



UNIVERSITI  
TEKNOLOGI  
MARA

Pusat  
Asasi



# CREATIONS de UiTM

MEGA INNOVATION CARNIVAL 2020  
*For Knowledge and Humanity*

---

## PROCEEDING BOOK

6 - 8 MARCH 2020

CENTRE OF FOUNDATION STUDIES  
UNIVERSITI TEKNOLOGI MARA  
CAWANGAN SELANGOR KAMPUS DENGKIL



STRATEGIC PARTNER



SPONSOR



PETRONAS

## Istihalah: White Wine Catalyst

Anis Fatihah Azreen Syazril<sup>1</sup>, Tengku Maisarah Tenku Ahmad Nizam<sup>1</sup>, Rahayu Ahmad<sup>1</sup>, Ahmad Hakimi Shaffie<sup>1</sup>, Wan Asma Auzani Wan Md Din<sup>2</sup>

<sup>1</sup>MARA Junior Science College (MJSC) Kuala Klawang, Negeri Sembilan, Malaysia

<sup>2</sup>Halal Action Laboratory, Kolej GENIUS Insan, Universiti Sains Islam Malaysia (USIM), Malaysia

\*E-mail: auzani.din@mara.gov.my

### ABSTRACT

This research touches on the field of istihalah. In this era of globalization, all kinds of situations could happen when we are out of the country. As Muslims, situations of halal and haram would be of high concern. For example, one is out of the country and requires vinegar or a drink but is then only presented with an alcoholic drink (wine). Istihalah is the process of conversion from something haram to halal. With the istihalah method, our product would be the solution, which changes the wine to vinegar and a consumable drink. One of our main objectives is to widen this field with the help of science and technology, furthermore, encourage innovation among the young generation like us. Since there have not been any previous findings regarding this topic, our product would be the very first product to fully remove a haram substance from a compound, thoroughly changing something haram to halal, thus, produce vinegar from white wine in applying the concept istihalah. Muslims, especially in non-muslim countries, would no longer have issues regarding the problem stated and reduce time and money in solving it. This is because istihalah converts white wine to vinegar through a natural process which is oxidation. Regarding this as scientific research, we would be having experiments to make sure our hypothesis is correct, accepted and relevant as well as to test out its abilities. With visits to 'Pejabat Mufti Wilayah Persekutuan', we were able to categorize our product as either istihalah sahifah or fasidah. Collaboration with Universiti Sains Islam Malaysia (USIM) along with fellow researchers has been done to fulfil madhabs requirements needed for this experiment such as the FTIR Machine, an electronic pH meter, and an electronic shaker. When all the information and data are collected, this thesis is then produced.

**Keywords:** Istihalah; oxidation; white wine; vinegar; haram; halal; conversion

### 1. INTRODUCTION

As developments occur around the globe, the lives of Muslims are also changing. The phrase “istihalah” is a method of changing a non-halal substance to a halal substance through various natural processes. In this project, we focus on the conversion of white wine (non-halal) to vinegar (halal). The seemingly erroneous conversion has been accepted by major Sunni maddhabs such as Malik and Hanafi. When and why would this conversion take place? In a situation where a Muslim needed vinegar but they are only provided with white wine. We believe these situations would happen regularly in cooking and extreme situations where Muslims needed a drink but there's nothing in reach except for white wine. Therefore,

the main objective of the study here is to solve the problem faced by the Muslims. We aim to produce fully functioning products with it being innovative with current technological advances. We also strive to provide a choice even in the most difficult situation. Apart from that, the objective of this study is to also expand the field of istihalah and to explore its wide potential. Thus, these objectives mark the aim of our study.

As stated above, our study is still in its early stages of innovation. Therefore, there's a lot of questions rather than answers. With the help from our fellow researchers, we have uncovered most of them. First, is the conversion possible? The conversion of white wine to vinegar seems very incredulous, to make sure of it, an experiment had been done on three batches of white wine with three copy of each; a total of 9 flasks of white wine. The flasks are covered with gauze to give way to oxidization but also to prevent spills.

Why oxidization? Based on the research that had been done from reliable sources, the conversion of white wine to vinegar will only take place if the white wine is fermented. The agent of fermentation is the bacteria present in the air and the oxygen itself. By exposing white wine to the air, fermentation will happen and hopefully, the conversion will take place.

The hypothesis is proven to be true when 28 days later (and still counting). There has been a difference in the chemical levels. This has been detected by our ATR-FTIR machine (Fourier Transform Infrared Spectroscopy). The results can be seen in the figure below.

