


## EVALUATION OF THE EFFICACY OF THE SKINCARE KIT "BELEZAS DO AGRESTE" IN THE SKIN CARE ROUTINE IN A GROUP OF UPE VOLUNTEERS

 <https://doi.org/10.56238/arev6n2-183>

Submitted on: 23/09/2024

Publication date: 23/10/2024

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### ABSTRACT

Highlighting the importance of the skin and its functions of protection and thermoregulation, skin conditions and their psychosocial effects, and the increase in the search for hygiene and aesthetic products, the following work seeks to evaluate the effectiveness of the skincare kit distributed to volunteers by the extension project Belezas do Agreste 3.0. The interactions of Instagram® users with the extension project page, which publishes reliable information about skin care weekly, were analyzed, and a beauty kit consisting of moisturizing gel and neutral and exfoliating soaps was distributed to volunteers who freely agreed to participate in the research. The kit was produced by the members of the extension project under the best hygienic-sanitary conditions, and personalized instructions for use were distributed to the participants according to the evaluation of the type of skin they have. The research, approved by the UPE's Ethics and Experimentation Committee with human beings, was carried out from the collection of participants' responses to a structured online questionnaire to evaluate the products, respecting the privacy and

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integrity of the data obtained. The results are presented in the form of graphs and report positive evaluations regarding the information published on the project's social network and the products present in the beauty kit; specifically in relation to Instagram®, an increase of just over 1000% in the reach of the extension project page was recorded. Considering the distribution of the beauty kit and the evaluation of its products, the participants claimed an improvement in the appearance of the skin, in addition to the reduction of oiliness and promotion of softness. Thus, this work can be considered productive and satisfactory in terms of reaching the general population on the theme of aesthetics through the dissemination of quality information on a social network, in addition to distributing a beauty kit to participants who voluntarily joined the extension project Belezas do Agreste and evaluated the products in the kit as efficient in improving the general appearance of the skin.

**Keywords:** Social Networks, Beauty Kit, *Skincare*, Extension Project.

## 1 INTRODUCTION

The skin, which holds the title of the largest organ in the human body, is a complex triad composed of epidermis, dermis, and hypodermis. It consists of several cell types, such as keratinocytes, melanocytes, adipocytes, among others, and its main function is the protection of internal organs, which extends to protection against ultraviolet radiation (UVR), external aggressors and pathogens (Bernardo; Saints; Silva; 2019). In the aging process, in addition to the accumulation of these external factors, internal structural changes are manifested, such as decreased collagen synthesis (an element of paramount relevance in the preservation of the extracellular matrix (Silva; Penna, 2012). This decrease begins around 25 years of age, with an approximate loss of 1% per year, concomitantly with cellular dehydration, culminating in dryness and leaving it thinner. The consequences of neglect in skin care can manifest themselves in the form of acne, eczema, psoriasis, rosacea, melanoma, impetigo, and even cancer (De Lima, 2023).

In addition, skin conditions can be the origin of psychosocial problems, such as sadness caused by the feeling of maladjustment to beauty standards, displeasure, stress, difficulties in social interaction and discrimination (Botelho; Dos Santos; Farias, 2020). What is socially determined as "ugly" stimulates low self-esteem and self-worth, which is reflected in the daily lives of patients with skin conditions. Social stigmatization mistakenly associates these conditions with lack of hygiene and illnesses, which can lead, in more severe cases, to mood disorders such as depression and anxiety, which aggravate and/or postpone recovery from the conditions (Ribeiro et al., 2010).

Given the above, it is possible to understand why the search for cosmetics and medicines in the personal hygiene, perfumery and cosmetics (HPPC) sector has followed the global trend of body and mind care. Specifically in relation to Brazil, we are the fourth largest HPPC consumer market in the world, in addition to second place in the global ranking of new product launches, with skin care reaching eighth place in the ranking of most consumed products in the country (Abihpec, 2024). This is due to the social importance given to beauty standards, in addition to the growing exposure to content related to appearance, well-being and skin health, with Instagram® being the most important social network in digital influence (Ribeiro, 2010). Having created a trend that not only requires attention to the health of consumers, but also to sustainability and the environment.

Thus, studies aimed at the development of natural products have received great attention, where they are used as an alternative to synthetic-based cosmetics, an act essentially based on Interministerial Ordinance No. 2,960 (12/09/2008) that approves the National Program of Medicinal Plants and Herbal Medicines and creates the National Committee of Medicinal Plants and Herbal Medicines. Within the search for natural products that can replace existing cosmetics, studies with carbohydrates obtained from plant seeds show that these biopolymers have an excellent extraction yield and promising biotechnological applications in cosmetics (Cunha et al., 2009).

