

Impact of magnetic water treatments on citrus cultivation under abiotic stress

Water treatment and cultivation under abiotic stress

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**Abstract(Subhead 1: Arial, Size 12, UPPERCASE, Bold)**

*The impact of climate change, increasing prevalence of drought and population growth are the main factors limiting agricultural production. Therefore, to prevent food security in arid and semi-arid areas from being subject to climatic hazards, optimal water management is essential. To surmount this problem, research is focused on innovation likely to improve efficiency, protect the environment and the water resources. In order to overcome the problems of contaminated water and salinization problems, the researchers are proposing a new technique based on a magnetic field. Thus, magnetized water used for irrigation can improve water productivity, and increase the production of agricultural crops, thus conserving the water supply for the future in view of the expected global water scarcity. In this context, this chapter is proposed in order to study the characteristics linked to magnetic treatments. This treatment is carried out on irrigation water by studying the parameters of water quality and the yield of citrus agricultural crops.*

Keywords: Word One, Word Two, Word Three

INTRODUCTION(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Récemment, les ressources en eau appauvries et l’augmentation de la demande alimentaire pour couvrir les besoins humains sont les problèmes les plus critiques rencontrés dans le monde. L'eau à l'échelle mondiale est abondante, 97% est salée, 2,25% est piégé dans les glaciers et de la glace, il ne reste que 0,75% dans les aquifères, rivières et lacs d'eau douce. La majeure partie de cette eau douce (69%) est utilisée pour la production agricole, 23% pour l’industrie et 8% pour l’usage domestiques (M. M. Selim, 2008).

Le méditerranéen présente des ressources en eau avec un enjeu important dans le domaine de l’agriculture, l’eau potable et l’industrie. Il est à signaler que dans la région l’agriculture représente l’activité la plus consommatrice d’eau. Cependant, la rareté des ressources en eau, aussi bien en qualité qu’en quantité, ainsi que sa répartition dans le temps et l’espace, sont parmi les principaux facteurs qui limitent le développement de l’agriculture.

Ce problème s’intensifie avec les récents changements climatiques. En effet, la recherche s’oriente de plus en plus vers des stratégies qui visent la préservation, la conservation et la valorisation aussi bien de la quantité que la qualité de ces ressources en eau, voire des innovations susceptibles d’améliorer l’efficience et la productivité de l’eau d’irrigation.

Afin de répondre à ce besoin urgent d’économie de l’eau, plusieurs techniques et approches sont employés, techniques hydrauliques (système d’irrigation, dose et fréquence des irrigations, drainage,..), techniques biologiques (variétés de plantes tolérantes à la salinité, apport de matière organique, etc...), techniques physiques (amendement de terre), techniques chimiques (apport de gypse, etc.).

Dans cette étude, une nouvelle technologie basée sur le traitement magnétique des eaux, peut constituer une solution de recours permettant la valorisation de ces eaux en agriculture et principalement sur la culture de citrus.

Cette nouvelle approche semble être écologique et non couteuse pour le traitement et la valorisation des eaux salines et pour l’augmentation du rendement. Dans la littérature, le traitement magnétique antitartre est le plus développé. Cependant, peu de recherches sont orientées vers le traitement pour faire face à la salinité des eaux d’irrigation.

Dans ce travail, la valorisation des eaux salines par cette technologie testée sur la culture de citrus. Quelques résultats de l’effet de ce procédé sur les eaux d’irrigation, l’évaporation, la tension superficielles seront étudiés . De même quelques résultats du rendement seront examinés.

Background (Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Provide broad definitions and discussions of the topic and incorporate views of others (literature review) into the discussion to support, refute, or demonstrate your position on the topic.[[1]](#endnote-2)

Main FOCUS OF the CHAPTER[[2]](#endnote-3)(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Issues, Controversies, Problems(Subhead 2: Arial, Size 12, Title Case, Bold)

Present your perspective on the issues, controversies, problems, etc., as they relate to theme and arguments supporting your position. Compare and contrast with what has been, or is currently being done as it relates to the chapter's specific topic and the main theme of the book.

