

**Characterization of Metallic Flavor in Drinking Water:
An Interdisciplinary Exploration through
Sensory Science, Medicine, Health, and the Environment**

By
Susan Mirlohi

Dissertation submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

**Doctor of Philosophy
in
Civil Engineering**

Andrea M. Dietrich, Chair
Susan E. Duncan
Brenda M. Davy
Daniel L. Gallagher
Gregory D. Boardman

February 22, 2012
Blacksburg, Virginia

Keywords: Drinking Water, Metallic Flavor, Iron, Lipid Oxidation,
Taste & Smell Disorders, Beverage Intake

Copyright © 2012, Susan Mirlohi

Copyright Permission Documentation

Chapter III - Age-Associated Variation in Sensory Perception of Iron in Drinking Water and the Potential for Overexposure in the Human Population



Title: Age-Associated Variation in Sensory Perception of Iron in Drinking Water and the Potential for Overexposure in the Human Population

Author: Susan Mirlohi et al.

Publication: Environmental Science & Technology

Publisher: American Chemical Society

Date: Aug 1, 2011

Copyright © 2011, American Chemical Society

Logged in as:

Susan Mirlohi

Account #:

3000497469

LOGOUT

PERMISSION/LICENSE IS GRANTED FOR YOUR ORDER AT NO CHARGE

This type of permission/license, instead of the standard Terms & Conditions, is sent to you because no fee is being charged for your order. Please note the following:

- Permission is granted for your request in both print and electronic formats.
- If figures and/or tables were requested, they may be adapted or used in part.
- Please print this page for your records and send a copy of it to your publisher/graduate school.
- Appropriate credit for the requested material should be given as follows: "Reprinted (adapted) with permission from (COMPLETE REFERENCE CITATION). Copyright (YEAR) American Chemical Society." Insert appropriate information in place of the capitalized words.
- One-time permission is granted only for the use specified in your request. No additional uses are granted (such as derivative works or other editions). For any other uses, please submit a new request.

BACK

CLOSE WINDOW

Copyright © 2012 [Copyright Clearance Center, Inc.](#) All Rights Reserved. [Privacy statement.](#)

Comments? We would like to hear from you. E-mail us at customer care@copyright.com

Chapter II – Figures and Tables

Figures:

2.1, 2.5, 2.7, 2.8, 2.9 (Copyright Clearance Center, Inc.)
2.3 (Author: Andrea M. Dietrich),
2.1 and 2.4 (Public domain),

Tables:

2.2
2.3 (Copyright Clearance Center, Inc.),

Figure 2.1

ELSEVIER LICENSE TERMS AND CONDITIONS

Mar 05, 2012

This is a License Agreement between Susan Mirlohi ("You") and Elsevier ("Elsevier") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by Elsevier, and the payment terms and conditions.

All payments must be made in full to CCC. For payment instructions, please see information listed at the bottom of this form.

Supplier

Elsevier Limited
The Boulevard, Langford Lane
Kidlington, Oxford, OX5 1GB, UK

Registered Company Number

1982084

Customer name

Susan Mirlohi

Customer address

Virginia Tech

Blacksburg, VA 24061

License number

2862601420304

License date

Mar 05, 2012

Licensed content publisher

Elsevier

Licensed content publication

Current Biology

Licensed content title

Mammalian taste perception

Licensed content author

Paul A.S. Breslin, Alan C. Spector

Licensed content date

26 February 2008

Licensed content volume number

18

Licensed content issue number

4

Number of pages

8

Start Page

R148

End Page

R155

Type of Use

reuse in a thesis/dissertation

Portion

figures/tables/illustrations

Number of figures/tables/illustrations

1

Format

electronic

Are you the author of this Elsevier article?

No

Will you be translating?

No

Order reference number

Title of your thesis/dissertation

Characterization of Metallic Flavor in Drinking Water: An Interdisciplinary Exploration through Sensory Science, Medicine, Health, and the Environment

Expected completion date

Mar 2012

Estimated size (number of pages)

209

Elsevier VAT number

GB 494 6272 12

Permissions price

0.00 USD

VAT/Local Sales Tax

0.0 USD / 0.0 GBP

Total

0.00 USD

ELSEVIER LICENSE
TERMS AND CONDITIONS
Mar 05, 2012

Figures: 2.7, 2.8, and 2.9

This is a License Agreement between Susan Mirlohi ("You") and Elsevier ("Elsevier") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by Elsevier, and the payment terms and conditions.

All payments must be made in full to CCC. For payment instructions, please see information listed at the bottom of this form.