Being carbohydrates obtained from plant seeds, galactomannans are widely used as thickeners and stabilizers in creams and lotions. More specifically, galactomannan extracted from the seed of the plant species *Cassia grandis*, a plant native to Brazil and common in the Agreste region of Pernambuco, has been shown to be effective in immobilizing substances (Albuquerque et al., 2017b) and in wound healing (Albuquerque et al., 2017a); in addition, it has been demonstrated as a cosmetic potential (Albuquerque et al., 2016). Still on polysaccharides, these are one of the main organic compounds of *Aloe vera* (*A. barbadensis* Miller), popularly called "aloe" and widely distributed in Brazil. It is a xeromorphic species that has a large water storage capacity – estimated at 99% - 99.5% of its parenchymal constitution – which configures a powerful moisturizing effect (De Santana et al., 2021).

With the importance of natural products in mind and the effectiveness of social networks in disseminating information, the Belezas do Agreste 3.0 extension project, in its third year of operation, maintains the practice of developing quality content in the digital environment with reliable and scientifically proven information in relation to health, well-being and cosmetics, such as the correct use of sunscreen, hydration and skin protection. Reaching an average of 200 followers per weekly publication, the extension group is not limited to the theoretical part, but concomitantly produces beauty kits composed of glycerinated soap, exfoliating soap and moisturizing gel based on natural and biodegradable products extracted from plants common in the Agreste Pernambucano, such as the plant species mentioned above: *C. grandis* and *A. vera*. This kit is distributed to volunteers from the UPE Garanhuns community and its surroundings as a suggestion of a natural, sustainable, personalized and affordable alternative cosmetic routine for the skin (skincare).

This work was developed with the objective of evaluating both the theoretical content (published on Instagram®) and the practical part (the quality of the products in the skincare kit) of the extension project Belezas do Agreste 3.0. To this end, the work was divided into parts: (1) recording the performance (reach of followers, likes and shares) of the posts on the Belezas do Agreste page on Instagram®; (2) production of beauty kits and distribution to volunteers registered on the social network page; and (3) sending an evaluation form to participants for the collection and analysis of data about the effectiveness of the products and the information disseminated on the project's social network.

## **METHODOLOGY**

The research was carried out from the development of the extension project Beauties of Agreste 3.0 of UPE campus Garanhuns, using the following processes:

### **DISCLOSURE OF INFORMATION ON THE SOCIAL NETWORK INSTAGRAM®**

The social media platform chosen for this purpose was Instagram®, and this choice was based on previous experience with previous versions of the extension project. Such familiarity with this platform is justified by its nature as a communication vehicle that houses a diversity of content related to health, care and well-being.

In February 2023, a strategic meeting was conducted with the team to organize the publications, establishing groups composed of up to five members and outlining possible topics to be addressed. In this context, the responsibility for preparing the publications was distributed, on a rotating basis, among the groups, ranging from the search for information, from sources such as books and scientific articles, to the development of the layout of the corresponding image in the Instagram® publication.

In order to evaluate the receptivity of the content posted, the group undertook to collect, at the end of each week, quantitative records of interactions, such as likes, shares, account reach, and visits to the project's profile. This data was then shared in a virtual meeting with the other members, providing a deeper understanding of the demands of the users-followers. This systematic practice contributed to a constant optimization of subsequent posts, aiming to more effectively meet the expectations and interests of the audience.

### **PRODUCTION AND DISTRIBUTION OF BEAUTY KITS**

The beauty kit of the Belezas do Agreste extension project, entitled "Kit Belezas do Agreste", was composed of a glycerinated soap, an exfoliating soap and a moisturizing gel. Each of these products has been added with the polysaccharide galactomannan from the plant species *C. grandis*. Galactomannan extraction was performed using the method proposed by Albuquerque et al. (2014), which consists of a sequence of procedures involving aqueous extraction, 46% (1:3 v/v) ethanolic precipitation, and subsequent washes with PA alcohol and acetone [1:1 (v/v)]. At this point, it should be noted that *C. grandis*' galactomannan gel has already been tested in a Scientific Initiation project approved by the IC/Multicampi 2020-2021 public notice entitled "Evaluation of the efficacy of galactomannan gel extracted from *C. grandis* seeds in the skin care routine in a group of volunteers from UPE campus Garanhuns". The project was approved with opinion number 4,287,737 by the CEP of the Amaury de Medeiros Integrated Health Center - CISAM/UPE, and obtained excellent results in relation to the use of this gel.

