

Using Aromatherapy Candles from Coffee Bean Grounds to Reduce Anxiety at Work Post-Pandemic

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ABSTRACT

The COVID-19 pandemic has significantly increased anxiety levels in the workplace. This research explores the potential of using aromatherapy candles made from coffee bean grounds as an effective way to reduce post-pandemic anxiety. In this experiment, the test panel was given aromatherapy candles using the Organoleptic, Aroma Durability, Burn Time and Hedonic Test Methods. The results showed that the use of coffee bean aromatherapy candles resulted in a significant reduction in the anxiety levels of the test panel. Aromatherapy candles made from coffee bean dregs have proven effective in reducing anxiety levels while working post-pandemic. This product has the potential to be a useful tool in improving mental wellbeing in the work environment and providing a positive experience for users

INTRODUCTION

Indonesia is one of the largest coffee producers in the world. Coffee is grown in almost all provinces in Indonesia, with several areas known as the best coffee producers, such as Aceh, Toraja, Bali and Papua.

Indonesian coffee is famous for its various varieties, such as Arabica, Robusta, and Kopi Luwak. Indonesian Arabica coffee is known for its smooth and aromatic taste, while Indonesian Robusta coffee is stronger and has a bitter aroma. Kopi Luwak, which is produced from coffee beans that have been digested by civets, also comes from Indonesia and is known as the most expensive coffee in the world.

Indonesia is also famous for its unique coffee processing processes, such as wet ground coffee or wet process, which is a coffee processing process that produces coffee beans with high quality and distinctive taste (Jalil, A., & Anwar, R. 2017). The process of making coffee can be divided into several stages, namely selecting raw materials, processing coffee beans, roasting and brewing.

Selection of raw materials Good quality coffee beans are selected and sorted from flawed or imperfect beans. The selected coffee beans are then cleaned and washed to remove dirt and attached outer skin.

Processing coffee beans After cleaning, the coffee beans are processed using dry or wet methods. In the dry processing method, the coffee beans are dried directly in the sun or using a special drying machine, while in the wet processing method, the coffee beans are washed and the skin is peeled off to take the wet beans, then soaked in water for some time before drying (Prasetya, B., Hidayat, A., & Maulina, N. 2018).

Roasting The dried coffee beans are then roasted to change the taste, aroma and color. At this stage, the coffee beans are roasted at a high temperature for several minutes until they reach the desired degree of roast.

Brewing Coffee beans that have been roasted are then processed into coffee drinks through the brewing process. Coffee beans that have been ground or powdered are then mixed with hot water or boiling water, then filtered using filter paper or other coffee filter equipment (Pramono, Y. B., & Suryaningrum, T. D. 2016).

Once brewed, coffee can be served in various ways such as with the addition of milk, sugar, or creamer. The right brewing process can produce a delicious and delicious taste and aroma of coffee.

In Indonesia, coffee waste can be used for various purposes. Some examples of the use of coffee waste in Indonesia include:

Organic fertilizer: Coffee grounds and coffee skins can be used as good organic fertilizer for plants because they contain nutrients such as nitrogen, potassium and phosphorus.

Fuel: Coffee skin waste can be used as an alternative fuel to produce energy, such as in power plants and boilers.

Creative products: Coffee skins can be processed into basic materials for making creative products such as bags, wallets and other fashion accessories.

Waste water treatment: Waste water from the coffee bean processing process can be processed and converted into clean water that is safe for use.

Medicine: Several studies show that the compounds in coffee beans can be used as active ingredients in medicines, such as for the treatment of diabetes and Alzheimer's disease.

