

2ND EDITION

E-EXTENDED  
**ABSTRACT**

**INTERNATIONAL  
AGROTECHNOLOGY  
INNOVATION  
SYMPOSIUM (i-AIS)**



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### INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS)

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## ABOUT FACULTY OF PLANTATION AND AGROTECHNOLOGY

The Faculty of Plantation and Agrotechnology was established in 2010 at Universiti Teknologi MARA (UiTM). The mission of the faculty is to play the vital role of producing well-trained professionals in all areas of plantation and agriculture-related industries at national and international levels.

Bachelor of Science (Hons) Plantation Technology and Management is a three-year program that strongly emphasizes the various aspects of Production Technology, Management, and Information Technology highly sought after by the agricultural and plantation sectors. Students in this program will be fully trained to serve as professionals in the plantation sector and related industries. They will have ample opportunities to fulfill important positions in the plantation industry such as plantation executives. This program provides a strong balance of technology and management courses essential for the plantation industry such as management of plantation crops, soil fertility, plantation management operation, plantation crop mechanization, and agricultural precision. As an integral part of the program, students will be required to undergo industrial attachment to gain managerial skills in the plantation industry.

The faculty is highly committed to disseminating, imparting, and fostering intellectual development and research to meet the changing needs of the plantation and agriculture sectors. With this regard, numerous undergraduate and postgraduate programs have been offered by the government's intention to produce professionals and entrepreneurs who are knowledgeable and highly skilled in the plantation, agriculture, and agrotechnology sectors.

## PREFACE

International Agrotechnology Innovation Symposium (i-AIS) is a platform to be formed for students/lecturers/staff to share creativity in applying the knowledge that is related to the world of Agrotechnology in the form of posters. This virtual poster competition takes place on the 1st of December 2022 and ends on the 8th of January 2023. This competition is an assessment of students in determining the level of understanding, creativity, and group work for the subject related to agrotechnology and being able to apply it to the field of Agrotechnology. The i-AIS 2022 program takes place from December 1, 2022, to January 8, 2023. The program was officiated by the Dean of the Faculty of Plantation and Agrotechnology, namely Prof. Madya Ts. Dr. Azma Yusuf. The program involves students from faculties of the Faculty of Plantation and Agrotechnology (FPA) and HEP participating in i-AIS 2022, namely, the Faculty of Education and Pre-Higher Education. This program involves the UiTM student and some of the non-UiTM students which come from the international university and the local university. Two categories are contested, namely UiTM and non-UiTM. To date, students from these programs have shown remarkable achievements in academic performance and participation in national as well as international competitions.

This competition is an open door for the students and lecturers to exhibit creative minds stemming from curiosity. Several e-content projects have been evaluated by esteemed judges and that has led to the birth of this E-Poster Book. Ideas and novelties are celebrated, and participants are applauded for displaying ingenious minds in their ideas.

It is hoped that such an effort continues to breed so that there is always an outlet for these creative minds to grow.

Thank you.

Dean  
On behalf of the Organizing Committee  
Conference Chair  
Universiti Teknologi MARA  
Faculty of Plantation and Agrotechnology  
<http://fpa.uitm.edu.my>

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# SUPPLEMENT OF CORN SILK

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**ABSTRACT** - A corn hair is a bunch of bud heads that come from the female flower corn plants, shaped like threads and yellowish hairs. The function of corn hair is to trap pollen during pollination. Corn hair has bioactive compounds that can act as antioxidants when consumed. The benefits can be obtained through processed corn hair products, corn silk capsules are a food supplement and not a means to treat, prevent, or cure disease. Corn silk, the long, silky, yellowish threads found within corn ear husks, is the major component of the capsules.

**Keywords:** Corn silk, antioxidant, corn silk capsules and food supplement

## INTRODUCTION

Corn silks are the clusters of thread like, yellowish hairs that form on the bud tips of female flower corn plants. Corn silk's purpose is to act as a catcher for pollen during the process of pollination. Many individuals are unaware that corn silk contains bioactive chemicals that can serve as antioxidants when ingested. In traditional medicine, corn silk is employed for both the treatment of sour urine and the reduction of cholesterol levels in the blood (Hasanudin et al, 2012). The advantages are accessible via corn silk products after processing.

