

# The Effectiveness Inhibitory for Mash Alcoholic Seeds Extracts Anti-Fungi Causing Dermal Infections

Sawsan I. Noori<sup>1</sup>, Khalid Abdul Kreame<sup>2</sup>

<sup>1,2</sup>Department of Chemistry, College of Science, University of Baghdad, Al-Jadriya campus, 10071 Baghdad, Iraq

**Abstract:** Against five types of skin fungus for different concentrations of ethanol (75%, 50% and 25% and 10%) for each of *Aspergillus niger*, *Aspergillus Flavus*, *Aspergillus Fumigatus*, *Epidermatophyton*, *Marcroporun spp.* The diameter hole (6mm) with PAD media, as well as the scheme FTIR, which was conducted at the Central Environmental Laboratory in the Faculty of Sciences / University of Baghdad, that was effective biological inhibitory clearly and differentiated according to each alcoholic extract versus all the five of skin fungus, has found the highest inhibition of the extract (75% alcohol, the fungus *niger*. 28mm) and (fungus *Epidermatophyton*. 30mm) so that in the concentration (50% alcohol) of the fungus (*Perecilliu*. 24mm), and fungus (*Macrosporun*. 26mm) While in the concentration (25% alcohol) of fungus (*Aspergillus niger*. 21mm) and fungus (*Epidermatophyton*. 20mm). At the concentration (10% alcohol) of the fungus (*Aspergillus niger*. 20mm) and fungus (*Macrosporun spp.* 17mm). Absorbance scheme (FTIR Diagram) show high peaks of the effective chemical groups and play a role in biological effectiveness and have the ability to redox and the elimination of free radicals, such as group [CH, CH<sub>3</sub>, CO, NH, C = O, OH] and by absorbance set out in the scheme The presence of aromatic and aliphatic compounds, phenolic, amines, aldehyde, alkyl groups and carbonyl, which is considered removing free radicals and as anti-oxidants, that give healthy and beneficial effect for humans healthy. The results indicate that different effect for Mash alcoholic extracts for infections fungus skin<sup>(1)</sup>.

**Keywords:** Mash, skin fungus, biological inhibitory, dermal infections.

## 1. Introduction

Mash is a common plant name Mung beans (*Vignaradiata* scientific name classified in the Herbarium, Department of biology University Baghdad), where this plant has been grown in Indian, China, and East of Asia, Iran, USA, and many country in the World.<sup>(2,10)</sup> Also it's mentioned that the facility in Iran resources since, has spread its benefits many people have been used as food for high calorie and contains protein, sodium, potassium, iron, vitamin C, B, E and it is free of cholesterol and is used as a medicine for the contents of the chemical in the treatment of diseases and many private inflammatory skin diseases, for example, blisters, acne, psoriasis in humans. Mash contains antioxidant compounds<sup>(3)</sup>, that work to counter free radicals<sup>(4)</sup>, (that effect on human health and skin infections and the cause of aging and sagging skin and wrinkles signs of making Mash keeps the youth and freshness of the skin, where the use of masks useful skin, also acts as a good inflammatory and redness skin, is also used as a solution to clean the skin where it's works to minimize the pores of the many space and works on washed and disinfected, also there are benefits for Mash<sup>(5)</sup>, because it contains antioxidants and vitamin C, which are working to strengthen the immune system of humans against various malignant diseases and also against the common chest and flu and cold<sup>(6)</sup>.

Mash and benefits of other works to strengthen the nervous system and muscles to the presence of calcium, magnesium, phosphorus, We loss Mash in mostly table foods, it's rich with highly chemical compounds as remedy for many disease.<sup>(7)</sup>

## 2. Method and Material

Mash seed were collected from local market and was cleaned well, to remove dust and foreign particles. The seeds were then left on a clean surface to dry well in the room temperature, The seeds were dried under in shade for 3 days, Then seeds was grinded to powder by using (Sony 122R) grinder and stored to use in extract, then were prepared four several solutions' From the alcoholic seeds extracts, about Fifty gm of dried seeds of (*Vigna radiata* seeds) were stirred in 250 ml of (75% ethanol) on magnetic stirrer for 24 hrs., the precipitate was removed by filtration, through filter paper (no.1). Then filtrate was concentrated under vacuum. This method was tried for (conc. 50%, 25%, 10% ethanol extracts),<sup>(8)</sup>. Then by using the [media PAD] and Laboratory Incubator at (37°C) for five days and observed the changes in diameter of all hole for the extracts.