*More Issues, Controversies, Problems (Subhead 3: Arial, Size 12, Title Case, Italics)*

*Even More Issues, Controversies, Problems (Subhead 4: Arial, Size 12, Title Case, Italics)*

Numbered Lists

1. **Key Term (KT):** This is a numbered term.
   1. List level 2.
      1. List level 3.
      2. List level 3.
   2. List level 2.
2. List level 1.

**No more than three levels of lists. Must be in the above format.**

Bulleted Lists

* **Key Term (KT):** This is a bulleted term.
  + List level 2.
    - List level 3.
    - List level 3.
  + List level 2.
* List level 1.

**No more than three levels of lists. Must be in the above format.**

Unnumbered Lists

**Step 1:** Ask a question

**Step 2:** Do background research

**Step 3:** Construct a hypothesis

**Step 4:** Test your hypothesis by doing an experiment

**Step 5:** Analyze your data and draw a conclusion

**Step 6:** Communicate your results

**Phase One:**[Typification of dairy systems](http://www.fao.org/wairdocs/ilri/x5465e/x5465e06.htm#phase 1. typification of dairy systems)

**Phase Two:** Characterization of a specific dairy system

**Phase Three:**[Seeking ways to enhance the development of specific dairy systems](http://www.fao.org/wairdocs/ilri/x5465e/x5465e06.htm#phase 3. seeking ways to enhance the development of specific dairy systems)

[**Phase Four:** Cross-site synthesis](http://www.fao.org/wairdocs/ilri/x5465e/x5465e06.htm#phase 4: cross site synthesis)

**Hypothesis One:** Research results in conclusion.

**Hypothesis Two:** Conclusion leads to breakthrough.

**Must be in the above format.**

*Block Quotes*

Block quotes should be indented .5” throughout and contain no beginning or ending quotations marks. (IGI, 2014)

*Computer Code*

Computer code should be indicated by using “Courier New”

Any proper indentations

should be made clear

and checked during final proofing.

SOLUTIONS AND RECOMMENDATIONS (Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Discuss solutions and recommendations in dealing with the issues, controversies, or problems presented in the preceding section.

The following sentence is an example of a figure callout. Figure 1 is an example of a figure caption within a chapter.

*Figure 1. Caption should be sentence case with no ending punctuation if only one sentence (IGI, 2014)*

*Source: IGI, 2014*

Every Figure or Table must be “called out” within the text of your chapter in numerical order with no abbreviations.

**Figures should be in .tif format and 300 dpi.**

All images must be included separately, butmayalso be included within the text of your chapter.

Sources can be included on the same line as the caption or directly under the caption.

All figures are printed in black and white.

*Table 1. Caption should be sentence case with no ending punctuationif only one sentence*

|  |  |  |
| --- | --- | --- |
|  | **Synchronous E-Learning** | **Asynchronous E-Learning** |
| When | • Discussing less complex issues.  • Getting acquainted.  • Planning tasks. | • Reflecting on complex issues.  • When synchronous classes cannot be attended due to illness, work, family or other commitments. |
| Why | • Students become more committed and motivated due to getting quick response. | • Students have more time to reflect as the quick response is not immediately expected. |
| How | • In addition to face-to-face class, various synchronous means including video conferencing, instant messaging and conversation (chat) are used. | • Various asynchronous means such as e-mail, discussion boards, and blogs are used. |
| Online | Synchronous means:  • Virtual Classroom.  • Video/teleconferencing.  • Conversation (chat) rooms/instant messaging. | Asynchronous means:  • Web-based teaching/ computer based teaching.  • Threaded discussion groups.  • Recorded live events.  • Online documents/ e-mail/global announcement. |
| Offline | Synchronous means:  • Face to face classroom.  • Hands on laboratory practices.  • Field trips, field work. | Asynchronous means:  • Bound books/ learning resources.  • Videos/Echo360/Lectopia.  • Audio tapes. |
| Examples | • Students work in groups and can use instant messaging as a support for getting to know each other, exchanging ideas, and planning tasks.  • A teacher who wants to present concepts from the literature in a simplified way might give an online lecture by video conferencing. | • Students expected to reflect individually on course topics may be asked to maintain a blog.  • Students are expected to share reflections regarding course topics and critically assess their peers’ ideas. They may be asked to participate in online discussion on a discussion board. |

*Source: (IGI, 2014)*

Tables should not include cell shading. Column and row headings should be **bold and centered** – everything else **left aligned and regular font**. Any other formatting *will be removed* and will only be presented in black and white.

