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DATE / PLACE OF BIRTH

**1977/03/20**

**IRAQ**

**Social Profiles**

**ResearchGate**

[**https://www.researchgate.net/profile/Zakaria**](https://www.researchgate.net/profile/Zakaria) **Sami**

[**/**](https://www.linkedin.com/in/imad-younus-hasan-24698213b/)

**ORCID**

**0000-0002-6746-6783**

**Languages**

Arabic

English

**Hobbies**

Ex:football

Ping pong

***Dr. Zakaria Sami Almola: Lecturer in fungi*** ***&*** ***lichens***

Over 15 years effective, knowledgeable and effective biologist working with individuals, groups and facilities, with extensive experience in fungi and lichens, microscopy, diagnostics, and fungi and bacterial inhibition studies. Strong written and verbal communication skills in the English language, supervisory and teaching experience and advanced programming skills.

**Employment History**

Assist. lecturer at University of Mosul, Iraq

16/ 2/ 2006- 26/ 12/ 2010

Lecturer at University of Mosul, Iraq

26/ 12/ 2010- present

**Education**

Doctor of Philosophy, at University of Mosul, Iraq

20/ 5/ 2018

Thesis title (**A study of the Lichens of Amadiya and Rowanduz Districts of the Mountain Region in Iraq and the Evaluation of the Effectiveness of Some Species as Antimicrobial Agents )**

**Abstract**

The results of lichens identification included 47 species which have been gathered from 17 locations from two districts Amadiya and Rowanduz during the two growth seasons 2013 and 2014. These species are related to 29 genera and 14 families. Among these species there are 33 new records of the lichen flora of Iraq.

The largest genus was *Caloplaca* represented by 7 species followed by *Collema* with 5 species, then *Aspicilia* with 3 species. Physciaceae was the largest family with 6 genera followed by Verrucariaceae with 4 genera.

*Lecanora muralis*, the crustose species, is the most prevalent was observed in all study locations followed by the crustose species *Aspicilia calcarea*, *Fulgensia subbracteata* and *Placocarpus schaereri* then the squamulose species *Squamarina cartilaginea.*

Sharanish is the richest location with 15 lichen species, followed by the locations of (southeast of Gali Balkaif, Alshaikh Aadi and Gali Zanta) with 12 species, then the location of Alberifcan road with 11 species. Duhok – Zawita road and Kori – Kori Sheer are the poorest locations with 5 species only. *Thelidium* sp. and *Lichinella* *cribellifera* found only in Rowanduz district and not found in Amadiya district.

Regarding lichens growth forms, there are 28 species of crustose type (59.5% of recorded species, 13 species of foliose type and 6 of squamulose type (representing 27.7% and 12.8% respectively).

The substrates of lichens varied and included types of rocks, soil and different group of plants. Some few species of lichens grew on more than one type of substrate.

Inorder to evaluate the antimicrobial activity of lichens extracta against bacteria and fungi, acetone and ethanol extracts of the lichens *Diploschistes ocellatus*, *Lecanora muralis* and *Physconia distorta* were chosen to be tested against 8 species of bacteria beside 8 species of fungi using agar well diffusion method.

Generally, acetone extracts of the three lichens were the most effective in inhibiting 6 bacterial species comparing with ethanol extracts which showed activity against only 4 species.

Results proved that gram negative bacterial species were less affected by lichen extracts than positive. Only two species *Salmonella typhimurium* and *Pseudomonas aeroginosa* were inhibited by *Physconia distorta* extracts, while the two other species *Klebsiella pneumoniae* and *Escherichia coli* were not affected.

All gram positive bacterial species (*Bacillus* sp., *Micrococcus luteus*, *Staphyllococcus aureus* and *S. intermedius*) were inhibited by one or more extract of the three lichens.

The results also showed that *Physconia distorta* extracts were the most effective then *Lecanora muralis* extracts and finally *Diploschistes ocellatus* extracts.

Among the selected species of fungi, *Cladosporium* sp. was the most affected by acetone and ethanol extracts of lichens. Acetone extract of *Lecanora muralis* had inhibiting effect on the growth of all the species of fungi at different degrees. The fungal species *Alternaria alternata* and *Fusarium solani* showed resistance to all ethanol extracts of the three lichens. Ethanol extract of *Diploschistes ocellatus* showed no antifungal activity against all fungal species under study.

Generally, when comparing between fungi and bacteria in terms of sensitivity to lichens extracts, it was found that bacteria were the more sensitive than fungi.

We conclude that lichens are important antimicrobial agents against many pathogenics like bacteria and fungi. Especially the recent researches tend to find new alternative antibiotics because many of microorganisms showed high resistance to numerous antibiotics which cause problems in the treatment of diseases that require continuous investigation on new antibiotics from different sources like medicinal herbs, fungi and lichens.