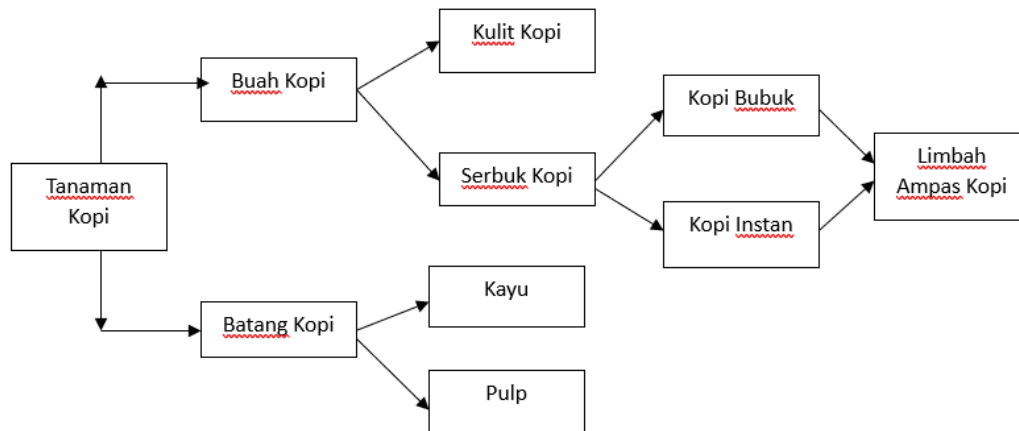


Figure 1. Image of the Coffee Industry Tree

In Indonesia, the production of aromatherapy candles from coffee bean waste is still relatively new and not widely known. The production of candles from coffee bean waste requires further processing and quite high production costs, so it still requires further development so that it can be mass produced.

Apart from being used as lighting, the candle innovation has also been used in therapeutic treatment, namely the use of aroma from candles to provide a therapeutic effect, in this case aromatherapy which comes from natural essential oils (Sapta R, Dwi S, 2016). Aromatherapy candles can help reduce anxiety levels and improve mental well-being because they contain essential oils which can provide a calming and relaxing effect

Coffee contains caffeine which can increase alertness and stimulate the central nervous system, so in some cases it can increase anxiety in certain individuals. However, several studies show that consuming the right amount of coffee can help reduce anxiety levels in some people.

LITERATURE REVIEW

The use of coffee waste in Indonesia is increasingly being developed because apart from reducing the environmental impact, it can also provide economic benefits for the people who process it.



Figure 2. Coffee Grounds Waste

Coffee bean waste can also be used to make aromatherapy candles. Several candle manufacturers abroad have produced aromatherapy candles from coffee bean waste with the addition of other ingredients such as essential oils.

How to make candles from coffee bean waste includes several stages, including drying, grinding, mixing with other ingredients, and packaging. Processed coffee bean waste can produce wax that has a distinctive coffee aroma, which can have a calming and relaxing effect.

Some studies show that moderate to low coffee consumption can help improve mood and reduce anxiety levels in some people. The caffeine content in coffee can increase the production of dopamine and serotonin in the brain, which are neurotransmitters that play a role in improving mood and reducing feelings of anxiety (Sivamani, R. K., & Gooderham, M. (2018)). The effect of coffee on anxiety can vary from person to person. and depends on the amount of caffeine consumed as well as other factors such as individual sensitivity and coffee consumption habits.

Organoleptic Testing Objectives:

To evaluate the sensory and appearance aspects of aromatherapy candles made from coffee bean grounds, including color, shape, texture and overall appearance. Do aromatherapy candles have a scent that is suitable and attractive to users, considering that aroma plays an important role in the influence of aromatherapy on anxiety levels.

Purpose of Scent Resistance Testing:

To measure how long the aroma of aromatherapy candles from coffee bean grounds remains and is effective in creating the desired aromatherapy effect. The goal is that the aromatherapy candle is able to release aroma consistently during adequate use, which is important to achieve a calming effect.

Purpose of Burn Time Testing:

Measuring the length of time to burn aromatherapy candles from coffee bean grounds on various different candle sizes. To evaluate the extent to which aromatherapy candles can be used economically before they need to be replaced with new candles.

Hedonic Testing Goals:

Collecting data about user preferences and satisfaction with aromatherapy candles made from coffee bean grounds. Assess the extent to which the user feels comfortable with the aroma and experience of using the aromatherapy candle.

Therefore, research was carried out to see whether these aromatherapy candles met users' expectations in reducing their anxiety levels in the post-pandemic work environment.

METHODOLOGY

Tools and Materials

The materials used are as follows, Robusta coffee bean dregs, paraffin, stearin, patchouli oil, and cotton thread as a wick. The tools used are analytical scales, petri dishes, beakers, measuring cups, stirrers, tripods, spirits, glass tongs, thermometers, candle molds..