### Corn Silk

The female flower bud of a corn plant produces a corn silk, which resembles hair. When pollination occurs, pollen is captured by the corn silk and used to create corn kernels. Corn silk colors range from a light green through yellow, red, and light brown. Corn silk has a mildly sweet flavor and can grow to reach 30 centimeters in length. Corn silk, a byproduct of growing corn plants, has potential as a replacement for silk in the textile industry as well as a treatment for diabetes and depression (Hasanudin et al., 2012). Bioactive substances including steroids, oil volatiles, alkaloids, flavonoids, tannins, chlorogenic acid, and other phenolic compounds may be found in corn silk, all of which are good for human health (Bushman, 2002). After discovering that Flavonoids are the most abundant phenolic compound in maize silk, researchers (Nurraihana et al., 2018) employed the ethyl acetate fraction to produce a total of 123.12 13.49 mg GAE/g.

## **Antioxidant**

Free radicals are unstable molecules that the body generates in response to environmental and other stressors; antioxidants can prevent or reduce the harm they bring to cells. Free radical scavengers are another name for them. Antioxidants can come from either natural or synthetic sources. Antioxidants may be found in high concentrations in certain plant-based meals. Antioxidants found in plants are a type of phytonutrient. A few antioxidants, called endogenous antioxidants, were also manufactured by the body. Exogenous antioxidants are those obtained from sources external to the body. As cells metabolize food and respond to their environment, they release waste products known as free radicals. Oxidative stress occurs when the body's natural defenses against free radicals are overwhelmed. Cells and bodily processes may be harmed as a result. Sometimes referred to as reactive oxygen species or free radicals (ROS).

Internal factors like inflammation as well as environmental ones like pollution, UV radiation, and cigarette smoke can all contribute to an increase in free radical generation in the body. Numerous inflammatory and ischemic disorders, including heart disease, cancer, arthritis, stroke, respiratory diseases, immunological deficiency, emphysema, Parkinson's disease, and others, have been associated to oxidative stress. Antioxidants are supposed to improve health by neutralizing free radicals in the body.

## **MATERIAL AND METHOD**

Corn silk, capsule material, packaging materials, and maybe additional substances may all be employed in the creation of corn silk capsules. Corn silk, the long, silky, yellowish threads found within corn ear husks, is the major component of the capsules. Corn silk capsules may be created from a variety of materials, including gelatin or plant-based components, depending on the product's intended purpose, regulatory environment, and individual manufacturer's or consumer's preferences. Packaging and labelling the final corn silk capsules is a necessary step to ensure they are distributed and sold safely and in accordance with industry standards and government requirements. Corn silk capsules may also contain excipients, which are compounds added to enhance stability, flowability, or other product attributes.

Some of the steps that could go into making corn silk capsules are locating and collecting the raw materials, drying, and processing the silk, encapsulating the silk, and finally packaging and labelling the completed product. In the first step, mature corn plants are hand-picked to provide the silk used to make corn silk. After that, the corn silk is taken out of the husks. Corn silk is harvested and then dried to preserve it when its moisture content is reduced. Depending on the final product's purpose, the dried corn silk is either ground into a fine powder or left in its complete shape for processing. Corn silk is then encased in capsules, which can be composed of gelatin or plant-based materials. The corn silk is placed inside the capsules, and the capsules are then sealed. When complete, corn silk capsules are packed and labelled in accordance with government and industry requirements. Dosage, suggested usage, and potential side effects should all be included on the label.

## **RESULTS AND DISCUSSION**

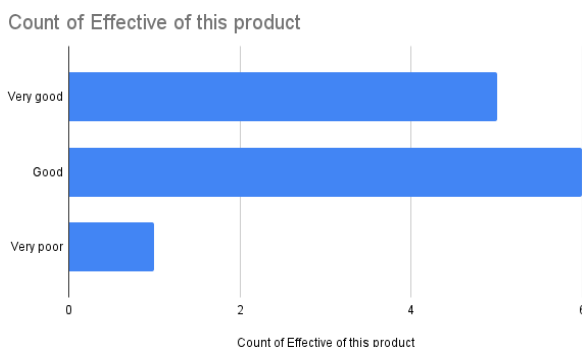
In the end, the success or failure of a product's creation is dependent on the manufacturer's intended use of the product, as well as all testing and quality control procedures that were put into place. The development of corn silk capsules could lead to several outcomes, such as the production of a high-quality, safe, and effective product that satisfies applicable regulatory standards, the production of a corn silk form that is easy to consume and appealing to consumers, and the production of whatever else the manufacturer may have intended.