**Master of Science (M.Sc.) at University of Mosul, Iraq**

**22/ 7/ 2003**

**Title Master's Thesis** (Investigation of fungal isolate producing lipases from olive fruits)

Summary

In this study, 13 fungal isolates were isolated and identified from olive fruits. These isolates belong to 7 genera with different species and subspecies. Enormous plant oils were used individually as constituent of growth media in order to detect their efficiency in stimulating fungus growth and secreting lipase.

A qualitative test for detecting these isolates in secreting lipase and selecting the best isolate using methods of solid media which contain "Tween 80" and "Tributyrin" separately was exploid. The fungus isolate ***Aspergillus niger*** (2) had the highest growth rate and the highest lipase production and for which it is selected as the best lipase producing isolate to conduct a series of consequent experiments so that to detect and improve its lipase production. This aim was achieved by determining the best conditions for growth and lipase production using liquid media.

Three kinds of plant oil were used (olive oil, sunflower oil, corn oil) to detect their efficacy in stimulating growth and production of lipase. The effect of oil concentration and incubation period were studied ,and it was found that concentration of 2% v/v of olive oil for 4 days of incubation revealed best growth and the highest lipase enzyme activity.

The effect of changing cultural conditions upon isolate growth and lipase activity has been studied. It was found that the initial pH (5) and incubation temperature of (30 ± 1)Cْ were the best conditions in spite of increasing growth as raising temperature to 36 Cْ accompanied by decline of lipase activity.

The effect of changing other constituents was also detected. The incapability of fungus isolate to grow and to produce lipase effectively depending on inorganic nitrogen sources as a sole source of nitrogen. Despite that ,ammonium nitrate was the best of inorganic nitrogen sources compared to other sources in enhancing lipase production of at concentration of 1 g/100ml. Adding peptone (as the best organic nitrogen sources, this was tested in a separate experiment) beside to NH4NO3 to culture media raised growth rate and lipase activity at 4g/100ml. The best source of phosphate was KH2PO4 at 0.28 g/100ml.

Hydrous magnesium sulphate at 0.05 g/100ml affected positively in raising productivity.

Data analysis expressed a positive significant correlation between dry weight of biomass and produced lipase activity.

**Bachelor of Science (B.Sc.), University of Mosul, Iraq**

**1999- 2000**

**The committees**

Member of the examination committee in the department for five separate years

Member of the furniture inventory committee in the department

Member of the Counseling Committee in the department

Member of the department's media committee

Member of the fourth stage graduation projects committee

Member of the department's firefighting committee

Member of the Committee to receive buildings after reconstruction

Member of the conference reception committee

Member of the Media Committee for a symposium in the Department of Life Sciences

**Skills**

Photographing of microorganisms, isolation of fungi, cultivation of fungi, purification of fungi, improvement of fungi growth, inhibition of microorganisms, gathering of lichens, tests of lichens, identification of lichens, preparation of lichens or plants extracts.

**Names of academic persons who can be contacted when needed to ask about the researcher**

Dr. H. J. M. Sipman, Emeritus of lichens

Botanical museum, Konigin-Luise-Str.6-8

Berlin- Germany

**Recent conferences**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ت** | **عنوان المؤتمر** | **التاريخ** | **محل اقامة المؤتمر** | **نوع المشاركة** |
| **1.** | **The 4th scientific conference for diabetes & endocrinology** | **13-14 / 11/ 2019** | **قاعة في الغابات/ سايدين حي الشرطة** | **حضور** |

**Scientific symposium**

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| --- | --- | --- |
| **عنوان الندوة** | **التاريخ** | **محل الاقامة** |
| **ندوة عدس الماء** | **4/6/2020** | **جمعية صيانة المصادر الوراثية والبيئة العراقية** |
| **تقنية النانو افق واسع في معالجة القضايا البيئية والصحية** | **18/ 8/ 2020** | **مركز بحوث البيئة والسيطرة على التلوث** |
| **الصحة الانجابية مفرداتها ومفاهيمها** | **7/10/2019** | **كلية طب نينوى** |
| **ندوة البنك المركزي العراقي/ فرع الموصل/ لجنة الشمول المالي** | **11/12/2019** | **كلية العلوم/ جامعة الموصل** |

