

[< Back to results](#) | 1 of 1
[↗ Export](#)
[↓ Download](#)
[🖨 Print](#)
[✉ E-mail](#)
[Save to PDF](#)
[☆ Add to List](#)
[More... >](#)

Malaysian Journal of Analytical Sciences  
Volume 19, Issue 1, 2015, Pages 138-143

## Isolation of bacterial strain for biodegradation of fats, oil and grease (Article)

[Isolation of bacterial strain for biodegradation of fats, oil and grease]

Alkhatib, M.F. ✉, Alam, M.Z., Shabana, H.F.M. 🔍

Bioenvironmental Engineering Research Center (BERC), Biotechnology Engineering Department, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia

### Abstract

[View references \(23\)](#)

Fat, oil and grease (FOG) deposition is one of the major problems that harm the environment and cause dissatisfaction for human. Uncontrolled and un-pre-treated FOG removal from the kitchen could lead to its accumulation in the piping system. Problems include the interference of fat with the aerobic microorganisms that are responsible in treating the wastewater by reducing oxygen transfer rates and for anaerobic microorganisms; their efficiency could also be reduced due to the reduction of the transport of soluble substrates to the bacterial biomass. Biodegradation could be one of the effective means to treat FOG. The main objective of this study is to isolate bacterial strains from the FOG waste and identify the strains that are capable in biodegrading FOG waste. FOG sample was collected from a sewer manhole. Enrichment technique was applied, followed by isolation of bacterial strains to determine which strain is able to degrade the FOG deposition. Some morphology for the bacterial strain was done to determine its characteristics. © 2015, Malaysian Society of Analytical Sciences. All rights reserved.

### Author keywords

Bacterial strain Fat Grease Oil

ISSN: 13942506

Source Type: Journal

Original language: English

Document Type: Article

Publisher: Malaysian Society of Analytical Sciences

### References (23)

[View in search results format >](#)

All [Export](#) [🖨 Print](#) [✉ E-mail](#) [Save to PDF](#) [Create bibliography](#)

1 Jameel, A.T., Alade, A., Muyubi, S., Abdul Karim, M.I., Alam, Z. Removal of Oil and Grease as Emerging Pollutants of Concern (EPC) in Wastewater Stream (2011) *IIUM Engineering Journal*. Cited 14 times.

2 Mendiola, S., Achútegui, J.J., Sánchez, F.J., San José, Ma.J. Polluting potential of wastewater from fish meal and oil industries

(1998) *Grasas y Aceites*, 49 (1), pp. 30-33. Cited 6 times.

[View at Publisher](#)

Metrics ⓘ [View all metrics >](#)

2 Citations in Scopus

25th Percentile

0.40 Field-Weighted

Citation Impact



PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

### Cited by 2 documents

Effect of Organic Loading Rates on biodegradation of linear alkyl benzene sulfonate, oil and grease in greywater by Integrated Fixed-film Activated Sludge (IFAS)

Eslami, H. , Ehrampoush, M.H. , Ghaneian, M.T. (2017) *Journal of Environmental Management*

Reduction and biofixation of carbon dioxide in palm oil mill effluent using developed microbial granules containing photosynthetic pigments

Najib, M.Z.M. , Salmiati , Ujang, Z. (2016) *Bioresource Technology*

[View all 2 citing documents](#)

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

### Related documents

Effects of co-substrates and inorganic ions on biodegradation of oil-degrading strains

Feng, J. , Zhou, X. (2011) *Advanced Materials Research*

- 3 Friedler, E.  
Quality of individual domestic greywater streams and its implication for on-site treatment and reuse possibilities

(2004) *Environmental Technology*, 25 (9), pp. 997-1008. Cited 126 times.

[View at Publisher](#)

- 4 Lalman, J.A., Bagley, D.M.  
Anaerobic degradation and inhibitory effects of linoleic acid

(2000) *Water Research*, 34 (17), pp. 4220-4228. Cited 105 times.  
doi: 10.1016/S0043-1354(00)00180-9

[View at Publisher](#)

- 5 Tano-Debrah, K., Fukuyama, S., Otonari, N., Taniguchi, F., Ogura, M.  
An inoculum for the aerobic treatment of wastewaters with high concentrations of fats and oils

(1999) *Bioresource Technology*, 69 (2), pp. 133-139. Cited 31 times.  
doi: 10.1016/S0960-8524(98)00181-3

[View at Publisher](#)

- 6 Chipasa, K.B., Mędrzycka, K.  
Behavior of lipids in biological wastewater treatment processes

(2006) *Journal of Industrial Microbiology and Biotechnology*, 33 (8), pp. 635-645. Cited 54 times.  
doi: 10.1007/s10295-006-0099-y

[View at Publisher](#)

- 7 Baig, N., Grenning, E.M.  
The use of bacteria to reduce clogging of sewer lines by grease in municipal sewage  
(1976) *Biological Control of Water Pollution*, pp. 245-253. Cited 5 times.  
Tourbier J, Pierson RW (eds), University of Pennsylvania Press

- 8 Chao, A.C., Yang, W.  
Biological treatment of wool scouring wastewater

(1981) *Journal of the Water Pollution Control Federation*, 53 (3 1), pp. 311-317. Cited 15 times.

- 9 Rinzema, A., Boone, M., Van Knippenberg, K., Lettinga, G.  
Bactericidal effect of long chain fatty acids in anaerobic digestion

(1994) *Water Environment Research*, 66 (1), pp. 40-49. Cited 195 times.

