



**HOLY CROSS COLLEGE OF CALINAN, INC**  
**DAVAO – BUKIDNON HIGHWAY, CALINAN POBLACION, DAVAO CITY**

**THE FEASIBILITY OF POT MARIGOLD (*CALENDULA OFFICINALIS*)  
AS STRESS RELIEF OINTMENT**

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THE FEASIBILITY OF POT MARIGOLD (*CALENDULA OFFICINALIS*)  
AS STRESS RELIEF OINTMENT

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A Science Investigatory Project

Presented to the Faculty of the Basic Education Department  
of the Holy Cross College of Calinan Inc.

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All the Glory and Honors belong to Him.

**The Researchers**



## ABSTRACT

Pot Marigold (*Calendula officinalis*), the plant is reported to present several biological activities namely analgesic, noninflammatory, antibacterial, and antioxidants. Moreover, Pot Marigold is feasible to be an ingredient for a stress relief ointment thus stress is a normal reaction to everyday pressure. This study evaluates the feasibility of Pot Marigold (*Calendula officinalis*) as a stress relief ointment and its healing properties. This research evaluates the sustainable approach ingredient of Pot Marigold, to its effectiveness as a stress relief ointment. Pot Marigold (*Calendula officinalis*) oil were extracted through a heat infusion method using olive oil. After infusing the oil, it was combined with a beeswax to solidify the oil for ointment. Finally, after making the ointment the researchers will collect the data through a survey. The results of the survey show that the Pot Marigold ointment is somewhat effective based on the weighted mean of 3.133333333 in the level of satisfaction of respondents using the Pot Marigold ointment. and 3.016666667 in comparison to product X. According to the findings, the approach was deemed somewhat effective based on the responses gathered from others. Therefore, the Pot Marigold ointment needs improvement and further experimentation.

**Keywords:** *Calendula officinalis*, stress, effectiveness, survey, improvement



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## INTRODUCTION

### Background of the Study

Pot Marigolds (*Calendula officinalis*) are annual or perennial plants with waxy, smooth, or glandular stems. The leaves of some species are sessile (lacking a leaf stalk) and may have clasping leaf bases. The fruit is a curved achene (Petruzzello, 2023). In Turkey, they are used as an infusion, mash, lotion, maceration, or oil to treat wounds, burns, skin cancer, and skincare. It is often used topically and is applied to the skin (Khouchlaa et al., 2023).

Pot Marigold (*Calendula officinalis*), the plant is reported to present several biological activities namely analgesic, noninflammatory, antibacterial, and antioxidants. *Calendula officinalis* has been an important plant in traditional medicine and pharmaceutical industry based on its properties. It is considered therapeutically potential with proper dose and other pharmacological indications (Shahane et al. A, 2023).

On the other hand, stress is a normal reaction to everyday pressures, but it can become unhealthy when it affects day-to-day functioning. Stress involves changes affecting the body system, influencing how people feel and behave" (American Psychological Association, 2021). Specially, this study evaluates the feasibility of Pot Marigold (*Calendula officinalis*) as a stress relief ointment and its healing properties. In this case, this study assesses the sustainable approach ingredient of Pot Marigold, to its effectiveness as a stress relief ointment.

Thus, the researchers devised an idea to produce a stress relief ointment using Pot Marigold which determine to heal, and soothe the skin.





## Statement of the Problem

This investigation aims to measure the effectiveness of Pot Marigold (*Calendula officinalis*) as a stress relief ointment; specifically, it seeks to answer the following questions.

1. What is the level of satisfaction of the respondents whose using the Pot Marigold (*Calendula officinalis*) as stress relief ointment?
2. How well Pot Marigold (*Calendula officinalis*) qualifies as a stress relief ointment in comparison to product x in terms of:

1.1 Production

1.2 Reliability

1.3 Effectiveness

## Hypothesis

Pot Marigold (*Calendula officinalis*) will be used as a raw material for stress relief ointment.