FUTURE RESEARCH DIRECTIONS(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Discuss future and emerging trends. Provide insight about the future of the book’s theme from the perspective of the chapter focus. Viability of a paradigm, model, implementation issues of proposed programs, etc., may be included in this section. If appropriate, suggest future research opportunities within the domain of the topic.

Conclusion(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Section title should be “Conclusion,” not “Conclusions.”Provide discussion of the overall coverage of the chapter and concluding remarks.

**ACKNOWLEDGMENT (Optional)**

Any acknowledgment to fellow researchers or funding grants should be placed within this section.

**The funding agency should be written out in full and also include the grant number which can be included in brackets. The funding agency needs to be listing in the “Organization Name.”**

**If there is only one funding agency:**

This research was supported by the Organization Name [grant number xxxxxx].

**If there are multiple agencies and/or grant numbers then it should be formatted as such:**

This research was supported by the Organization Name [grant numbers xxxxxx]; the Organization Name [grant number xxxxxx]; and the Organization Name [grant number xxxxxx].

**If there is no funding information they should simply state:**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**If an organization provided support that wasn’t monetary (maybe they provided facilities, survey samples, etc.), please mention that the research was supported by that organization.**

**Note: If you have any concern that this information will compromise your anonymity on your manuscript during the peer review phase, you may withhold this information until final manuscript submission.**

**REFERENCES(Subhead 1: Arial, Size 12, UPPERCASE, Bold)**

References should relate **only** to the material you cited within your chapter (this is not a bibliography). References should be in **APAstyle and listed in alphabetical order**. Please do not include any abbreviations.Any additional references should be included in an *Additional Reading* section. For more information and examples on properly citing sources in APA style, please see IGI Global’s[APA Citation Guidelines](http://www.igi-global.com/publish/contributor-resources/apa-citation-guidelines/).

***EXAMPLES:***

It is your responsibility to ensure that all information in your paper that is taken from another source is substantiated with an in-text reference citation. Please also note that your references **must strictly follow APA** (American Psychological Association) style.

*NOTE: The publisher may return your chapter to you for correction if you do not properly format your references. Note that this will delay the production process, and ultimately, the release of the book.*

References should relate only to the material you actually cited within your chapter (this is not a bibliography), and they should be listed in alphabetical order. Please do not include any abbreviations.[[3]](#endnote-4)

While some examples of references in APA style are included below, it is highly recommended that you reference an actual APA style manual (7th edition). If you do not own an APA style manual, you may either 1) consult your library or 2) visit APA’s Web site to order your own copy: http://www.apastyle.org/pubmanual.html. It may also benefit you to consult the following pages of APA’s Web site for frequently asked questions and other tips: http://www.apastyle.org/faqs.html & http://www.apastyle.org/previoustips.html.

**Book with one author:**

Author, A. A. (2005). *Title of work.* Publisher.

**Book with two authors:**

Author, A. A., & Author, B. B. (2005). *Title of work.* Publisher.

**Book with more than two authors:**

Author, A. A., Author, B. B., & Author, C. C. (2005). *Title of work.* Publisher.

**Journal article:**

Sawyer, S., & Tapia, A. (2005). The sociotechnical nature of mobile computing work: Evidence from a study of policing in the United States. *International Journal of Technology and Human Interaction, 1*(3), 1-14.