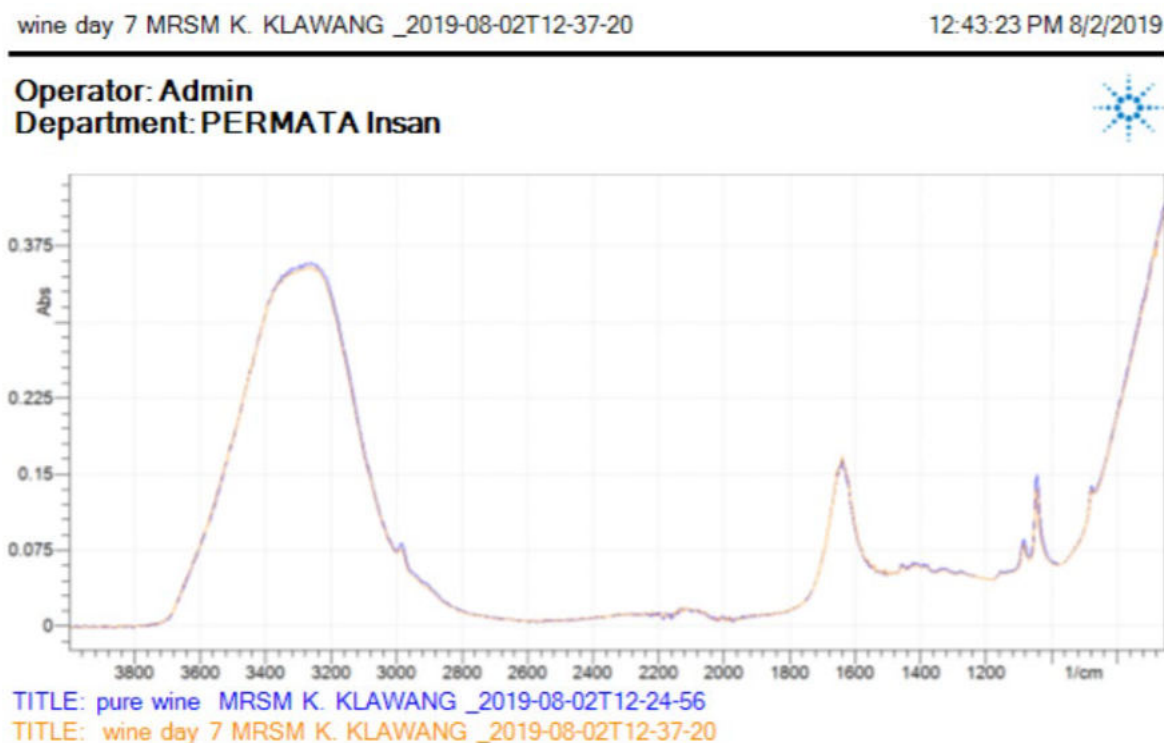
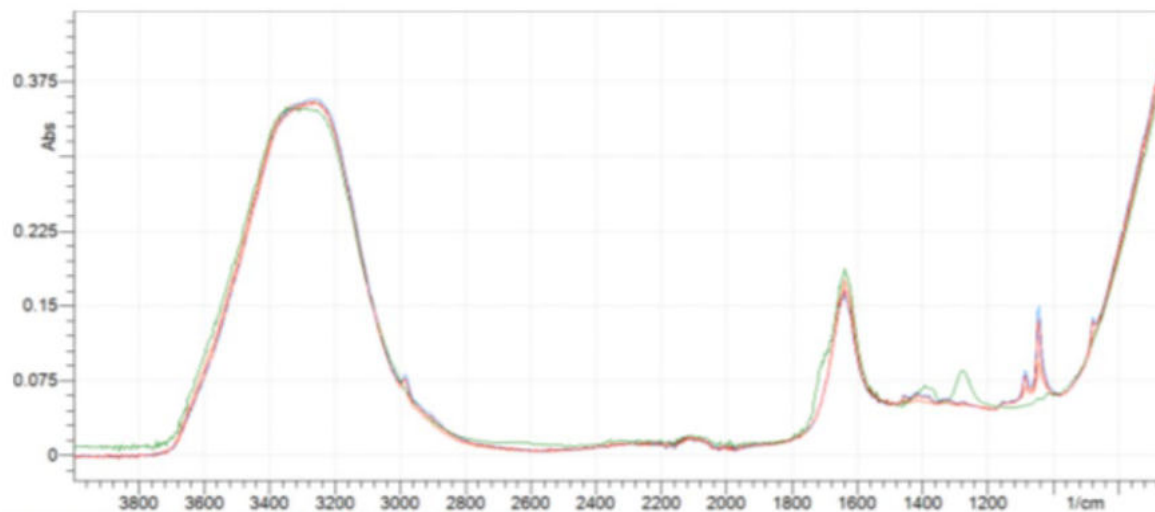