[View at Publisher](#)

- 10 Aluyor, E.O., Obahiagbon, K.O., Ori-Jesu, M.  
Biodegradation of vegetable oils: A review

(2009) *Scientific Research and Essays*, 4 (6), pp. 543-548. Cited 44 times.  
<http://www.academicjournals.org/sre/PDF/pdf2009/Jun/Aluyor%20et%20al.pdf>

- 11 Ergüder, T.H., Güven, E., Demirer, G.N.  
Anaerobic treatment of olive mill wastes in batch reactors

(2000) *Process Biochemistry*, 36 (3), pp. 243-248. Cited 113 times.  
doi: 10.1016/S0032-9592(00)00205-3

[View at Publisher](#)

Degradation and modification of fats, oils and grease by commercial microbial supplements

Brooksbank, A.M., Latchford, J.W., Mudge, S.M.  
(2007) *World Journal of Microbiology and Biotechnology*

Removal of oil and grease from wastewater using natural adsorbents

Abdul Hamid, N.S., Che Malek, N.A., Mokhtar, H.  
(2016) *Jurnal Teknologi*

[View all related documents based on references](#)

[Find more related documents in Scopus based on:](#)

[Authors >](#) [Keywords >](#)

- 12 Kissi, M., Mountadar, M., Assobhei, O., Gargiulo, E., Palmieri, G., Giardina, P., Sannia, G.  
Roles of two white-rot basidiomycete fungi in decolorisation and detoxification of olive mill waste water  
(2001) *Applied Microbiology and Biotechnology*, 57 (1-2), pp. 221-226. Cited 98 times.  
doi: 10.1007/s002530100712  
View at Publisher
- 
- 13 Ettayebi, K., Errachidi, F., Jamaï, L., Tahri-Jouti, M.A., Sendide, K., Ettayebi, M.  
Biodegradation of polyphenols with immobilized *Candida tropicalis* under metabolic induction  
(2003) *FEMS Microbiology Letters*, 223 (2), pp. 215-219. Cited 56 times.  
<http://femsle.oxfordjournals.org/>  
doi: 10.1016/S0378-1097(03)00380-X  
View at Publisher
- 
- 14 Ammar, E., Nasri, M., Medhioub, K.  
Isolation of Enterobacteria able to degrade simple aromatic compounds from the wastewater from olive oil extraction  
(2005) *World Journal of Microbiology and Biotechnology*, 21 (3), pp. 253-259. Cited 41 times.  
doi: 10.1007/s11274-004-3625-y  
View at Publisher
- 
- 15 Maier, R.M.  
Biosurfactants: Evolution and diversity in bacteria  
(2003) *Advances in Applied Microbiology*, 52, pp. 101-121. Cited 69 times.  
<http://www.sciencedirect.com/science/journal/00652164>  
doi: 10.1016/S0065-2164(03)01004-9  
View at Publisher
- 
- 16 Gottschalk, G.  
(1986) *Bacterial Metabolism*. Cited 1296 times.  
2nd Edition. Springer-Verlag. New York
- 
- 17 Zubay, G.  
(1998) *Biochemistry*. Cited 438 times.  
4th Edition. Wm. C. Brown Publishers, Dubuque, IA
- 
- 18 Kleyn, Bicknell  
(2005) *Microbiology Experiments: A Health Science Perspective*. Cited 4 times.  
McGraw-Hill Higher Education
- 
- 19 Čipinytė, V., Grigiškis, S., Šapokaitė, D., Baškys, E.  
Production of bio surfactance by Arthrobactersp. Hydrocarbon degrading bacterium environment.  
Technology Resources  
(2011) *Proceedings of the 8Th International Scientific and Practical Conference*, 1.
- 
- 20 Mudili  
(2007) *Jayababu Mudili, Introductory Practical Microbiology*  
Alpha Science International Limited

□ 21 Thomsan, J.N.  
(1999) *Microbiology Lab Manual Williams & Wilkins*  
Baltimore, MD

□ 22 Bergey, D.H., Krieg, N.R., Holt, J.G.  
(1984) *Bergey's Manual of Systematic Bacteriology*. Cited 5821 times.  
Williams & Wilkins. Baltimore, MD

□ 23 Pepe, O., Blaiotta, G., Moschetti, G., Greco, T., Villani, F.  
**Rope-producing strains of *Bacillus* spp. from wheat bread and strategy for their control by lactic acid bacteria**  
  
(2003) *Applied and Environmental Microbiology*, 69 (4), pp. 2321-2329. Cited 63 times.  
doi: 10.1128/AEM.69.4.2321-2329.2003  
  
[View at Publisher](#)

🔍 Alkhatib, M.F.; Bioenvironmental Engineering Research Center (BERC), Biotechnology Engineering Department, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia  
© Copyright 2015 Elsevier B.V., All rights reserved.

< Back to results | 1 of 1

^ Top of page

## About Scopus

[What is Scopus](#)  
[Content coverage](#)  
[Scopus blog](#)  
[Scopus API](#)  
[Privacy matters](#)

## Language

[日本語に切り替える](#)  
[切换到简体中文](#)  
[切换到繁體中文](#)  
[Русский язык](#)

## Customer Service

[Help](#)  
[Contact us](#)

ELSEVIER

[Terms and conditions](#) [Privacy policy](#)

Copyright © 2017 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

Cookies are set by this site. To decline them or learn more, visit our [Cookies page](#).

 RELX Group™