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Study on physiochemical properties and the halalness of commercially marketed vinegar in Malaysia (Article)

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Abstract

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Vinegar is very popular as traditional ingredient for cooking, pickling, and preservation. It is made from sugar or starch by an alcoholic and acetous fermentation and produces ethanol as a by-product. Alcohol is prohibited to be consumed for Muslim or used as ingredient if it is exceeding the allowable limit as stated by Islamic Council in Malaysia . According to Fatwa Committee National Council of Islamic Religious Affairs Malaysia , natural occurrences of ethanol in food products are acceptable if the ethanol contents are less than 1% in beverages and 0.5% for flavoring or coloring substances for the purpose of stabilization. On the other hand, for specific vinegar product, as stated by Malaysian Food Act and Regulation, acetic acid content must be at least 4%. According to FAO/WHO, a product is to be labelled as vinegar if the acetic acid content is 6% and with a maximum residual alcohol content of 0.5%v/v for wine vinegar and 1%v/v for other vinegars. This study investigated the physiochemical properties of the vinegar from different sources of raw materials. Total solubility (TA) by using Brix method, pH, and alcohol and acetic acid content by GC-TOF/MS of 12 commercial vinegars from Malaysia and abroad were studied. The result shown that for pH value of commercial vinegar are ranged from 2.51-3.14°Brix from 2.10-40.73°Brix, acetic acid is ranged from 0.0253-0.1276% and ethanol content from 0-0.5911%. Thus, this study will come out with the clear observation on ethanol content in fermented product which is vinegar in order to categories the halalness of the product that available in Malaysia market especially the ones that are produced internationally. Lastly, as shown by the profiling study , vinegar that are imported internationally may contain some amount of alcohol in contrast with the one that locally produced in Malaysia and has Halal certification.

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(2018) Indian Journal of Public Health Research and Development

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Elmi, C.
(2015) European Food Research and Technology

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(2014) Analytica Chimica Acta

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1 Adam, M., Zawadzki, W., Bruzewicz, S., Graczyk, S., Czerski, A.
Effect of Formic and Propionic Acid Mixture on Escherichia Coli in Fish Meal Stored at 12°C
(2004) *Pakistan Journal of Nutrition*, 3 (6), pp. 353-356. Cited 11 times.

2 Aurand, L.W., Wood, A.E., Wells, M.R.
(1987) *Food Composition and Analysis*, pp. 20-23. Cited 109 times.
New York: Van Nostrand Reinhold

3 Budak, N.H., Aykin, E., Seydim, A.C., Greene, A.K., Guzel-Seydim, Z.B.
Functional Properties of Vinegar

(2014) *Journal of Food Science*, 79 (5), pp. R757-R764. Cited 69 times.
http://www3.interscience.wiley.com/journal/118509799/issueyear?year=2008
doi: 10.1111/1750-3841.12434

View at Publisher

4 Chen, G.-L., Zheng, F.-J., Sun, J., Li, Z.-C., Lin, B., Li, Y.-R.
Production and Characteristics of High Quality Vinegar from Sugarcane Juice

(2015) *Sugar Tech*, 17 (1), pp. 89-93. Cited 5 times.
http://www.springer.com/life+sci/agriculture/journal/12355
doi: 10.1007/s12355-014-0352-z

View at Publisher

5 Company, C.
(2005)
1 Strawberry Lane Orrville, Ohio 44667. Retrieved from
http://www.crisco.com/basics/all_about/vinegar.asp

6 Ould El Hadj, D.
Hygienic Quality and Physicochemical Characteristic of vinegar Traditional of same varieties of dates
(2001) *Production and Valorization-Biomass*, 87, pp. 87-92.
A.S. and O.S.

7 (2011) *Alkohol Dalam Makanan, Minuman, Pewangi Dan Ubat-Ubatan*. Cited 3 times.
Retrieved September, 4, 2013 from
http://www.e-fatwa.gov.my/fatwa-kebangsaan/alkohol-dalam-makanan-minuman-pewangi-dan-ubat-ubatan

8 (2000) *Proposed draft Revised Regional Standard for Vinegar*, pp. 1-5. Cited 3 times.
Rome. Retrieved from
http://www.justice.gov.md/file/Centruldearmonizarealegislatiei/Bazadedate/Materiale2008/Legislatie/Acquis/RO/CodulAlimentarprivindOtetul.PDF

9 Hagmann, P., Cammoun, L., Gigandet, X., Meuli, R., Honey, C.J., Van Wedeen, J., Sporns, O.
Mapping the structural core of human cerebral cortex (Open Access)