The glycerinated soap was produced by mixing 1 L of liquid base for glycerinated soap, 10 mL of galactomannan (0.5%, w/v), 45 mL of sodium lauryl ether sulfate, and 5 mL of Dov essence. The exfoliating soap was produced in the same way, adding 2 g of crushed passion fruit seeds.

The moisturizing gel, in turn, was made from an aqueous solution of galactomannan at 1.5 % (w/v), maintained under constant magnetic agitation at 500 rpm for a period of 12 h. For the addition of aloe vera extract, aloin was removed, followed by the use of 500 mL of homogenized gel in a mixer. Subsequently, 1 g of citric acid was incorporated into the homogenized aloe vera gel, the pH was adjusted to a range between 4.0 and 6.0 and, finally, the aloe vera gel and galactomannan gel were mixed until a homogeneous compound was obtained, which was stored in a refrigerated environment (2 to 8 °C) until the kits were distributed.

All the components of the beauty kit were produced by the members of the extension project Belezas do Agreste; The distribution of the kits, also under the responsibility of the extension workers, took place free of charge because it is an extension project. Registration was opened for 20 volunteers who show interest from the dissemination of the kit on Instagram®. It is noteworthy that those who presented any of these characteristics were excluded from the selection: pregnant women, breastfeeding women or those with rosacea, psoriasis, allergic dermatitis and grade III and IV acne. They were also asked about a history of symptoms of pruritus/urticaria, skin redness, fever, malaise, asthma and/or



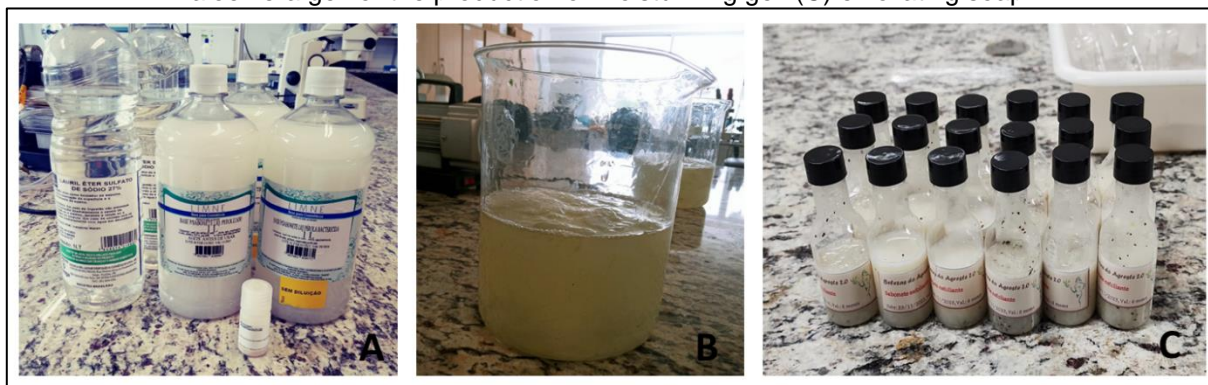
eczema after using the following products: liquid base for glycerinated soap, sodium lauryl ether sulfate, Dov essence, citric acid, galactomannan and aloe. In view of any affirmative answer to these questions, the delivery of the kit was canceled along with the presentation of the justification for this choice.

In addition, it should be noted that, if a volunteer presented the above symptoms without having prior knowledge of an allergy or intolerance to any product, he would be evaluated by a dermatologist collaborating with the project and professor at the Department of Medicine of the University of Pernambuco. If any medication is prescribed, the costs would be covered by the research coordinator, in addition to psychological support in public service, being monitored by the extension project team. It is important to note, however, that the situation described above has never occurred in any of the three years of operation of the Belezas do Agreste project.

Along with the kits, storage and use instructions were made available for each skin type (combination, normal, dry and oily). The kit could be replaced every 60 days to volunteers who showed interest.

In order to evaluate the content of the publications on Instagram® and the quality of the skincare kit products, an online structured questionnaire was applied through the Google Forms® platform, of an optional nature, which configures the objective of this project presented to CEP Multicampi.

Figure 1 – Constituents of the Belezas do Agreste kit. (A) Materials for the production of glycerinated soap. (B) aloe vera gel for the production of moisturizing gel. (C) exfoliating soap.



Source: The author (2023).