Supplier

Elsevier Limited

The Boulevard, Langford Lane

Kidlington, Oxford, OX5 1GB, UK

Registered Company Number

1982084

Customer name

Susan Mirlohi

Customer address

Virginia Tech

Blacksburg, VA 24061

License number

2862610837876

License date

Mar 05, 2012

Licensed content publisher

Elsevier

Licensed content publication

Journal of Pharmaceutical and Biomedical Analysis

Licensed content title

Analytical methods for trace levels of reactive carbonyl compounds formed in lipid peroxidation systems

Licensed content author

T. Shibamoto

Licensed content date

11 April 2006

Licensed content volume number

41

Licensed content issue number

1

Number of pages

14

Start Page

12

End Page

25

Type of Use

reuse in a thesis/dissertation

Intended publisher of new work

other

Portion

figures/tables/illustrations

Number of figures/tables/illustrations

3

Format

electronic

Are you the author of this Elsevier article?

No

Will you be translating?

No

Order reference number

Title of your thesis/dissertation

Characterization of Metallic Flavor in Drinking Water: An Interdisciplinary Exploration through Sensory Science, Medicine, Health, and the Environment

Expected completion date

Mar 2012

Estimated size (number of pages)

209

Elsevier VAT number

GB 494 6272 12

Permissions price

0.00 USD

VAT/Local Sales Tax

0.0 USD / 0.0 GBP

Total

0.00 USD

Terms and Conditions

Table 2.3

ELSEVIER LICENSE TERMS AND CONDITIONS

Mar 06, 2012

This is a License Agreement between Susan Mirlohi ("You") and Elsevier ("Elsevier") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by Elsevier, and the payment terms and conditions.

All payments must be made in full to CCC. For payment instructions, please see information listed at the bottom of this form.

Supplier

Elsevier Limited
The Boulevard, Langford Lane
Kidlington, Oxford, OX5 1GB, UK

Registered Company Number

1982084

Customer name

Susan Mirlohi

Customer address

Virginia Tech

Blacksburg, VA 24061

License number

2863230383057

License date

Mar 06, 2012

Licensed content publisher

Elsevier

Licensed content publication

European Journal of Internal Medicine

Licensed content title

Drug-induced taste disorders

Licensed content author

B. Sadananda Naik,Nagaraj Shetty,E.V.S. Maben

Licensed content date

June 2010

Licensed content volume number

21

Licensed content issue number

3

Number of pages

4

Start Page

240

End Page

243

Type of Use

reuse in a thesis/dissertation

Intended publisher of new work

other

Portion

figures/tables/illustrations

Number of figures/tables/illustrations

1

Format

electronic

Are you the author of this Elsevier article?

No

Will you be translating?

No

Order reference number

Title of your thesis/dissertation

Characterization of Metallic Flavor in Drinking Water: An Interdisciplinary Exploration through Sensory Science, Medicine, Health, and the Environment

Expected completion date

Mar 2012

Estimated size (number of pages)

209

Elsevier VAT number

GB 494 6272 12

Permissions price

0.00 USD

VAT/Local Sales Tax

0.00 USD / 0.0 GBP

Total

0.00 USD

Terms and Conditions

Figures 2.4 and 2.5

Figure 2.4. Illustration of the major human salivary glands.
(<http://training.seer.cancer.gov/head-neck/anatomy/salivary.html>)

Figure 2.5. Enzyme mediated pathways of lipid oxidation.
[Source: http://en.wikipedia.org/wiki/File:Eicosanoid_synthesis.svg]; used with permission: “Public Domain”

Licensing

*This work is in the **public domain** in the United States because it is a **work of the United States Federal Government** under the terms of Title 17, Chapter 1, Section 105 of the **US Code**. See **Copyright**.*

Note: This only applies to works of the Federal Government and not to the work of any individual **U.S. state, territory, commonwealth, county, municipality, or any other subdivision**. This template also does not apply to postage stamp designs published by the **United States Postal Service since 1978**. (See **206.02(b) of Compendium II: Copyright Office Practices**). It also does not apply to certain US coins, see **The US Mint Terms of Use**.