METHODS AND MATERIALS

This study is composed of three phases: Phase I – Materials and Ingredients Used Phase II– Flower Extraction and Pot Marigold Experimentation, and Phase III- Data Collection and Analysis. All of the experimental procedures will be conducted in the TLE Laboratory of Holy Cross College of Calinan Inc.

Phase 1: Materials and Ingredients Used

The Pot Marigold (*Calendula officinalis*) will be collected on the market and neighborhood of Calinan. Along with this, the researchers will set up a pot, jars, and towel, covering the pot's bottom with the towel. The beeswax will be bought online through the online shopping platform, Shopee that costs about Php. 250.00. The researchers will also use olive oil to infuse it with the Pot Marigold flowers.



!5 g. olive oil



Pot Marigold flowers



20g Beeswax



**Phase 2: Flower Extraction and Pot Marigold Experimentation**

The Pot Marigold oil extraction method that will be used is the oil infusion method. To coat the petals (about 1: 5 ratio), 1/2 cups petals and 15 g oil, the researchers will use olive oil. After setting the jar on the towel, cover half of it with the warm water in the pot. Use the lowest setting on the heat for one to three hours. After the oil has cooled, pour it into a container made of clean glass. Keep it somewhere cold and dark. After making the Pot Marigold oil, the researchers will use 20g beeswax that will set the oil. Gently heating the oil and the beeswax together and after heating, pour it into a container leave to set. The researchers will conduct a test on the Pot Marigold ointment which evaluates the effectiveness of the ointment. This will be done by a survey, to scale the effectiveness of the ointment. The researchers will also evaluate the Pot Marigold ointment with product X in terms of consistency, scent, physical appearance and shelf life,

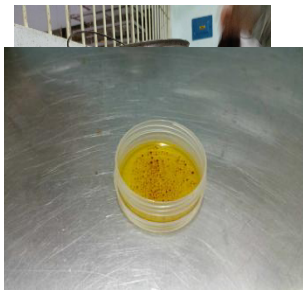


Step 1: Measuring ½ cup flower      Step 2: Putting the flower and olive oil in a jar



Step 3: Boiling the mixture for 2 hours in a pot      Step 4: Straining the oil





Step 5: Cooling down the oil  
Combining



Step 6:  
the oil and beeswax



Step 7: Heating the beeswax until it dissolves  
Step 8:  
Transferring the ointment to  
the container



Step 9: Cooling down the ointment



**Phase 3: Data Collection and Analysis**

The researchers will analyze the difference between the physical appearance, scent, consistency, and shelf life of the ointment and product X using a table. Along with that, the table below to shows the level of effectiveness of Pot Marigold as stress relief ointment conducted by a survey. The survey will have 10 respondents to answer its effectiveness.

Range	Description	Interpretation
4.50 – 5.00	Very Effective	The ointment is clearly effective to relieve stress.
3.50 – 4.49	Effective	The ointment can reduce stress.
2.50 – 3.49	Somewhat effective	The ointment is somewhat effective to relieve stress.



1.50 – 2.49	Needs Development	The ointment needs development to be effective to relieve stress.
1.00 – 1.49	Ineffective	The ointment is not effective to relieve stress.

Table 1: The Scaling Used in the levels of effectiveness of Pot Marigold as stress relief ointment conducted by a survey.

### RESULTS

After conducting the survey, the researchers collected all the data of the survey based on the scaling used to analyze its effectiveness.

Table 2: Results of the survey questionnaire on the level of satisfaction of respondents using the oil.

Question No.	Pot Marigold Ointment	Product X
1	3.6	2.6
2	3	3.5
3	2.9	3.2
4	3.1	3.1



5	3.4	3.3
6	2.8	2.4
Total	3.133333333	3.016666667

Table 2 shows the results of the survey questionnaires. The table indicates the results of the level of satisfaction of respondents using of Pot Marigold ointment and its comparison to Product X. Based on the scaling used in the table 1 this results to the interpretation that Pot Marigold ointment is the ointment is somewhat effective to relieve stress. This show that the total mean of the survey resulted to 3.133333333 in effectiveness of Pot Marigold ointment and 3.016666667 in comparison to Product X.