## 3. Results and Discussion

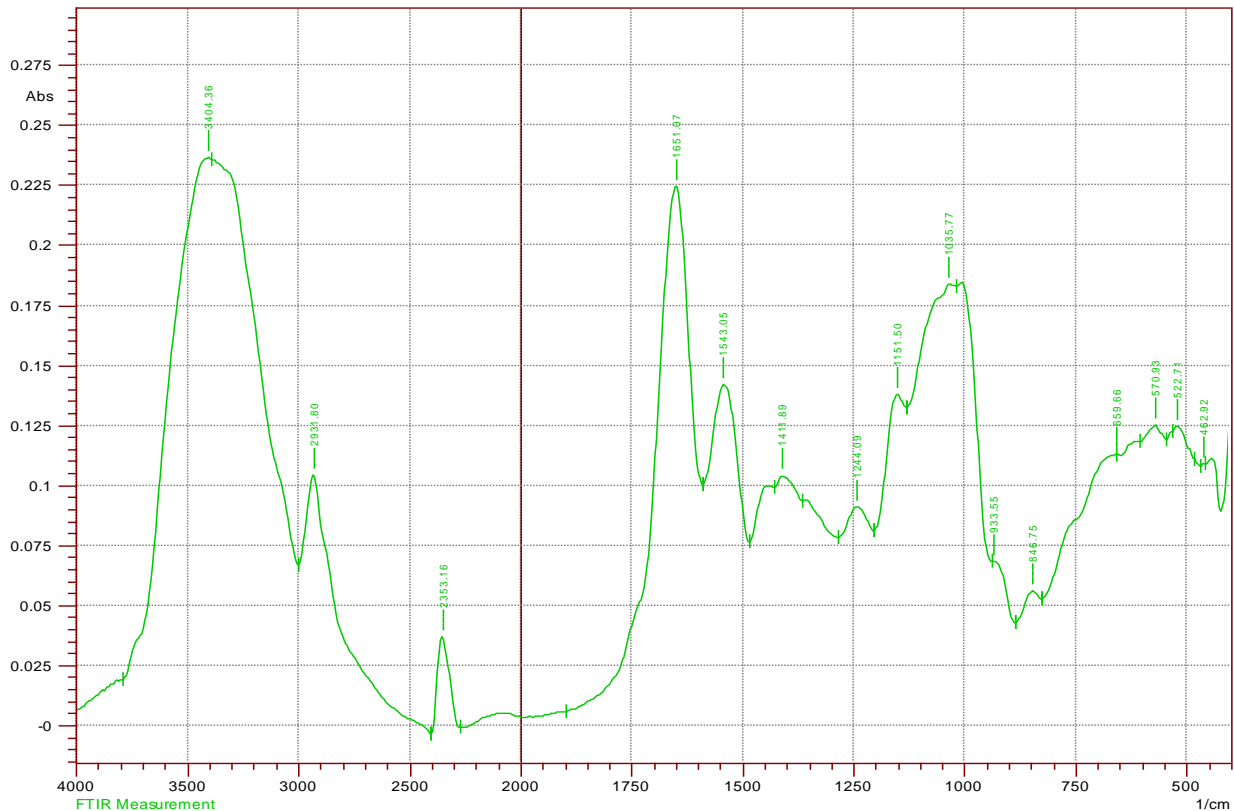
According to the results (Table 1) and (Fig 1) while show Mash seeds have large area of nutrition and bilateral benefit as food and so medical using, it's clearly the aim of study is achieved and obtained many parameters, that show the activities of several extracts of Mash seeds anti-fungus causing skin infections by expansion the diameter of the hole of PAD media after putting extracts clearly for 3-5 days in some Experiment, the present of active chemical compounds have the main action to occur Variables in hole diameter and give the inhibition effect, that mean Mash is rich with anti-oxidant factors and have ability to work as remedy if it's taken Mainly in human food.