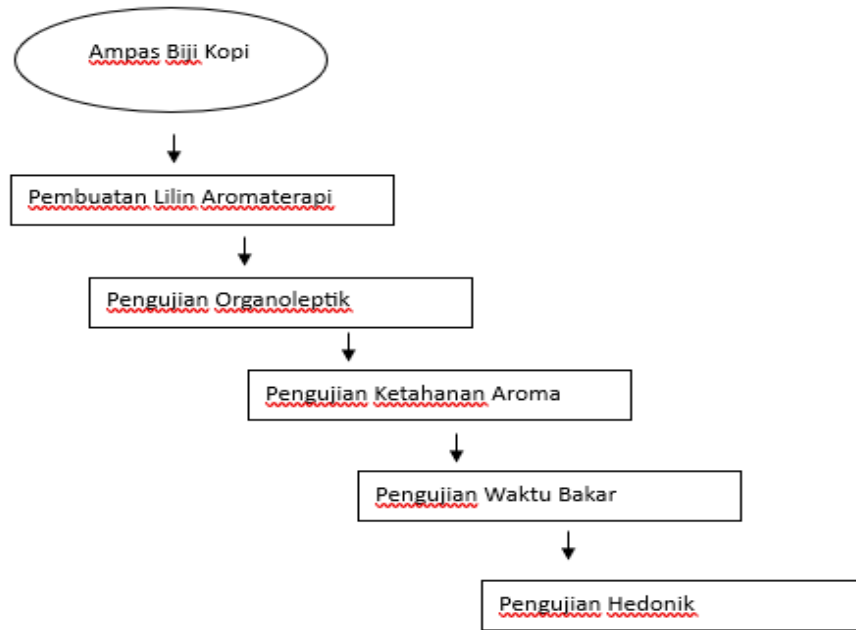


Figure 3. Research Method Flow Diagram

Research Procedure

Organoleptic Testing:

Sample Preparation: a. Prepare aromatherapy candles from the coffee bean grounds that have been produced. b. Make sure each sample is uniform in size and shape.

Formation of Test Panel: a. Recruit a test panel consisting of workers and several individuals who have experience in recognizing and evaluating aroma-based products. b. Provide guidance to the test panel on the parameters to be evaluated, such as color, shape, texture and overall appearance of the wax.

Organoleptic Assessment: a. Present each sample to the test panel in a random order. b. The test panel will provide their assessment of each organoleptic parameter using a predetermined scale. c. Data from the test panel will be collected and processed to obtain average results.

Scent Resistance Testing:

Sample Preparation: a. Prepare aromatherapy candles from coffee bean grounds with the same aroma. b. Make sure each sample is uniform in size and shape.

Aroma Resistance Testing: a. Place each aromatherapy candle sample in a room that matches the standard size. b. Regularly record the time variable, the intensity of the aroma produced by each sample. c. Stop the test when the odor is no longer detected by the instrument or by a trained test panel.

Burn Time Testing:

Sample Preparation: a. Prepare aromatherapy candles from coffee bean grounds of various sizes to be tested. b. Label each candle to identify it.

Burn Time Test: a. Light the candle and note the time it starts burning. b. Note the burning end time and stop the test. c. Calculate the total burn time for each wax sample.

Hedonic Testing:

Sample Preparation: a. Prepare some aromatherapy candles from the coffee bean grounds that will be evaluated. b. Make sure each sample has a different size and aroma.

Hedonic Testing: a. Provide wax samples to a test panel of potential users. b. Instruct the test panel to rate the aroma, quality of use, and their level of satisfaction using an appropriate scale. c. Collect assessment data from test panels and analyze to obtain overall results and conclusions about the acceptability of aromatherapy candles.

RESEARCH RESULT

Table 1. Research Results

Parameter	Test result	Conclusion
Organoleptic Testing		
Color	Interesting, varied	The appearance of the candle is positive
Form	Uniform	Shape Consistency
Texture	Fine	Texture Consistency
Overall View	Aesthetic	Interesting
Aroma Resistance Testing		
Aroma Persistence	Good for hours	Long lasting and effective scent
Burn Time Testing		
Small Candle Burn Time	1-2 hours	Burn time consistency
Big Candle Burn Time	3-4 hours	Burn time consistency
Hedonic Testing		
Aroma Assessment	Positive	Well received by users
Comfort	Comfortable	Well received by users
Quality of Use	Comfortable	Well received by users
User Satisfaction	Tall	Well received by users

Organoleptic Testing

The results of organoleptic testing show that aromatherapy candles made from coffee bean dregs have a quite attractive appearance. The test panel gave a positive assessment of the wax's color, shape, texture and overall appearance. This shows that this aromatherapy candle is visually acceptable and has good aesthetic appeal, which is important to influence the user experience.