Table 3: How well Pot Marigold qualifies as a stress relief ointment in comparison to product x in terms of production.

Question	Qualification (sum of the results)	Mean
1.	26	2.6



Results show that it qualifies as a stress relief ointment in terms of production with a total of 26 and an average of 2.6 in the mean.

Table 4: How well Pot Marigold qualifies as a stress relief ointment in comparison to product x in terms of reliability.

Question	Reliability	Mean
2.	35	3.5
3.	32	3.2
5.	33	3.3
Total	100	3.333333333

Results show that Pot Marigold qualifies as a stress relief ointment in terms of reliability with a total of 100 and an average of 3.333333333 in the mean.

Table 5: How well Pot Marigold qualifies as a stress relief ointment in comparison to product x in terms of effectiveness.

Question	Effectiveness (sum of results)	Mean
4.	31	3.1
6.	24	2.4
Total	55	2.75





Results show that Pot Marigold qualifies as a stress relief ointment in terms of effectiveness with a total of 55 with an average of 2.75 in the mean.

Table 6:

DISCUSSIONS

In the researchers' study, the use of *Calendula officinalis* as a stress relief ointment is applicable for people experiencing mild stress or headaches. This, despite receiving neutral to good ratings from volunteers shows that the product is not ineffective and can still serve as an alternative as well as a usable ointment for potential consumers. According to Ridd et al. (2022) states that the type of ointment used affects the stress relief levels towards an individual

Biological responses to recognized threat and chemicals as well as hormones rising throughout a body are associated with the higher risk of increasing stress levels (The Healthline Editorial Team, 2020). With this, the *Calendula* ointment made by the researchers, is used to alleviate and treat the increase in the levels of stress. Recently, a study showed that *Calendula officinalis* used as a product, contains therapeutic properties functioning and flowing with antimicrobial, antioxidant, and antiseptic medicine, all of which are properties that are needed for stress and many more diverse complications in terms of application in the skin stated by Shahane et al.(B,2023).

## CONCLUSION

This study shows that Pot Marigold (*Calendula officinalis*) needs more improvement as a stress relief ointment. Based on the result on the survey, Pot Marigold is not effective in accelerating the stress level of the people. However, Pot Marigold has an anti-inflammatory property but it is not effective in reducing stress. These findings provide useful guidance for future researchers. These studies should investigate various formulations, concentrations, and usage duration of the ointment. With all the results gathered, the hypothesis is not accepted. Pot Marigold as a raw material as a stress relief ointment is somewhat effective.



## RECOMMENDATIONS

After concluding the results, the researchers would like to recommend future researchers the following: The researchers would like to recommend to use other methods in preparing the Calendula oil to ensure its right extraction; dry extraction, alcohol infusion, and maceration. The researchers also recommend to use Pot Marigold as a raw material for perfumes. The Pot Marigold ointment could also be experimented as a healing balm.



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Stress%20is%20a%20biological%20response, much%20can  
%20harm%20your%20health

APPENDICES

Appendix 1: Parent’s Consent

INFORMED PARENTAL CONSENT FORM

The feasibility of Pot Marigold (*Calendula officinalis*) as a stress relief ointment

Dear Mr/Mrs \_\_\_\_\_,

**Introduction:** The purpose of this form is to provide you (as the parent of a prospective research study participant) information that may affect your decision as to whether or not to let your child participate in this Science Investigatory Project. Read the information below and ask any questions you might have before deciding whether or not to give your permission for your child to take part. If you decide to let your child be involved in this study, this form will be used to record your permission.

**Description:** This study will examine the effectiveness of Pot Marigold (*Calendula officinalis*) and comparing them which is effective between our product and the product x. Your child’s identity will not be revealed to anyone, the principal investigator(s) and her designated research associates.

**Confidentiality:** Children’s answers will not be associated with their name. The record of your child’s participation will be destroyed after it has been transcribed.