Figure 1: Comparison of pure white wine and 7-day oxidized wine

seong chan natural fermented vinegar mrsmkk\_2019-08-23T10-31-38

11:02:31 AM 8/23/2019

Operator: Admin  
Department: PERMATA Insan



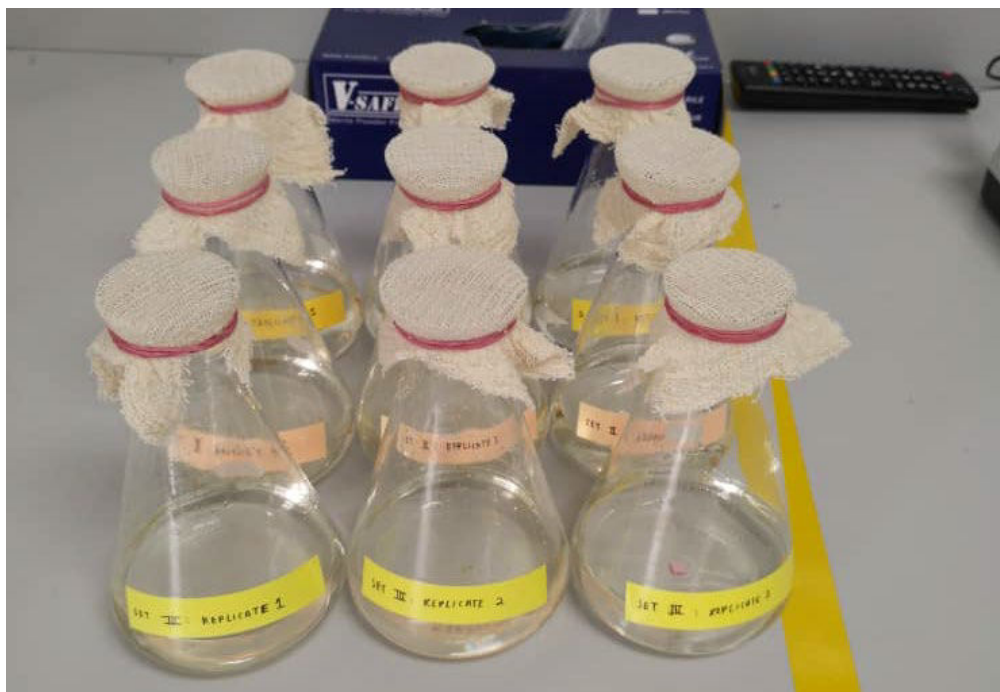
TITLE: day 28 mrsmkk\_2019-08-23T10-47-17

TITLE: pure wine MRSM K. KLAUANG \_2019-08-02T12-24-56

TITLE: seong chan natural fermented vinegar mrsmkk\_2019-08-23T10-31-38

TITLE: wine day 7 MRSM K. KLAUANG \_2019-08-02T12-37-20

**Figure 2:** Comparison of pure white wine, 7-day oxidized white wine, 28-day oxidized white wine and vinegar



**Figure 3:** Nine conical flask containing white wine which will be oxidized





**Figure 4:** ATR-FTIR machine used in this study

Regarding figure 1, not much difference could be seen between the pure white wine and the 7-day oxidized wine. However, as the time is prolonged, differences could be seen between for the results. With the results, it sparks hope for this study.

## 2. INNOVATION DEVELOPMENT

From the experiment that had been done, one thing for sure, the time taken for the results to show is quite long. A variable that can be manipulated. We wanted the chemical reaction take lesser time but to produce the same results. The results are also expected to not have side effects. Thus, to quicken the time taken, we have settled to use a catalyst. In regards that products will be consumed, a biological catalyst such as bacteria has been chosen. Hopefully, the results will be as expected.

## 3. COMMERCIAL POTENTIAL

We believe the white wine catalyst can be commercialized widely and it will make profits. If it is being sold in markets that demand such products. As stated in the Abstract and objectives, the targeted market is international Muslims and the culinary arts.