[العربية](#) | [Беларуская \(тарашкевіца\)](#) | [Български](#) | [বাংলা](#) | [Català](#) | [Česky](#) | [Deutsch](#) | [English](#) | [Esperanto](#) | [Español](#) | [Eesti](#) | [Euskara](#) | [فارسی](#) | [Suomi](#) | [Français](#) | [Magyar](#) | [Italiano](#) | [日本語](#) | [한국어](#) | [Македонски](#) | [മലയാളം](#) | [Plattdüütsch](#) | [Nederlands](#) | [Polski](#) | [Português](#) | [Português do Brasil](#) | [Русский](#) | [ไทย](#) | [Türkçe](#) | [Vèneto](#) | [中文](#) | [中文\(简体\)](#) | [中文\(繁體\)](#) | [+/-](#)

[This file has been identified as being free of known restrictions under copyright law, including all related and neighboring rights.](#)

Figure 5.1

ELSEVIER LICENSE
TERMS AND CONDITIONS

Mar 06, 2012

This is a License Agreement between Susan Mirlohi ("You") and Elsevier ("Elsevier") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by Elsevier, and the payment terms and conditions.

All payments must be made in full to CCC. For payment instructions, please see information listed at the bottom of this form.

Supplier

Elsevier Limited
The Boulevard, Langford Lane
Kidlington, Oxford, OX5 1GB, UK

Registered Company Number

1982084

Customer name

Susan Mirlohi

Customer address

Virginia Tech

Blacksburg, VA 24061

License number

2863220459597

License date

Mar 06, 2012

Licensed content publisher

Elsevier

Licensed content publication

Journal of the American Dietetic Association

Licensed content title

The Beverage Intake Questionnaire: Determining Initial Validity and Reliability

Licensed content author

Valisa E. Hedrick,Dana L. Comber,Paul A. Estabrooks,Jyoti Savla,Brenda M. Davy

Licensed content date

August 2010

Licensed content volume number

110

Licensed content issue number

8

Number of pages

6

Start Page

1227

End Page

1232

Type of Use

reuse in a thesis/dissertation

Intended publisher of new work

other

Portion

figures/tables/illustrations

Number of figures/tables/illustrations

1

Format

electronic

Are you the author of this Elsevier article?

No

Will you be translating?

No

Order reference number

Title of your thesis/dissertation

Characterization of Metallic Flavor in Drinking Water: An Interdisciplinary Exploration through Sensory Science, Medicine, Health, and the Environment

Expected completion date

Mar 2012

Estimated size (number of pages)

209

Elsevier VAT number

GB 494 6272 12

Permissions price

0.00 USD

VAT/Local Sales Tax

0.0 USD / 0.0 GBP

Total

0.00 USD

Terms and Conditions

Terms and Conditions

INTRODUCTION

1. The publisher for this copyrighted material is Elsevier. By clicking "accept" in connection with completing this licensing transaction, you agree that the following terms and conditions apply to this transaction (along with the Billing and Payment terms and conditions established by Copyright Clearance Center, Inc. ("CCC"), at the time that you opened your Rightslink account and that are available at any time at <http://myaccount.copyright.com>).

GENERAL TERMS

2. Elsevier hereby grants you permission to reproduce the aforementioned material subject to the terms and conditions indicated.

3. Acknowledgement: If any part of the material to be used (for example, figures) has appeared in our publication with credit or acknowledgement to another source, permission must also be sought from that source. If such permission is not obtained then that material may not be included in your publication/copies. Suitable acknowledgement to the source must be made, either as a footnote or in a reference list at the end of your publication, as follows:

“Reprinted from Publication title, Vol /edition number, Author(s), Title of article / title of chapter, Pages No., Copyright (Year), with permission from Elsevier [OR APPLICABLE SOCIETY COPYRIGHT OWNER].” Also Lancet special credit - “Reprinted from The Lancet, Vol. number, Author(s), Title of article, Pages No., Copyright (Year), with permission from Elsevier.”

4. Reproduction of this material is confined to the purpose and/or media for which permission is hereby given.

5. Altering/Modifying Material: Not Permitted. However figures and illustrations may be altered/adapted minimally to serve your work. Any other abbreviations, additions, deletions and/or any other alterations shall be made only with prior written authorization of Elsevier Ltd. (Please contact Elsevier at permissions@elsevier.com)

6. If the permission fee for the requested use of our material is waived in this instance, please be advised that your future requests for Elsevier materials may attract a fee.

7. Reservation of Rights: Publisher reserves all rights not specifically granted in the combination of (i) the license details provided by you and accepted in the course of this licensing transaction, (ii) these terms and conditions and (iii) CCC's Billing and Payment terms and conditions.