**Risks & Benefits:** There are no risks to your child’s safety. The questionnaire raises



no sensitive or controversial issues and does not contain elements typically frightening to children. Because your children will be answering the survey and compare their preferences between our product and product x.

**Grievance Procedure:** If I have any concerns or am dissatisfied with any aspect of this study, I may report my grievances anonymously to the Research and Publication Office through the following numbers: 09260482063

For questions, please feel free to ask the researchers any questions before signing the consent form or at any time during or after the study.

**Lead Researcher:** Aimee Marie Mejos Contact Details: 09260482063

**Informed Consent Statement**

I, \_\_\_\_\_, give permission for my child, \_\_\_\_\_ to participate in the research project entitled, **“The feasibility of Pot Marigold (*Calendula officinalis*) as stress relief ointment.”** The study has been explained to me and my questions answered to my satisfaction. I understand that my child’s right to withdraw from participating or refuse to participate will be respected and that his/her responses and identity will be kept confidential. I give this consent voluntarily.

Parent/Guardian Name and Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Lead Researcher’s Name and Signature: Aimee Marie Mejos Date: \_\_\_\_\_



## Appendix 2 : Survey Questionnaire

Dear Respondents,

You are being invited to be one of the respondents to participate in this study to evaluate the effectiveness of Pot Marigold as stress relief ointment that aims to produce an all-natural stress relief ointment.

Name (optional) \_\_\_\_\_ Age: \_\_\_\_\_

Sex: ☐ Female ☐ Male

**Directions:** For each question on this survey, please check (/) the number of your chosen answer honestly.

Scale: 5.00 – Very Effective

4.00 – Effective

3.00 – Somewhat Effective

2.00 – Needs Development

1.00 – Ineffective

Part 1: The effectiveness of the Pot Marigold (*Calendula officinalis*) as a stress relief ointment



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	QUESTIONNAIRES	5.00	4.00	3.00	2.00	1.00
1.	I felt comfortable using this product					
2.	I'm able to reduce stress.					
3.	I imagine to use this often.					
4.	I believe Pot Marigold ointment reduced my stress level.					
5.	I don't experience any adverse reactions or side effects from using Pot Marigold ointment.					
6.	I notice any changes in my stress levels over the study period while using .					

Part 2: Product x and Pot Marigold (*Calendula officinalis*) as a stress relief ointment

	QUESTIONNAIRES	5.00	4.00	3.00	2.00	1.00
1.	The pot marigold produces the same results as product x.					
2.	Both are reliable and eligible in terms of stress relief.					
3.	The Pot marigold is a product an individual would recommend to fellow consumers.					
4.	The effectiveness of Pot marigold is a commodity one would purchase if put on the market.					
5.	The pot marigold is a product i would recommend to my stressed peers.					
6.	The pot marigold is more effective than product X					





Appendix 3 : Raw Data

Participants Name (Optional)	Gender	Age	P1	P2	P3	P4	P5	P6
1	M	15	4	3	4	3	5	3
2	F	15	4	3	3	2	2	3
3	M	15	3	4	3	4	2	3
4	F	16	3	3	3	4	4	3
5	F	15	4	3	3	4	3	3
6	F	15	3	2	2	2	3	2
7	F	15	4	3	2	3	5	3
8	F	15	4	3	3	2	2	3
9	F	17	4	3	4	4	5	3
10	F	15	3	3	2	3	3	2

Participants Name (Optional)	Gender	Age	C1	C2	C3	C4	C5	C6
			3	4	5	4	4	3
1	M	15	3	4	3	2	3	3
2	F	15	3	3	2	4	3	1
3	M	15	3	4	4	4	3	3
4	F	16	4	5	5	4	5	3
5	F	15	2	2	2	2	2	1
6	F	15	2	3	3	3	3	2
7	F	15	3	4	3	2	3	3
8	F	15	1	3	3	4	4	3
9	F	17	2	3	2	2	3	2
10	F	15	2	3	2	2	3	2