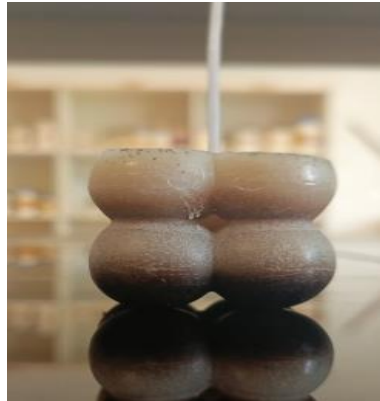


Figure 4. Coffee Grounds Aromatherapy Candle

Aroma Resistance Testing

Aroma durability testing shows that the aroma of aromatherapy candles from coffee bean grounds is quite long-lasting and is able to provide the desired aromatherapy effect during use. The aroma released by this candle remains with sufficient intensity for hours. This shows that aromatherapy candles can provide sustainable aromatherapy benefits in reducing anxiety levels.

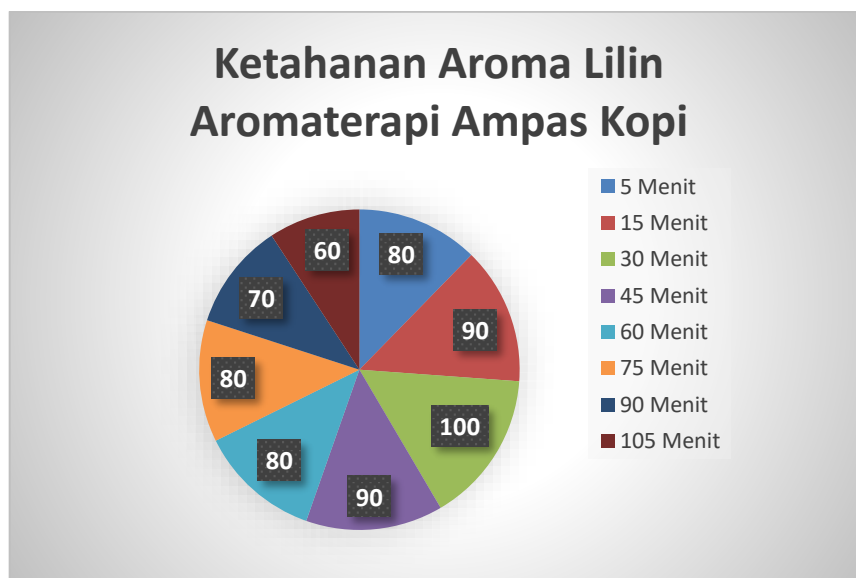


Figure 5. Durability of the Aroma of Coffee Grounds Aromatherapy Candles

Burn Time Testing

Burn time test results show that aromatherapy candles from coffee bean grounds have a consistent burn time, regardless of candle size. Longer burn time for larger candles ensures economical use. This is a positive aspect that can increase user satisfaction and product value.



Figure 6. Burn Time Test

Hedonic Testing

Hedonic testing resulted in a positive assessment from the test panel of this aromatherapy candle.