## TYPE OF STUDY

To evaluate the extension experience, a field research was applied. Field research is the type of research that intends to seek information directly from the researched

population. It requires the researcher to have a more direct encounter. In this case, the researcher needs to go to the space where the phenomenon occurs, or has occurred, and gather a set of information to be documented (Gonsalves, 2001). The following is the detailed methodological path of the field research in question, which was supported by Resolution 466/2012-CNS/CONEP and Circular Letter No. 2/2021/CONEP/SECNS/MS.

## PLACE OF STUDY

The research was applied in a virtual environment, through a structured online questionnaire, following the recommendations of Circular Letter No. 2/2021/CONEP/SECNS/MS.

## POPULATION AND SAMPLE

The research was carried out with the participants of the extension project Belezas do Agreste 3.0 and who agreed to answer the structured online evaluation questionnaire. In all, 60 skincare kits produced by the extension workers were distributed to participants interested in using it as a suggestion for a daily facial skin care routine.

## PERIOD OF COMPLETION OF THE WORK

The collection of evaluations using the forms began in December 2023, according to the schedule of the Belezas do Agreste extension project, after approval by the UPE Ethics and Experimentation Committee with human beings (CAAE: 74231123.7.0000.0128, Opinion Number: 6.386.616). It was extended until the month of February, in order to obtain the largest possible number of evaluations.

## INCLUSION AND EXCLUSION CRITERIA

Those over 18 years old, of any gender and nationality who signed up through the Belezas do Agreste Instagram page to receive the kit were included. Those who received the kit and did not use it in the recommended way were excluded.

## RISKS AND PROTECTIVE MEASURES

Risk for the research was defined as any discomfort or dissatisfaction experienced when answering the evaluation form. As this was applied online, the risks were defined according to the virtual environment, electronic media, or remote activities, due to the



limitations of the technologies used, based on Circular Letter No.

2/2021/CONEP/SECNS/MS. The potential risk of violation of each participant's answers is intrinsic to the risks mentioned above for research with any stage in a virtual environment.

In addition to privacy, the preservation, non-violation and integrity of the answers acquired in the forms were guaranteed, in addition to confidentiality, protection and non-stigmatization. Confidentiality was ensured, along with the freedom not to answer any questions that caused any kind of discomfort, or to give up participating in the research if they wished. It was the researcher's responsibility to monitor these volunteers who reported discomfort and direct them to a public service that offers psychological care in their city. In addition to the commitment to compensation in cases of proven damage caused by participation in the research, according to a judicial and extrajudicial decision, the expenses for the reimbursement of transportation and food are the responsibility of the researcher.

In order to avoid these risks, the form was sent individually to each volunteer, via email, in addition to the reinforcement sent by the social network WhatsApp® according to the telephone numbers provided by the participants, ensuring confidentiality and removing potential risks of violation. The public disclosure of the results was ensured along with the absence of conflicts between the researcher and the research participants, and these results were disclosed only in scientific events or publications, without the identification of the participants except for those responsible for the study, and the confidentiality of their participation was guaranteed.

The Belezas do Agreste 3.0 extension project is in line with the values of the University of Pernambuco in relation to the contribution to the sustainable development of the State through teaching, research and extension. Using native and local resources in a sustainable way, this project is a pioneer for the Garanhuns campus and, so far, unique among extension projects, so the evaluation of this project through a virtual form is an opportunity to optimize both the theoretical and practical parts of the project, in addition to contributing to the evolution of knowledge in the area of cosmetology and aesthetics.

## DATA COLLECTION AND ANALYSIS

The responses to the data of this survey were collected through the online form provided by the link: <https://forms.gle/vmkVZNy69hcBtkDK9>, sent individually by email to approximately 60 participants registered on the Instagram® page Belezas do Agreste 3.0. All information presented to volunteers at the ICF followed the instructions of Circular Letter

No. 2/2021/CONEP/SECNS/MS, respecting the guidelines and regulatory standards for research involving human beings, according to resolution 466/2012.

The Informed Consent Form (ICF) was attached to the questionnaire, with the appropriate page of acceptance form to obtain the participant's free and informed consent in place of the physical signature. Participants who did not agree with the ICF or who felt discomfort or dissatisfaction with the research, had every right to refuse or withdraw their consent at any stage of the research.

After the data collection was completed, they were downloaded and stored on an electronic device (pendrive), deleting any information from the virtual platform. These data will be stored for 5 years and after this period they will be permanently deleted, being the responsibility of the researcher.