Corn silk capsules may have been developed because some people find it difficult to swallow the powdered or liquid version of this traditional herbal treatment. Teas and tinctures made from corn silk are common ways to take in this ingredient, although these preparations aren't for everyone. Encapsulating corn silk allows for the creation of a more portable and easy-to-swallow form, which may be preferable to some consumers. Corn silk encapsulation may also assist standardize the amount of herb in each capsule, allowing for more precise dosing by the end user. Such seeking the possible health advantages of corn silk should pay close attention to this, since only by ingesting the recommended amount will they experience those benefits.

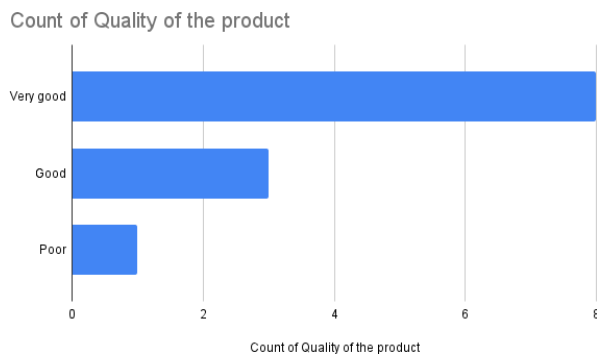
Corn silk has shown some promise in treating specific medical issues, and there is some evidence to back up its usage. Corn silk has been shown to have anti-inflammatory and moderate sedative effects in animal studies, as well as diuretic effects, according to research published in the Journal of Ethnopharmacology. However, further studies are required to properly evaluate the possible health benefits and safety of maize silk in people.

Corn silk capsules are a food supplement and not a means to treat, prevent, or cure disease. If you have any preexisting problems or are on any drugs, it is essential that you discuss your supplement regimen with your doctor before beginning.

Figure below shows that the result of survey that conduct to all level of people. The survey was aim for the effective and the quality of this product to the respondent. This survey shows that most of the respondent are satisfied of this product.

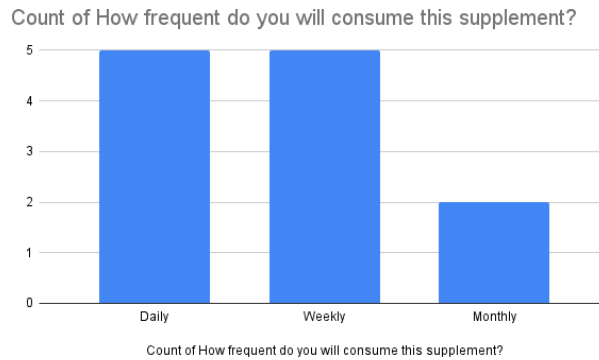


**Figure 1: Count of Effective of This Product**



**Figure 2: Count of Quality of The Product**

**Table 1: Table Header**



## 1. CONCLUSION

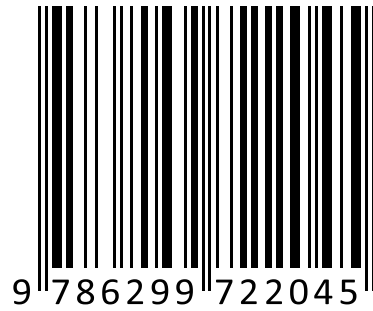
Corn silk capsule has potential as a source of antioxidants because contains bioactive compounds such as phenolic, flavonoids and carotenoids. Active compound known to have the function of counteracting free radicals produced from oxidation reactions.

## REFERENCES

- [1] Syawal, A. N., & Laeliocattleya, R. A. (2020). POTENSI TEH HERBAL RAMBUT JAGUNG (*Zea mays L.*) SEBAGAI SUMBER ANTIOKSIDAN: KAJIAN PUSTAKA. *Jurnal Ilmu Pangan Dan Hasil Pertanian*, 4(1), 1– 6.
- [2] Wang, K. J., & Zhao, J. L. (2019). Corn silk (*Zea mays L.*), a source of natural antioxidants with  $\alpha$ -amylase,  $\alpha$ -glucosidase, advanced glycation and diabetic nephropathy inhibitory activities.
- [3] *Pharmacotherapy*, 110, 510–517. *Biomedicine & Amp.* <https://doi.org/10.1016/j.biopha.2018.11.126>
- [4] VITAMIN A: Overview, Uses, Side Effects, Precautions, Interactions, Dosing and Reviews <https://www.webmd.com/vitamins/ai/ingredientmono-964/vitamin-a>

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