**Recent workshops**

**الفطريات بين الإمراضية والفوائد الطبية -9 كانون الثاني 2020, كلية العلوم / قسم علوم الحياة / جامعة الموصل**

**تأثير بعض النباتات والاعشاب الطبية في ظل جائحة كورونا- 2 كانون الثاني 2020, كلية العلوم/ قسم الكيمياء / جامعة الموصل**

**اساليب المعالجة البايولوجية للملوثات البيئية- 16/ 1/ 2021, كلية الصحة والتقانات الطبية/ الجامعة التقنية الوسطى**

**استخدام اختبارات المتمم النوعية في تشخيص بعض الامراض – 26/ 1/ 2021, كلية العلوم / قسم علوم الحياة/ جامعة الموصل**

**التطبيقات الجزيئية والفسلجية للإجهاد التأكسدي- 27/1/ 2021, كلية العلوم / قسم علوم الحياة/ جامعة الموصل**

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| --- | --- | --- | --- |
| ت | عنوان الورشة | محل اقامتها | تاريخ اقامتها |
| **1** | **ورشة نظام المقررات** | **جامعة الموصل/ كلية العلوم** | **14-3-2019** |
| **2** | **مخاطر التلوث الصناعي في مدينة الموصل** | **كلية علوم البيئة وتقاناتها** | **16-17-2018** |
| **3** | **اسس البحث العلمي والنشر في المجلات العالمية الرصينة** | **جامعة الموصل/ كلية الصيدلة** | **3-1-2019** |
| **4** | **المؤشرات البايولوجية التي يمكن استخدامها لمراقبة النظم البيئية وصحة البيئة** | **جامعة الموصل/ كلية العلوم** | **19-3-2019** |

**عدد كتب الشكر:**

**من مكتب السيد الوزير 2**

**من السيد رئيس الجامعة 2**

**من السيد العميد 3**

**من السيد رئيس القسم 2**

**The academic subjects I taught:**

Mycology, Classification of fungi, plant pathology, Plant groups, Plant physiology, Natural history

**Electronic teaching methods**

Google classroom

Edmodo

Direct meeting with students through the program Meet or FCC

**Subscribe to the researchgate**: Subscriber

**Subscribe to the google scholar site**: Subscriber

**Subscriber to the ORCID**: Subscriber

**Supervising the fourth phase projects:**

3 projects were previously completed and 3 are in progress

**Contribute to research support**

**Participation in committees to discuss fourth stage graduation**

**Projects**

**Participate in the department seminars in the department**

**Participation in the field practices accomplished by the department**

**Training courses**

|  |  |  |  |  |
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| **ت** | **عنوان الدورات التدريبية** | **التاريخ** | **محل اقامتها** | **نوع المشاركة**  **(محاضر، ورقة عمل ، حضور)** |
| **1.** | **Severe Acute Respiratory Iinfection (SARI) Treatment Facility Design** | **2/4/2020** | **منظمة الصحة العالمية** | **حضور** |
| **2.** | **Infection Prevention and Control (IPC) for Novel Coronavirus (Covid 19)** | **2/4/2020** | **منظمة الصحة العالمية** | **حضور** |
| **3.** | **COVID-19: Operational Planning Guidelines and COVID-19 Partner Platform to support country preparedness and response** | **24/3/2020** | **منظمة الصحة العالمية** | **حضور** |
| **4.** | **Lets Break the chain of Covid-19 infection (Arabic)** | **10/4/2020** | **جامعة محمد بن راشد للطب والعلوم الصحية** | **حضور** |

**Continuing education course**

**المجهر الالكتروني الماسح.. تركيبه وطرق التصوير به- 10-12/ 1/ 2021, كلية العلوم / قسم الفيزياء/ جامعة الموصل**

**Attendance**

**Awareness week against COVID-19, 17-21/ 1/ 2021, Biology department / College of sciences/ University of Mosul.**

**Publications:**

1- Abdulrazzaq, Z., S., & Al-barhawi, R., K., (2006). Survey of fungal isolate producing lipases from fungi growing on olive fruits. Journal of education & science, Vol. (18). No.(3): 57-65.

**2**- Abdulrazzaq, Z., S., & Al-barhawi, R., K., (2009).The efficacy of different concentrations of three kinds of vegetable oils under different incubation periods on growth & lipase productivity of *Aspergillus niger* (2).Tikrit Journal of pure science. Vol.(14), No. 1: 32-40.

**3**- Albarhawy , R., K. & Almola , Z., S., (2011).Changing some constituents of media to enhance growth and lipase enzyme production of local isolate of *Aspergillus niger* . 2nd scientific conference for biological science – sci college –Mosul university. 16-17 Nov.

**4**- Altaee, M., I., & Almolla, Z., S., (2010). Effect study of *Rhizobium leguminosarum* bv. Viciae on some fungi group growth. Tikrit Journal of pure science. Vol.(15), No. 1: 17-21.

**5**- Almola, Z., S., (2011).The inhibitory effect of henna *Lawsonia inermis* leaves on some fungi. College of basic education researches Journal, Vol.(10), No. (4) :501-510.

**6**- Almola, Z., S.; Al-Ni'ma, B., A.; Ramadan, N., A., (2016). Antibacterial Effect of Some Iraqi Lichen Extracts. International Journal of Science and Technology Vol.(5), No.( 9): 448-456.

**7**- Almola, Z., S.; Al-Ni'ma, B., A.; Ramadan, N. A. (2017). LICHEN DIVERSITY IN AMADIYA AND ROWANDUZ DISRICTS IN IRAQ. Bangladesh J. Plant Taxon. 24(1): 23–32.

8- Almola, Z., S; Almola, S., H.; Ahmad, N., J.(2020). The inhibitory effect of alcoholic extracts of three weeds on growth of some microorganisms. College of basic education researches Journal, Vol.(16), No. (4) :929-948.