**A publication in press:**

Junho, S. (in press). Roadmap for e-commerce standardization in Korea. *International Journal of IT Standards and Standardization Research.*

**A publication in a language other than English:**

Amano, N., & Kondo, H. (2000). *Nihongo no goitokusei*[Lexical characteristics of Japanese language]. Sansei-do.

**Edited book:**

Zhao, F. (Ed.). (2006). *Maximize business profits through e-partnerships.* IRM Press.

**Chapter in an edited book:**

Jaques, P. A., &Viccari, R. M. (2006). Considering students’ emotions in computer-mediated learning environments. In Z. Ma (Ed.), *Web-based intelligent e-learning systems: Technologies and applications* (pp. 122-138). Information Science Publishing.

**Published proceedings:**

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In *Proceedings ofNebraska Symposium on Motivation*(vol. 38, pp. 237-288). University of Nebraska Press.

**Unpublished doctoral dissertation or master’s thesis:**

Wilfley, D. (1989). *Interpersonal analyses of bulimia: Normal-weight and obese*[Unpublished doctoral dissertation]. University of Missouri, Columbia, MO, United States.

**A presented paper:**

Lanktree, C., & Briere, J. (1991, January). *Early data on the trauma symptom checklist for children (TSC-C)*[Paper presentation].The meeting of the American Professional Society on the Abuse of Children, San Diego, CA, United States.

**Website:**

VandenBos, G., Knapp, S., & Doe, J. (2001). *Role of reference elements in the selection of resources by psychology undergraduates*. http://jbr.org/articles.html

**ADDITIONAL READING(Subhead 1: Arial, Size 12, UPPERCASE, Bold)**

In this section, please provide a list of 8-10 additional readings (e.g. journal articles, book chapters, case studies, etc.). You, as the contributing author(s), are the best source for suggestions on additional readings in your respective field. APA style must be followed for this section.

KEY TERMS AND DEFINITIONS(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Please provide 7-10 key terms related to the topic of your chapter.

Terms should be in alphabetical order and have clear, concise definitions (in your own words).

Term and colon should be bold, each word of the term should be capitalized, include ending punctuation, and contain no equations.

Definitions should follow a standard dictionary-style format. Place your terms and definitions after the references section of your chapter.

***EXAMPLES:***

**Appalachia:** A geographic and cultural region of the Mideastern United States. The population in media is portrayed as suspicious, backward, and isolated.

**Ethnocentric:** A belief that one's own culture is superior to other cultures.

**Family-Centricity:** The belief that family is central to well being and that family members and family issues take precedence over other aspects of life.

Appendix 1(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

Appendices are at the end of the manuscript and, if more than one, numbered with Arabic numerals.

Any Figure or Table numbering should continue from chapter body.

If Figure or Tables are not called out and explained within the chapter, please provideprior to its placement within the Appendix.

APPENDIX 2(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

The Institute of Museum and Library Services has collected some interesting statistics indicating that despite the sharp decline in library usage over the last ten years, libraries have actually seen an *increase* in the number of people who come through their doors annually since the beginning of the current recessionary period in 2008. Was this a contradiction, or some kind of error? Table 1 shows the data in question.

Table 2. Visits to public libraries

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Per Capita Visit to Public Library** | **Year** | **Per Capita Visit to Public Library** |
| 1998 | 4.2 | 2003 | 4.6 |
| 1999 | 4.3 | 2004 | 4.6 |
| 2000 | 4.3 | 2005 | 4.7 |
| 2001 | 4.4 | 2006 | 4.8 |
| 2002 | 4.4 | 2007 | 5.0 |

(Data Source: National Center for Education Statistics, 1998-2007)

ENDNOTES(Subhead 1: Arial, Size 12, UPPERCASE, Bold)

1. Please use only endnotes if needed. If you include endnotes, they will be placed after the references at the end of your chapter. Footnotes at the bottom of a page arenotacceptable. [↑](#endnote-ref-2)
2. Please note that the title/subtitles of this section should be content specific. [↑](#endnote-ref-3)
3. URLs used as sources must be cited and included as references, not as Endnotes. [↑](#endnote-ref-4)