Participants evaluated the products through 4 closed and 2 open questions, as follows:

- 1) How do you evaluate the dissemination of the activity through the Instagram of the Belezas do Agreste project (for example, frequency and quality/layout of the posts)? Please take into consideration 1- Poor, 2- Fair, 3- Good, 4- Very Good, 5- Excellent.
- 2) How do you evaluate the clarity with which the content was addressed on the Instagram of the Belezas do Agreste project? Please take into consideration 1- Poor, 2- Fair, 3- Good, 4- Very Good, 5- Excellent.
- 3) How do you evaluate the quality of the products in the beauty kit distributed in the Belezas do Agreste extension project? Please take into consideration 1- Poor, 2- Fair, 3- Good, 4- Very Good, 5- Excellent.
- 4) Did you have any favorite products? Please choose from the options: ( ) neutral soap, ( ) exfoliating soap, ( ) moisturizing gel, ( ) none of the products.
- 5) Name 2 points you liked and 2 points that need to be improved about the Instagram of the Belezas do Agreste project:  
\_\_\_\_\_
- 6) Name 2 points you liked and 2 points that need to be improved in the products of the beauty kit distributed in the Belezas do Agreste project.

## RESULTS

The following results are based on the reach of followers of the page of the extension project Belezas do Agreste 3.0; Then, the evaluation of the skin type of the participants who received the project's beauty kit and the answers obtained through the online forms are

presented. This data was transformed into graphs and tables, maintaining the impartiality and integrity of the answers obtained, along with the privacy of the volunteers.

### 3REACH OF THE EXTENSION PROJECT PAGE ON INSTAGRAM®

The account reached 1,670 users, with 119 visits to the profile between August 25 and November 22, 2023. The most viewed content on the page has 1,787 views, 61 likes, 3 comments and 4 shares, being a reel (short video) with images of the production of beauty kits. The account shows a growth of +1,013% in 3 months in user reach (Figure 2).

Figure 2 – Reach of the Belezas do Agreste account in 90 days



Source: The author (2024)

## VOLUNTEERS' SKIN TYPES

It is noteworthy that prior to the distribution of the beauty kits, forms were sent to the participants to assess their skin type (normal, dry, oily or combination) if they did not know it. In favor of a routine with the products in the kit customized to the quality of the skin, instructions for use were also distributed. The results are shown in the following table (Table 1).

Table 1 – Skin types of the volunteers of the Belezas do Agreste 3.0 project

Skin types	Number of volunteers
Normal	6
Drought	1
Oily	22
Mixed	30
Total	59

Source: the author (2024).

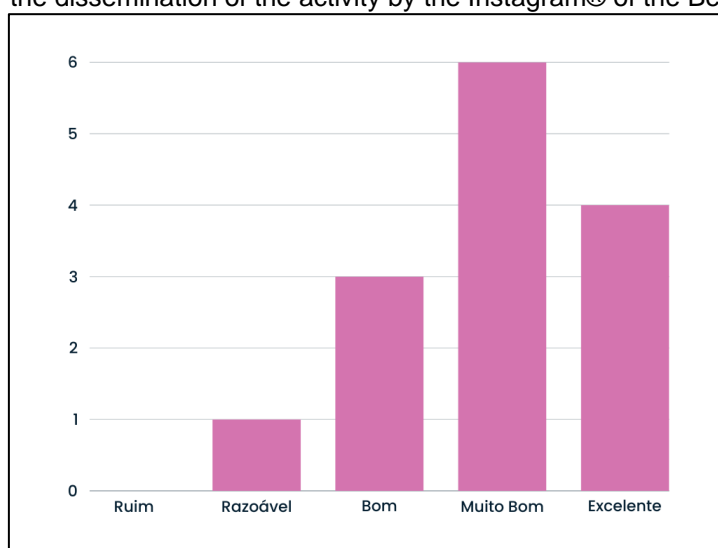
A large discrepancy was observed between the number of volunteers with combination skin and dry skin, and it was hypothesized that the climate (hot and humid) and local genetics promote oily and combination skin types.



## EVALUATION FORM RESPONSES

The answers to the 4 objective questions of the online form are presented in the following figures. Figure 3 reports the evaluation of the dissemination of Belezas do Agreste on its Instagram® account. Characteristics such as frequency and quality/layout were addressed for the posts; In this case, only 7% of the responses classified the posts as reasonable, while good (21%), very good (44%) and excellent (28%) reached the remaining 93% of the responses.

Figure 3 – Evaluation of the dissemination of the activity by the Instagram® of the Belezas do Agreste project.

