


Mokuzai Gakkaishi  JWRS
The Japan Wood Research Society

[Available Issues](#) | [Japanese](#) >> [Publisher Site](#)

Author: Keyword: [ADVANCED](#)



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1880-7577

PRINT ISSN : 0021-4795

Mokuzai Gakkaishi

Vol. 51 (2005) , No. 3 p.180-188



[\[Image PDF \(966K\)\]](#) [\[References\]](#)

Basic Study for Establishing Specifications for Wood Vinegar by distillation I.

Study of regulations and reproducibility of compounds contained in distilled wood vinegar

Takaaki HIGASHINO¹⁾, Akira SHIBATA¹⁾ and Mitsuyoshi YATAGAI²⁾

1) Taiko TEC Co., Ltd.

2) Graduate School of Agriculture and Life Science, The University of Tokyo

(Received November 12, 2003)

(Accepted October 27, 2004)

Abstract: In the consumer market, a specification for wood vinegar has not yet been established due to many different methods of production and kinds of raw material. As wood vinegar becomes more accepted in the consumer market, a standard specification is needed to guarantee safety and effectiveness. Currently there is no specification for quantifying the constituents of wood vinegar. This study was conducted to determine standard proportions and reproducibility of the constituents of distilled wood vinegar produced by a controlled distilling method. We examined a method of distillation which offered the possibility of establishing a stable specification for the proportions of the constituents. Based on this study we discussed the possibility of establishing an official quality specification for distilled wood vinegars. Five hundred and fifty-one samples of distilled wood vinegar were used in this study. Fifteen constituents were selected from all of the constituents of distilled wood vinegar. The proportion of constituents was investigated in order to determine the existence of a standard proportion and its reproducibility.

The following results were obtained.

- 1) The deviations of the constituent proportions of 13 compounds out of 15 showed a normal distribution.
- 2) A regular rule was found for the relationship between the change of

concentration of acetic acid and that of the constituent proportion.

3) The deviation of the constituent proportion of each compound was investigated as to whether it was within the range of three standard deviations, which is generally recognized as a control limit. In 93.6% of the samples, all 15 compounds satisfied this range.

Furthermore, 15 compounds contained in wood vinegar before distillation were assayed, and their deviation was compared with that of distilled wood vinegar. As a result, the deviation of the compounds contained in distilled wood vinegar was about 1/4 of that in the undistilled wood vinegar. These results suggest the possibility of establishing an official specification for distilled wood vinegar, which is produced by a standard controlled distilling method, through the assay of each compound and its quality control in accordance with a quality specification.

Keywords: pyrolygneous acid, wood pyrolysis water, wood vinegar

[\[Image PDF \(966K\)\]](#) [\[References\]](#)



Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Takaaki HIGASHINO, Akira SHIBATA and Mitsuyoshi YATAGAI: Mokuzaigakkaishi Vol. 51, No. 3, 180-188 (2005) .

doi:10.2488/jwrs.51.180

JOI JST.JSTAGE/jwrs/51.180

Copyright (c) 2006 by The Japan Wood Research Society



[Japan Science and Technology Information Aggregator, Electronic](#)