The radius of zones inhibition will be uniformly circular and can be a confluent lawn of growth, so a diameter of inhibition zone can be measured in millimeters.<sup>(9)</sup> FTIR analysis curve diagram for Mash peak show value of absorbance (cm<sup>-1</sup>) Groups as following:

(3404.36), (2931.80), (2353.16), (1651.07), (1543.05), (864.75), (659.66), (570.93), (522.71), (1411.89), (1244.09), (1151.50), (1035.77), (933.55), (462.92). That mean Mash have Multiple active chemical compounds which accrue inhibitors effect for fungus growths in the media zone visible growth.<sup>(11)</sup>

**Table (1):** Scheduled show the effect of Mash ethanolic extracts with several conc. On five of skin fungus causes infections.

Ethanol Conc. Extract	Aspergillus niger Diameter	Aspergillus Flavus. Diameter	Perecillium. Diameter	Epidermatophyton Diameter	Macrosporium spp. Diameter
75%	28	10	8	30	20
50%	12	10	24	20	26
25%	21	10	8	20	18
10%	20	8	8	12	17



**Figure 1:** FTIR diagram for Mash seeds

#### 4. Conclusion and Recommendation

Mash is a medicinal plant that play important role in dietary and human immunity for metabolism because it rich with many antioxidant compounds and energy for body, so the advice to get it's in our nutrition.

#### References

[1] Al-Snafi, A.E., *The Pharmacological Importance of Bauhinia variegata. A Review.* International Journal of Pharma Sciences and Research, 2013. **4**(12): p. 160-164.

[2] Poehlman, J., *The Mung bean*, pp: 27-29. 1991, Oxford and IBH Publication Co. Pvt. Ltd. New Delhi, India.

[3] Prachayasittikul, S., et al., *Antimicrobial and antioxidative activities of bioactive constituents from Hydnophytum formicarum Jack.* Molecules, 2008. **13**(4): p. 904-921.

[4] Myagmar, B.-E. and Y. Aniya, *Free radical scavenging action of medicinal herbs from Mongolia.* Phytomedicine, 2000. **7**(3): p. 221-229.

[5] Mendes, G., et al., *Antifungal activity of extracts from Atacama Desert fungi against Paracoccidioides brasiliensis and identification of Aspergillus felis as a promising source of natural bioactive compounds.* Memórias do Instituto Oswaldo Cruz, 2016. **111**(3): p. 209-217.

[6] Mubarak, A., *Nutritional composition and antinutritional factors of mung bean seeds (Phaseolus aureus) as affected by some home traditional processes.* Food Chemistry, 2005. **89**(4): p. 489-495.

[7] Kou, X., et al., *Quantitative assessment of bioactive compounds and the antioxidant activity of 15 jujube cultivars.* Food Chemistry, 2015. **173**: p. 1037-1044.

[8] Rahman, S.A., et al., *Antibacterial activity of some wild medicinal plants collected from western Mediterranean coast, Egypt: Natural alternatives for infectious disease*

- treatment*. African Journal of Biotechnology, 2011. **10**(52): p. 10733-10743.
- [9] Khalil, A. and B.F. Dababneh, *Inhibition of phytopathogenic fungi by extracts from medicinal plants in Jordan*. Journal of Biological Sciences, 2007. **7**(3): p. 579-581.
- [10] Kalwij, J.M., *Review of 'The Plant List, a working list of all plant species'*. Journal of Vegetation Science, 2012. **23**(5): p. 998-1002.
- [11] Padmashree, A., et al., *Effect of infrared processing on functional, nutritional, antinutritional and rheological properties of mung bean (Phaseolus aereus) seeds*. International Journal, 2016. **4**(1): p. 606-613.