8. License Contingent Upon Payment: While you may exercise the rights licensed immediately upon issuance of the license at the end of the licensing process for the transaction, provided that you have disclosed complete and accurate details of your proposed use, no license is finally effective unless and until full payment is received from you (either by publisher or by CCC) as provided in CCC's Billing and Payment terms and conditions. If full payment is not received on a timely basis, then any license preliminarily granted shall be deemed automatically revoked and shall be void as if never granted. Further, in the event that you breach any of these terms and conditions or any of CCC's Billing and Payment terms and conditions, the license is automatically revoked and shall be void as if never granted. Use of materials as described in a revoked license, as well as any use of the materials beyond the scope of an unrevoked license, may constitute copyright infringement and publisher reserves the right to take any and all action to protect its copyright in the materials.

9. Warranties: Publisher makes no representations or warranties with respect to the licensed material.

10. Indemnity: You hereby indemnify and agree to hold harmless publisher and CCC, and their respective officers, directors, employees and agents, from and against any and all claims arising out of your use of the licensed material other than as specifically authorized pursuant to this license.

11. No Transfer of License: This license is personal to you and may not be sublicensed, assigned, or transferred by you to any other person without publisher's written permission.

12. No Amendment Except in Writing: This license may not be amended except in a writing signed by both parties (or, in the case of publisher, by CCC on publisher's behalf).

13. Objection to Contrary Terms: Publisher hereby objects to any terms contained in any purchase order, acknowledgment, check endorsement or other writing prepared by you, which terms are inconsistent with these terms and conditions or CCC's Billing and Payment terms and conditions. These terms and conditions, together with CCC's Billing and Payment terms and conditions (which are incorporated herein), comprise the entire agreement between you and publisher (and CCC) concerning this licensing transaction. In the event of any conflict between your obligations established by these terms and conditions and those established by CCC's Billing and Payment terms and conditions, these terms and conditions shall control.

14. Revocation: Elsevier or Copyright Clearance Center may deny the permissions described in this License at their sole discretion, for any reason or no reason, with a full refund payable to you. Notice of such denial will be made using the contact information provided by you. Failure to receive such notice will not alter or invalidate the denial. In no event will Elsevier or Copyright Clearance Center be responsible or liable for any costs, expenses or damage incurred by you as a result of a denial of your permission request, other than a refund of the amount(s) paid by you to Elsevier and/or Copyright Clearance Center for denied permissions.

LIMITED LICENSE

The following terms and conditions apply only to specific license types:

15. Translation: This permission is granted for non-exclusive world English rights only unless your license was granted for translation rights. If you licensed translation rights you may only translate this content into the languages you requested. A professional translator must perform all translations and reproduce the content word for word preserving the integrity of the article. If this license is to re-use 1 or 2 figures then permission is granted for non-exclusive world rights in all languages.

16. Website: The following terms and conditions apply to electronic reserve and author websites:

Electronic reserve: If licensed material is to be posted to website, the web site is to be password-protected and made available only to bona fide students registered on a relevant course if:

This license was made in connection with a course,

This permission is granted for 1 year only. You may obtain a license for future website posting,

All content posted to the web site must maintain the copyright information line on the bottom of each image,

A hyper-text must be included to the Homepage of the journal from which you are licensing at

<http://www.sciencedirect.com/science/journal/xxxxx> or the Elsevier homepage for books at <http://www.elsevier.com>, and

Central Storage: This license does not include permission for a scanned version of the material to be stored in a central repository such as that provided by Heron/XanEdu.

17. Author website for journals with the following additional clauses:

All content posted to the web site must maintain the copyright information line on the bottom of each image, and the permission granted is limited to the personal version of your paper. You are not allowed to download and post the published electronic version of your article (whether PDF or HTML, proof or final version), nor may you scan the printed edition to create an electronic version,

A hyper-text must be included to the Homepage of the journal from which you are licensing at

<http://www.sciencedirect.com/science/journal/xxxxx>, As part of our normal production process, you will receive an e-mail notice when your article appears on Elsevier's online service ScienceDirect (www.sciencedirect.com). That e-mail will include the article's Digital Object Identifier (DOI). This number provides the electronic link to the published article and should be included in the posting of your personal version. We ask that you wait until you receive this e-mail and have the DOI to do any posting.

Central Storage: This license does not include permission for a scanned version of the material to be stored in a central repository such as that provided by Heron/XanEdu.

18. Author website for books with the following additional clauses:

Authors are permitted to place a brief summary of their work online only.

A hyper-text must be included to the Elsevier homepage at <http://www.elsevier.com>

All content posted to the web site must maintain the copyright information line on the bottom of each image

You are not allowed to download and post the published electronic version of your chapter, nor may you scan the printed edition to create an electronic version.