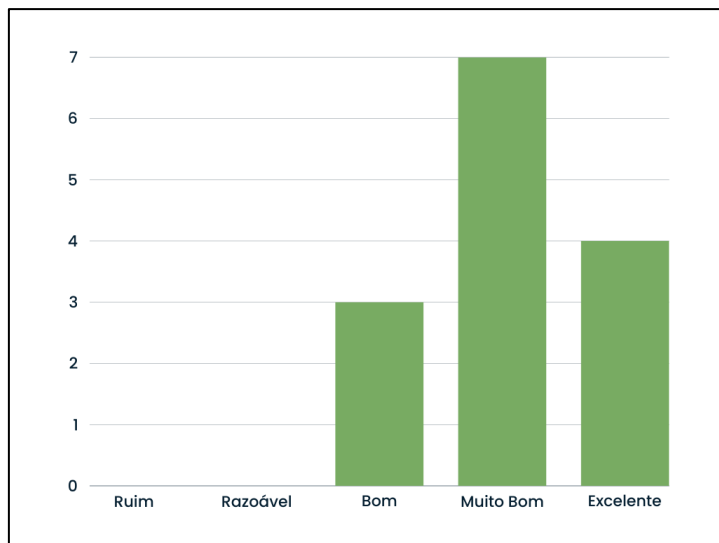


Source: The author (2024)

Figure 4 reports the evaluation of the quality of the content disseminated by Belezas do Agreste on its Instagram® account, and figure 5 addresses the quality of the products in the beauty kit. Good, very good and excellent were the answers provided in relation to the quality of the content published on Instagram® (21%, 50% and 29%, respectively) and also to the quality of the beauty kit products (14, 43% and 43%, respectively).

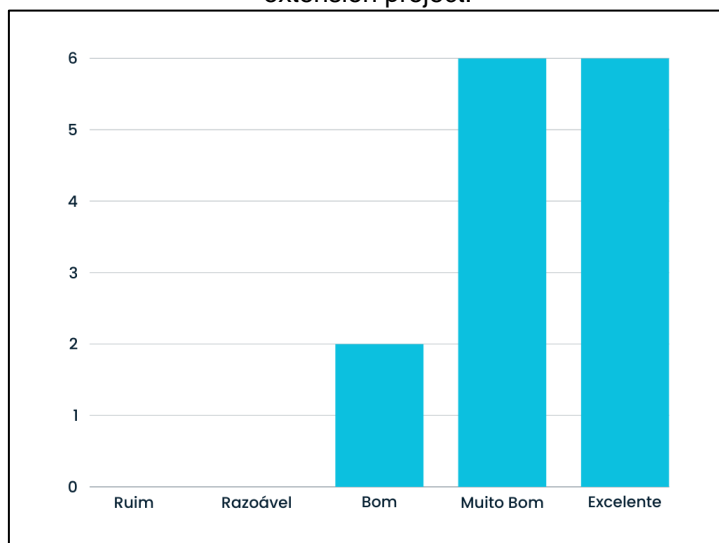


Figure 4 – Evaluation of the clarity with which the contents of Belezas do Agreste were addressed on its Instagram® account



Source: The author (2024)

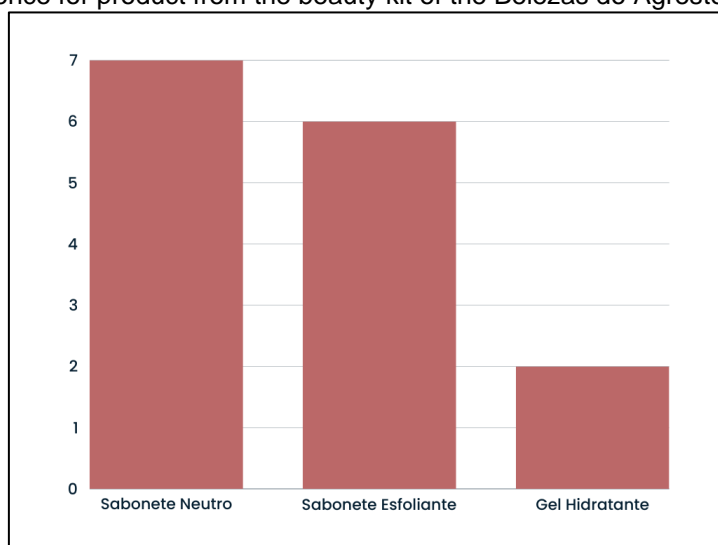
Figure 5 – Evaluation of the quality of the products in the beauty kit distributed in the Belezas do Agreste extension project.