For international Muslims, we can see that they face different kinds of difficult situations in everyday life. It varies from their own safety to the food that they consume. With the white wine catalyst, they will be able to solve at least one from the 99 problems that they face. They won't have to worry if they'll consume white wine with the help of our product. Before we dive in into the next targeted group, some questions asked, "why only white wine?". Other than the fact that conversion to vinegar can happen from just white

wine, white wine is used widely but they are in fact haram. In this context, using it widely doesn't make it halal. Therefore, we tackled the closest problem to us.

For the second targeted group, the culinary arts. The potential of this group as a targeted group has only been discovered as if recently. We didn't realize that white wine plays a big role in cooking. In cooking, they would use white wine to make the meal taste more flavorful. This makes some of the Muslims hesitant to consume the food. From there, we see our product can be so much more. Unfortunately so, we haven't fully confirmed its potential.

#### 4. CONCLUSION

This study is far from its destination but for now, we can conclude a few things. The conversion of white wine to vinegar can be useful to society. It can serve its purpose as an alternative and provide a choice for Muslims all around the world. We believe that modern problems require modern solutions. Some of the problems can be settled by this brainchild.

For our other objectives, where we strive to widen the field of istilah with the help of innovation, can be achieved only with the help of the community. Society. Knowledge wouldn't be known unless it is spread by the people that received them. In hopes that this study will help people all around the world, we also hope that society would contribute it trying it and spreading it.

We also have future planning that shall be stated here. Firstly, we envisioned the end product to take the form of a pill. This is because it can be easily used. It would be soluble in white wine and allow the conversion to happen. With the form of a pill, it is also easy to store them and be brought everywhere. Just slip a packet of it in the pocket of your jeans and you're good to go.

Secondly, we also envisioned the product to have a visible reaction. This means that we want the chemical reaction to be visible to the naked eye. By seeing the reaction, maybe some fizzles, the consumer will be more convinced that the reaction has taken place and it is now safe to consume the product. For now, these are the missions that we want to achieve.

#### ACKNOWLEDGEMENT

From the start, we had the most supportive advisor. From the bottom of hearts, we want to sincerely thank our advisor, Puan Wan Asma Auzani bt Wan Md Din for all the help and advice given to us throughout the endless journey of learning and innovation. She had given words of encouragement and believe in our potential. Thank you so much for the support.

This study wouldn't have gone this far if it is not for our fellow researcher. Dr Rahayu and Mr Hakimi had given us a big opportunity to make sure we had all that is needed to make this study successful and to make way for more potential. They had taught us a lot of things and open up our mind about science and technology in Islam. Thank you very much for your help.

We wouldn't be here for each other, so it is a blessing to be paired up for this study. With the effort from all four of us, we hope for the best of our study. May our effort be blessed by Allah SWT.

## REFERENCES

- [1] Dr. Muhammad Rafiqi Hehsan, 2015, *Q&A Fiqh Perubatan*, Selangor, Malaysia, PTS Publications & Distributors Sdn. Bhd.
- [2] Jafri Abdullah, Dr. Suhaimi Rahman, Zaidah Mohd Nor, 2011, Konsep Istihalah dan Istihlak Pada Makanan dan Barang Gunaan, *Jurnal Penyelidikan Islam Bil. 24(2011):72-92*.
- [3] Mohd Izhar Ariff bin Mohd Kashim, 2017, Istihalah dan Kesannya kepada Makanan Menurut Perspektif Islam (The Effect of Istihalah on Food According to Islamic Perspective, *Journal of Social Sciences and Humanities*, Vol.12:102-111.
- [4] Zulfaqar bin Mamat, 2019, Pemakaian Kaedah Istihlak dan Istihalah dalam Penentuan Produk Halal di Malaysia Berdasarkan Bidangkuasa Perundangan dan Keputusan Hukum Muzakarah Jawatankuasa Fatwa Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam Malaysia (The Usage of Istihlak and Istihalah Methode in Halal Product Determination in Malaysia based on Legislation and Decision by The National Council of Fatwa Committee Malaysia, *Journal of Fatwa Management and Research*, Vol.15:22-43.
- [5] Mohammad Aizat Jamaludin, Mohd Anuar Ramli, Dzulkifly Mat Hashim, Suhaimi Ab Rahman, 2010, *Fiqh Istihalah: Integration of Science and Islamic Law, Revelation and Science*, Vol.02:117-123.



## **CREATIONS de UiTM**

MEGA INNOVATION CARNIVAL 2020  
*For Knowledge and Humanity*

---

CENTRE OF FOUNDATION STUDIES  
UNIVERSITI TEKNOLOGI MARA  
CAWANGAN SELANGOR KAMPUS DENGKIL

ISBN 978-967-17072-4-1



9 789671 707241