

Soap-Making Process Improvement by Using Ingredient X in the Formulation and Laboratory validation of his use

Kathia Rivera Del Cueto
Jose A. Morales, Project Advisor
Polytechnic University of Puerto Rico



Abstract

Soaps are one of the major elements which we use in our everyday life and is produced by the saponification of a triglyceride (fat or oil).¹ The ingredient X oil, a non-psychoactive compound that has long been used for its therapeutic benefits, which include soothing skin, treating joint injuries and easing chronic pain, and for those properties the ingredient X is used in the formulation of this soap to validate that can be a useful ingredient.² The analysis chart of the tests made to the soap made with a mixture of a few oils, sodium hydroxide, water and Ingredient X demonstrate a few components presents in the soap. A chromatograph evaluated by HPLC showed presence of Ingredient X in it. The validation that the soap contains Ingredient X in it certifies that soaps can be made with Ingredient X and that can be beneficial for the health of the skin.

Introduction

It is important to know what content is in a soap that we are using because not all skin types are the same and because of that there are some ingredients that can cause allergies and other types of reactions in the skin. The objectives of this research is knowing what a natural soap have in his formula and validate that the Ingredient X oil that is an ingredient new and innovative that has a lot of benefits for the skin health is present as an ingredient of the soap.

Background

Ingredient X oil, a non-psychoactive compound that has long been used for its therapeutic benefits, which include soothing skin, treating joint injuries and easing chronic pain. Studies have confirmed what has been thought and realized by traditional cultures for thousands of years.²

Problem

In our daily basis we use soaps so it's important to know the ingredients that are in it. Several persons suffer of allergies and some of them are to chemicals or ingredients. Natural soaps are made with natural ingredients but can cause allergy to specified persons. When buying a natural soap usually we don't know the content of it and for that the laboratory evaluation provided the specific content of ingredients in it.

Methodology

The general soap production method is divided into the following major steps.

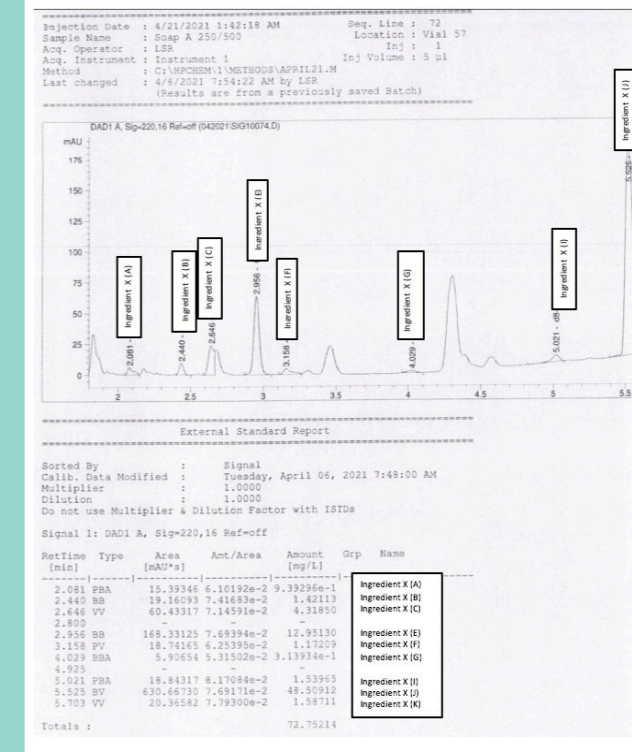
1. The oils used for the soap have to be weighted depending on the percent of each oil in the mixture and the quantity of water and sodium hydroxide as well.
2. When weighing the oils and ingredients for the soap you start mixing the oil/fat including the Ingredient X. Some of them need to melt in order to be used because they have to be in his liquid state.
3. In a separate bowl the water and the sodium hydroxide are mixed because of the exothermic reaction the water and the sodium hydroxide make. And when the temperature drops can be added to the mixed oils.
4. Using an immersion blender, the oils and the mix of the water and sodium hydroxide are blended for a few minutes making sure all ingredients are dissolved in the mixture. Until the mixture achieves a thick consistence.
5. If adding colorants and perfumes they can be added when all of the oils are blended.
6. When having all ingredients mixed the solution can be putted in the mold to be used for the shape of the soap.
7. After putting the soap mixture in the molds, they need to be for at least 1 day there in order to dry and having the soap ready to use.³

Results and Discussions

Parameter	Units	Result	Method	Method Detection Limit	Analysis Date	Analysis Time	Analyst
Aerobic Plate Count	CFU/10g	<1	AOAC 990.12	---	April 21, 2021	1540	JV
Ammonia	mg/kg	1.148	SM 4500 NH3-C	80	April 23, 2021	1530	JS
Cadmium	mg/kg	ND	EPA 200.7	0.17	May 4, 2021	1139	CV
Calcium	mg/kg	27.6	SM 3111B	440	May 4, 2021	1514	CR
Chloride	mg/kg	335	EPA 300.0	160	April 24, 2021	0218	FO
Copper	mg/kg	2.95	EPA 200.7	0.23	May 4, 2021	1139	CV
Iron	mg/kg	4.22	EPA 200.7	0.27	May 4, 2021	1139	CV
Lead	mg/kg	ND	EPA 200.7	0.24	May 4, 2021	1139	CV
Magnesium	mg/kg	5.53	SM 3111B	0.50	May 4, 2021	1355	CR
Mold	CFU/10g	<1	AOAC 997.02	---	April 21, 2021	1540	JV
Nitrate Plus Nitrite	mg/kg	<12.3	Calculated	12	May 6, 2021	1330	FO
pH	S.U.	10.53	AOAC 981.12	---	April 21, 2021	1540	JV

Parameter	Units	Result	Method	Method Detection Limit	Analysis Date	Analysis Time	Analyst
Potassium	mg/kg	9.17	SM 3111B	0.47	May 4, 2021	1038	CR
Selenium	mg/kg	<0.40	EPA 200.7	0.40	May 4, 2021	1139	CV
Silica (as SiO2)	mg/kg	32.3	EPA 200.7	26	April 28, 2021	1305	CV
Silver	mg/kg	ND	EPA 200.7	0.100	May 4, 2021	1139	CV
Sodium	mg/kg	47.452	SM 3111B	2000	May 4, 2021	1205	CR
Sulfate	mg/kg	804	EPA 300.0	130	April 24, 2021	0218	FO
Surfactants As MBAS	mg/kg	136	SM 5540C	15	April 23, 2021	0817	AR
Total Phosphorous	mg/kg	5.23	EPA 200.7	1.3	May 3, 2021	1405	CV
Yeast	CFU/10g	<1	AOAC 997.02	---	April 21, 2021	1540	JV
Zinc	mg/kg	1.38	EPA 200.7	0.37	May 4, 2021	1139	CV

Results and Discussions



The chromatographs were obtained using HPLC and they identify the Ingredient X presence in the soap. They identified a series of peaks, each one representing a derivative compound of Ingredient X passing through the detector

Conclusions

The validation that the soap contains Ingredient X in it certifies that soaps can be made with Ingredient X and that can be beneficial for the health of the skin.

Future Work

The Ingredient X is an innovative oil that is very beneficial for the skin but there are few studies about it. There could be more products that can be made with this Ingredient X with the proper studies and evaluation and can be very helpful for some conditions in the skin.

Acknowledgements

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References

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