(2008) *PLoS Biology*, 6 (7), art. no. e159, pp. 1479-1493. Cited 2246 times.
http://biology.plosjournals.org/archive/1545-7885/6/7/pdf/10.1371_journal.pbio.0060159-L.pdf
doi: 10.1371/journal.pbio.0060159

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10 Hufnagel, L., Brockmann, D., Geisel, T.
Forecast and control of epidemics in a globalized world (Open Access)

(2004) *Proceedings of the National Academy of Sciences of the United States of America*, 101 (42), pp. 15124-15129. Cited 573 times.
doi: 10.1073/pnas.0308344101

View at Publisher

11 Jamaludin, M.A., Hashim, D.M., Rahman, R.A., Ramli, M.A., Majid, M.Z.A., Othman, R., Amin, A.
Determination of permissible alcohol and vinegar in Shariah and scientific perspectives

(2016) *International Food Research Journal*, 23 (6), pp. 2737-2743. Cited 3 times.
http://www.ifrj.upm.edu.my/23%20(06)%202016/(61).pdf

12 Jang, Y.K., Lee, M.Y., Kim, H.Y., Lee, S., Yeo, S.H., Baek, S.Y., Lee, C.H.
Comparison of traditional and commercial vinegars based on metabolite profiling and antioxidant activity

(2015) *Journal of Microbiology and Biotechnology*, 25 (2), pp. 217-226. Cited 8 times.
http://www.jmb.or.kr/journal/download.php?Filedir=../submission/Journal/025/&num=6660
doi: 10.4014/jmb.1408.08021

View at Publisher

13 Jo, Y., Baek, J.-Y., Jeong, I.-Y., Jeong, Y.-J., Yeo, S.-H., Noh, B.S., Kwon, J.-H.
Physicochemical properties and volatile components of wine vinegars with high acidity based on fermentation stage and initial alcohol concentration

(2015) *Food Science and Biotechnology*, 24 (2), pp. 445-452. Cited 4 times.
http://www.springerlink.com/content/n3031612t262/
doi: 10.1007/s10068-015-0059-2

View at Publisher

14 Lingham, T.
Antimicrobial Activity of Vinegar on Bacterial Species Isolated from Retail and Local Channel Catfish (Ictalurus punctatus)
(2013) *Journal of Food Processing and Technology*, 1, pp. 1-5. Cited 12 times.

15 Liu, Y.-d., Ying, Y.-b., Fu, X., Lu, H.
Experiments on predicting sugar content in apples by FT-NIR Technique

(2007) *Journal of Food Engineering*, 80 (3), pp. 986-989. Cited 72 times.
doi: 10.1016/j.jfoodeng.2006.06.035

View at Publisher

16 Masino, F., Chinnici, F., Bendini, A., Montevecchi, G., Antonelli, A.
A study on relationships among chemical, physical, and qualitative assessment in traditional balsamic vinegar

(2008) *Food Chemistry*, 106 (1), pp. 90-95. Cited 44 times.
doi: 10.1016/j.foodchem.2007.05.069

View at Publisher

17 Ophardt, C.E.
(2003) *Acids and Bases*
Virtual Chembook, Elmhurst College. Retrieved from
http://chemistry.elmhurst.edu/vchembook/184ph.html

18 Petsiou, E., Mitrou, P., Papakonstantinou, E., Maratou, E., Lambadiari, V., Spanoudi, F., Dimitriadis, G.
Acetic acid enhances insulin-stimulates glucose uptake by the forearm muscle in patients with type 2 diabetes
(2015) *Diabetologia*, 58 (1), pp. S254-S255. Cited 2 times.

19 Sadler, G.D., Murphy, P.A.
pH and Titratable Acidity
(2010) *Food Analysis*, pp. 219-238. Cited 58 times.
Nielson S.S. (Ed.), New York, USA: Springer Science + Business Media

20 Solieri, L., Giudici, P.
Yeasts associated to Traditional Balsamic Vinegar: Ecological and technological features
(2008) *International Journal of Food Microbiology*, 125 (1), pp. 36-45. Cited 49 times.
doi: 10.1016/j.ijfoodmicro.2007.06.022
View at Publisher

21 Underhill, J.E.
(1989) *pH without pain*
Retrieved from, The Grapevine website
http://www.bcawa.ca/winemaking/ph.htm

22 Wong, G.Z.
(2013) *Production of Natural Vinegar from over ripe pineapple biology essay*, pp. 1-20.
Retrieved from
https://www.uniassignment.com/essay-samples/biology/production-of-natural-vinegar-from-over-ripe-pineapple-biology-essay.php

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