramos (2023) highlighted something called digital literacy, where the author stated that social pathways and spaces are created through technology. Therefore, it can be assumed that the dissemination of information on online platforms allows for awareness and learning, even among users unfamiliar with the agricultural environment, in addition to strengthening connections between people from different locations, educational backgrounds, and environments.

Furthermore, the dissemination of information through an online profile linked to a higher education institution can infer greater credibility, which was also evidenced in this project.

The course profile (dzoufvjm) performed better than the staff members' private profiles, especially in the second semester. This performance is believed to be attributed to the greater credibility and trustworthiness perceived by the public in relation to an official academic profile. Private profiles, on the other hand, primarily reached an audience of friends and family, with little or no connection to animal science, which may have influenced the results.

Throughout the study, it became clear that social media platforms like Instagram can be effective for disseminating technical information. The platform offers tools and strategies that facilitate content creation and sharing, such as identifying peak audience activity times and days.

Despite the positive results, it is important to emphasize the need for more formal and professional use of social media, given the growing spread of misinformation, known as "fake news." A study by a cybersecurity company mentioned by Canaltech (SOUZA, 2020) revealed that 62% of Brazilians have difficulty distinguishing fake news.

Fake news is a highly relevant topic, especially when it comes to the agricultural sector and its products. In their article "Where Do They Come From?!", Oliveira Ramos et al. (2023)

highlighted the importance of informing communities, especially those in urban areas with no connection to rural areas, about the origins of food and the production chain, aiming to demystify fake news about animal products.

The ease and speed of current technologies, paradoxically, can lead to a lack of interest or patience among the public in dedicating time to absorbing useful and legitimate knowledge shared by professionals on social media. It's important to encourage the appreciation of technical and scientific content on platforms that were previously predominantly used for leisure and entertainment.

Considering the need to disseminate quality information, rural extension is a valuable tool for disseminating information and techniques to people. Gonçalves et al. (2024) highlighted the importance of rural extension in their work, reiterating that it is not limited to educational institutions but can also be implemented by other sectors. Therefore, an online profile can, through written publications or videos, be considered a rural extension tool, thus promoting the dissemination of quality information.

In an online world, where news and information are disseminated so quickly and easily, the need for technical dissemination becomes even greater. This is achieved through platforms that are accessible not only to academia but also to the public, in different locations and with varying educational backgrounds. Furthermore, it seeks to raise public awareness of agricultural activities and demonstrate all the care and benefits encompassed by the guidelines of a zootechnics course.

CONCLUSION

The internet has proven to be a powerful tool for the instant dissemination of knowledge and global communication, proving effective in disseminating technical information on animal husbandry and agribusiness, in addition to enabling the identification of optimized publishing strategies to reach the target audience.

This study demonstrated that using social media to disseminate technical information requires a combination of well-defined strategies. The best approaches for engaging the target audience are considered the day, time, and type of post. Posts made Monday through Friday, between 9:00 AM and 9:00 PM, addressing topics relevant to people's daily lives, achieved the greatest reach.

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