Source: The author (2024)

Finally, figure 6 shows the preference of the project participants in relation to the products in the beauty kit. Neutral soaps and exfoliating soaps were preferred, with 50% and 43% of the responses, while moisturizing gel had only 14% of them.

Figure 6 – Preference for product from the beauty kit of the Belezas do Agreste extension project.



Source: The author (2024)

The following tables report the opinion of the project participants on positive and negative points related to the project's Instagram® account or the products in the beauty kit, as well as suggestions and improvements.

Table 2 – Evaluation of the Belezas do Agreste 3.0 Page on Instagram

Question	Answer
Name 2 points you liked and 2 points that need to be improved about the Instagram of the Belezas do Agreste project	"I liked the organization and quality of the posts. Something that could be improved is the constancy of posts and addressing other areas focused on beauty"
	"Two points that I liked: information/layout and two points that could be improved: more images of the products, explanation of the benefits and frequency of posts"
	"POINTS I LIKED: clarity in the information and the publications are not easy to read. POINTS THAT NEED IMPROVEMENT: standardize the layouts of the publications and the color palette."
	"I like how well things are distributed in Fred and the color palette. The only thing that needs to improve is in terms of publicizing other courses through the representation of each course."
	"Instagram I think publishes little, maybe it would take a few more tutorials on how to use the products, how they can help me, showing the sequence of use."
	"the clarity with which it was disseminated and the tips on Instagram, I don't see any negative points"
	"The posts are informative, however, I felt a lack of more intense explanations about the products. I confess that I followed Instagram little, precisely for this reason I only mention the points previously exposed."
	"I think they could post some feedback from people who have used the products. And I believe that a greater dissemination of instagram itself, I didn't follow ig until now, I only knew I had it because I'm respondendo this"

form."

Source: the author (2024).

Table 3 – Evaluation of the Beauty Kit

Question	Answer
Name 2 points you liked and 2 points that need to be improved in the products of the beauty kit distributed in the Belezas do Agreste project.	"Positive points: the feeling of cleanliness, hydration and refreshment on the skin, the smell is also good. Negative points: I believe that only the size, if it were bigger, would be able to use it for longer and the results bigger. "
	"I liked the smell and the quality. I have nothing to say about what could be improved "
	"The smell of the products, the efficiency of the products. Negative points: Dense products are difficult to collect with the pipette, making it a little difficult to use the product."
	"Two points I liked: visible skin benefits, improved skin oiliness, easy application; Two points that could be improved: packaging; information about the products on the packaging"
	"POINTS I LIKED: Being made with natural and simple products and the smell of the products. POINTS TO BE IMPROVED: the consistency of the gel"
	"Things I liked: The smell of the exfoliating soap is very good and the neutral soap made my skin oil-free. Things I didn't like: The moisturizing gel has a really weird sticky look."
	"I think more products could come, in greater quantity lol. Also, even though I liked the scrub, over time it settled to the bottom of the tube and I couldn't get it off. The moisturizer over time became more liquid. But I have many positives like the smell, the nice coloring, the product really worked "
	"The smell of the soap and the texture of the scrub"
	"He got great hydration. And the reduction gives oiliness"
	"I really liked the softness that the products provided, as well as the reduction of oiliness. However, the moisturizer left a little to be desired, not only for its not so pleasant smell, but also for the burning and redness that the product leaves. "
	"I believe maybe the consistency"
	"The smell is wonderful, and it has advanced the healing of some pimples. I found the texture of the gel to be a little thin."

Source: the author (2024).

## DISCUSSION

Humans have been engaging in practices related to the appearance of their bodies and personal hygiene since prehistory. About 30,000 years ago, people were already

painting and tattooing their bodies as a form of expression. In addition, these practices were carried out with the use of natural resources available at the time, such as tree bark, clay, sap, and other organic materials, suggesting that, even in the absence of industrialized products, human beings sought ways to improve the aesthetics of their bodies and maintain personal hygiene, using what they had available in nature (Cardoso; Maia, 2019).

Until the nineteenth century, most cosmetics were produced at home, in the same way as food. However, during the twentieth century, there was substantial growth in the cosmetics industry, leading to a gradual shift in the manufacture of these products, which resulted in the progressive replacement of natural ingredients and homemade manufacturing methods with industrialized cosmetics that are now widely known and used (Soares, 2023).

Romero et al. (2018) define natural cosmetics as a product that must have at least one ingredient "derived from" a natural substance, extracted directly from a plant, not produced by synthesis. Still, there is no legal definition of the minimum content of ingredient derived from a natural substance to characterize cosmetics as natural.