Central Storage: This license does not include permission for a scanned version of the material to be stored in a central repository such as that provided by Heron/XanEdu.

19. Website (regular and for author): A hyper-text must be included to the Homepage of the journal from which you are licensing at <http://www.sciencedirect.com/science/journal/xxxxx>. or for books to the Elsevier homepage at <http://www.elsevier.com>

20. Thesis/Dissertation: If your license is for use in a thesis/dissertation your thesis may be submitted to your institution in either print or electronic form. Should your thesis be published commercially, please reapply for permission. These requirements include permission for the Library and Archives of Canada to supply single copies, on demand, of the complete thesis and include permission for UMI to supply single copies, on demand, of the complete thesis. Should your thesis be published commercially, please reapply for permission.

21. Other Conditions:

v1.6

If you would like to pay for this license now, please remit this license along with your payment made payable to "COPYRIGHT CLEARANCE CENTER" otherwise you will be invoiced within 48 hours of the license date. Payment should be in the form of a check or money order referencing your account number and this invoice number RLNK500732742.

Once you receive your invoice for this order, you may pay your invoice by credit card. Please follow instructions provided at that time.

Make Payment To:
Copyright Clearance Center
Dept 001
P.O. Box 843006
Boston, MA 02284-3006

For suggestions or comments regarding this order, contact RightsLink Customer Support: customer@copyright.com or +1-877-622-5543 (toll free in the US) or +1-978-646-2777.

Gratis licenses (referencing \$0 in the Total field) are free. Please retain this printable license for your reference. No payment is required.

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlohi

Description of item under review for fair use: Figure 2.1. Schematic of human oral cavity, taste receptor cells, and taste buds.
Source: Breslin PAS, Spector AC. 2008. Mammalian taste perception. *Curr Biol* 18(4): R148-R155.

Report generated on: 03-05-2012 at : 14:29:17

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlohi

Description of item under review for fair use: Figure 2.3. Schematic of human olfactory system. Source: Faculty Adviser, Andrea M. Dietrich. Publication source: Dietrich AM. 2009. The sense of smell: contributions of orthonasal and retronasal perception applied to metallic flavor of drinking water. *J Water Supply Res Technol-Aqua* 58(8): 562-570.

Report generated on: 03-07-2012 at : 10:47:15

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlohi

Description of item under review for fair use: Figure 2.4. Illustration of the major human salivary glands. (<http://training.seer.cancer.gov/head-neck/anatomy/salivary.html>), used with permission: "Public Domain"

Report generated on: 03-05-2012 at : 14:42:13

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *against fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlohi

Description of item under review for fair use: Figure 2.5. Enzyme mediated pathway of lipid oxidation. Source: [Source: http://en.wikipedia.org/wiki/File:Eicosanoid_synthesis.svg]; used with permission: "Public Domain"

Report generated on: 03-07-2012 at : 10:41:48

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *against fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlohi

Description of item under review for fair use: Figures: 2.7, 2.8, and 2.9 Source: Shibamoto T. 2006. Analytical methods for trace levels of reactive carbonyl compounds formed in lipid peroxidation systems. *Journal of Pharmaceutical and Biomedical Analysis* 41: 12-25.

Report generated on: 03-05-2012 at : 14:39:11

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlohi

Description of item under review for fair use: Figure 5.1. The beverage intake questionnaire (BEVQ). Source: Hedrick VE, Comber DL, Estabrooks PA, Savia J, Davy BM. 2010. The Beverage Intake Questionnaire: Determining Initial Validity and Reliability. *J Am Diet Assoc* 110(8): 1227-1232.

Report generated on: 03-07-2012 at : 10:59:40

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlohi

Description of item under review for fair use: Table 2.2. Medications that have been known to alter taste and/or smell functions. Doty RL, Shah M, Bromley SM. 2008. Drug-induced taste disorders. Drug Saf 31(3): 199-215.

Report generated on: 03-07-2012 at : 10:54:19

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

Draft 09/01/2009

(Questions? Concerns? Contact Gail McMillan, Director of the Digital Library and Archives at Virginia Tech's University Libraries: gailmac@vt.edu)

(Please ensure that Javascript is enabled on your browser before using this tool.)

Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Susan Mirlolhi

Description of item under review for fair use: Table 2.3. Medical conditions associated with taste disorders. Source: Naik BS, Shetty N, Maben EVS. 2010. Drug-induced taste disorders. *European Journal of Internal Medicine* 21(2010): 240-243.

Report generated on: 03-07-2012 at : 10:50:46

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*