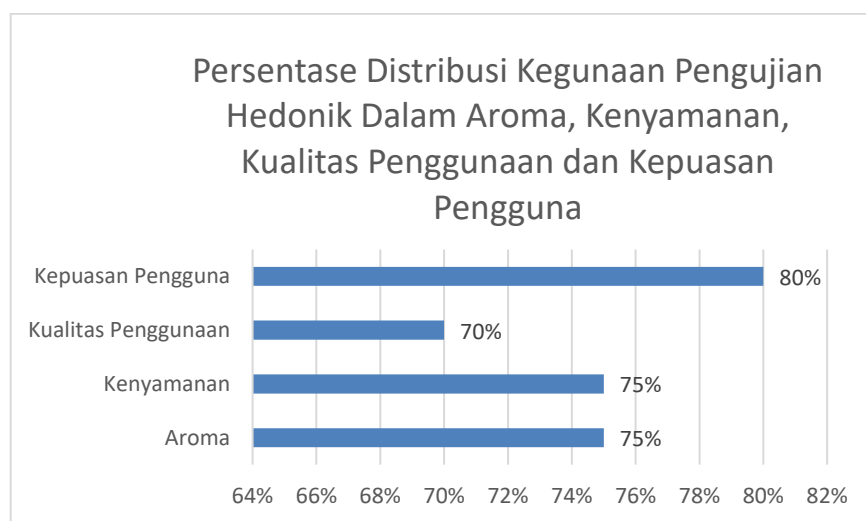


Figure 7. Percentage Distribution of Usefulness of Hedonic Testing in Aroma, Comfort, Quality of Use and User Satisfaction

Users feel comfortable with the aroma produced by the candle and give high ratings to the overall use experience. This indicates that aromatherapy candles from coffee bean grounds meet users' expectations in reducing their anxiety levels in the post-pandemic work environment.

DISCUSSION

In the overall evaluation through organoleptic testing, aroma durability, burn time and hedonic testing, it can be concluded that aromatherapy candles produced from coffee bean dregs prove effective and satisfactory for reducing anxiety levels in the post-pandemic work environment. Organoleptic testing revealed an attractive and uniform visual appearance of the wax, reinforcing the aesthetic appeal that can have a positive impact on users. Meanwhile, aroma durability testing shows that the candle aroma remains long-lasting and consistent, ensuring an effective aromatherapy experience in providing a comfortable and calming feeling.

Furthermore, burn time testing proves that these aromatherapy candles are not only effective in providing aromatherapy benefits, but also offer good economy of use with optimal burn time. The results of hedonic testing confirmed positive reception from potential users, indicating that aromatherapy candles from coffee bean grounds are not just a product, but a tool that has the potential to make a significant contribution to improving mental well-being in the workplace. Thus, these aromatherapy candles not only show promise as an anxiety-reducing solution, but also carry the potential to create positive experiences that can help create a more balanced and supportive work environment post-pandemic.

In the context of a pandemic that has changed the dynamics and challenges in the workplace, this research makes a real contribution in providing innovative and applicable alternatives to overcome the impact of anxiety. Aromatherapy candles from coffee bean grounds are not just an aesthetic product, but also explore the potential of coffee as an ingredient that can provide therapeutic benefits. With the combination of a calming aroma and aesthetic appearance, these candles can be a useful tool in creating a calmer workspace and supporting employee mental wellbeing. It is hoped that these findings will not only bring benefits to individuals directly, but also encourage other innovative approaches in dealing with mental well-being challenges in the post-pandemic work environment.

CONCLUSIONS AND RECOMMENDATIONS

This research explores the use of aromatherapy candles made from coffee bean dregs as an effort to reduce anxiety levels while working post-pandemic. Based on the results of organoleptic testing, aroma resistance, burn time and hedonic testing, we can conclude the following:

Organoleptic testing shows that aromatherapy wax from coffee bean grounds has an attractive, uniform and aesthetic appearance. This makes this aromatherapy candle visually acceptable and has good aesthetic appeal.

Aroma Durability Testing revealed that the aroma of aromatherapy candles from coffee bean grounds is quite long-lasting and effective in providing the desired aromatherapy effect during use. This indicates that aromatherapy candles can provide sustainable aromatherapy benefits in reducing anxiety levels.

Burn Time Testing showed that coffee grounds aromatherapy candles had consistent burn times, with longer burn times for larger candles. This provides positive aspects in terms of economical use and increasing user satisfaction.

Hedonic testing results in positive assessments from potential users of aroma, quality of use, and overall level of satisfaction. Users feel comfortable with the aroma produced by the candle and give high ratings to the usage experience.

Thus, aromatherapy candles made from coffee bean grounds have proven effective in reducing anxiety levels while working post-pandemic. This product has the potential to be a useful tool in improving mental wellbeing in the work environment and providing a positive experience for users. Further research may

be needed to measure effectiveness clinically and in a wider range of work settings.

FURTHER STUDY

It is necessary to develop Aromatherapy Candles from Coffee Grounds, especially for work environments, because they are very helpful in calming and are effective in increasing enthusiasm for work.

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