Tavares (2016) observed that many people are adopting homemade recipes to create various cosmetic products, such as hair masks, skin products, whiteners, deodorants, creams, perfumes, and shampoos. This is due to the financial savings, complete control over the ingredients used, and the ability to customize the recipes to suit your needs. This practice also reduces the amount of discarded packaging and products purchased, contributing to the reduction of environmental impact; however, despite all the benefits, Gerhard et al., (2010) highlight that the use of natural ingredients or traditionally used does not automatically imply their safety. In other words, the lack of evidence of known health risks does not guarantee the absence of risks when these ingredients are used in different conditions.

Considering the importance of incorporating natural products into cosmetics as a result of responding to new market challenges, polysaccharides can be considered a promising biological resource for new products and industrial applications, as there is more documented scientific evidence regarding their benefits for human health and well-being. For example, galactomannan extracted from the seeds of *Retama reatam* has been evaluated for its physicochemical, interfacial, and emulsifying properties, and a stable nanoemulsion based on this polysaccharide has been proposed for different non-food applications, including cosmetics (Chouaibi et al., 2019). Pereira & Almeida (2023), in turn,

formulated a facial serum with a base effect, moisturizing and anti-aging action with aloe vera (*A. vera*) and other components (Acorbosilane C®, Witch Hazel extract, vitamin E, Green Tea extract, Calendula extract and Hyaluronic Acid). The formulation remained stable in all parameters evaluated in the Preliminary Stability Study and, therefore, was also suggested for cosmetic application. However, to the best of my understanding, there are no studies that report the use of galactomannan extracted from *C. grandis* in the formulation of soaps or in conjunction with aloe vera in the formulation of a moisturizing gel. The free distribution of these components in a beauty kit has also not been reported in the literature so far, which demonstrates the innovative strategy with sustainable and accessible appeal of the Belezas do Agreste extension project.

Cosmetics made from natural products, such as *C. grandis* galactomannan and aloe vera, have the important function of moisturizing (or maintaining hydration of) the skin. In turn, hydration can bring other benefits, such as anti-aging aid, combating sagging, and reducing wrinkles and expression lines (Ueno, 2012). The quality of the products that made up the Belezas do Agreste kit could be attested by the answers reported in figures 8, 9, 10, indicating that 86% considered them very good or excellent. In addition, neutral soap was reported as the preferred one by the participants, a fact possibly associated with its cleaning capacity, typical of the liquid base for glycerinated soap, and the excellent hydration caused by the galactomannan of *C. grandis*. Cleansing and moisturizing may have helped maintain skin health and prevented the onset of conditions such as acne.

Skin conditions are usually associated with psychosocial difficulties, where the feeling of inadequacy caused by the condition generates mood disorders and even depression and/or anxiety. In this case, one problem feeds the other, strengthening the isolation, shyness and apathy usually observed in people affected by skin conditions (Ribeiro, 2010). For example, Botelho et al. (2020) reported on an experiment conducted on children with atopic dermatitis, where their psychological conditions and social relationships were studied. The results demonstrated difficulties for patients and their families, identifying emotional, social and functional impairments in children. They also highlighted social discrimination, where skin conditions are related to lack of hygiene and self-care, social conditions and diseases, together with the suffering caused by the treatment of these conditions, such as itching, pain and the sensitivity resulting from medications.

Jesus et al. (2014) portrays the results of another investigation, where recreational, sexual and social activities were quantified – in the interaction with family, friends and co-

workers – and the difficulty (or even the impediment) of people affected by skin conditions in making and maintaining social contacts was recorded.

## **CONCLUSION**

This work highlights the importance of skin care, both for physical and psychological well-being, together with the relevance of the accessibility of skincare products through the free distribution of beauty kits to UPE volunteers and their surroundings and the dissemination of reliable information on a social network. It is understood that both initiatives of the Belezas do Agreste project are harmoniously intertwined, with the provision of safe information along with access to quality products, resulting in an initiative that contributes to awareness of skin care, integrating scientific knowledge, social responsibility and sustainable practices. However, the demand for more dissemination on social networks and in the academic sphere stands out, in addition to the expansion of the project so that more volunteers are welcomed and have the replacement of the products after finishing use, with more time for effects that require prolonged use.

## **ACKNOWLEDGMENTS**

This work was carried out with the support of UPE, an entity of the Government of the State of Pernambuco focused on the promotion of Teaching, Research and University Extension.



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