

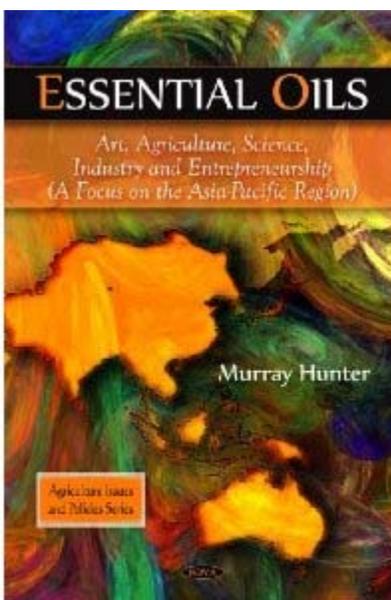
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Book Review: Essential Oils: Art, Agriculture, Science, Industry and Entrepreneurship: a Focus on the Asia-Pacific Region by Murray Hunter



by **Anya McCoy**

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If you saw this on a bookshelf in a store, or came across it online, you might not be aware of the value of the information on essential oils and how it relates to you, a lover of perfume. After all, you're probably a perfumista reading this, and you know essential oils are used in perfumery, but the book title seems a bit dry and academic.

If you're reading this on Basenotes, know that there is some great perfumery information in this book, some of it not found elsewhere, or in bits and pieces in other, more expensive books. The directly-related perfume art and industry data probably makes up 20% of Essential Oils.

Here's the other Basenotes demographic that I'm writing this review for: if you head up a fragrance house or supply house, this book is crucial if you are looking into entrepreneurship by establishing essential oil farms in the tropics and subtropics. Perhaps you've already started some essential oil production facilities in those regions of the world, and you struggle with the culture, agriculture, economics, in essence, the entire business model. This book is for you. At 780 pages, the book is so packed with information, all carefully footnoted and referenced, that you will find yourself going to it again and again for ideas and confirmations on projects.

I don't believe a simple book review can cover the scope of Essential Oils, so [I have posted the entire Table of Contents on my blog](#). It would take up too much of the space allotted for the review here on Basenotes, since the TOC is over nine pages, single spaced. That gives you an idea of how

comprehensive this book is. Here is the simple form of the TOC:

- Chapter One: Introduction: The Development Issues pp.1-40
- Chapter Two: The Nature of the Industry pp.41-88
- Chapter Three: Current Essential Oil Production in the South-East Asia Pacific Region pp.89-110
- Chapter Four: The Phyto-chemistry of Essential Oils pp.111-178
- Chapter Five: The Extraction of Essential Oils pp.179-212
- Chapter Six: Developing Essential Oils pp.213-232
- Chapter Seven: The Screening and Regulatory Process pp.233-284
- Chapter Eight: The Development Planning Process pp.285-326
- Chapter Nine: The Field Development Process pp.327-452
- Chapter Ten: The Organic Production of Essential Oils pp.453-516
- Chapter Eleven: The Application of Essential Oils pp.517-694
- Chapter Twelve: Enterprise Viability and New Crop Potential pp.695-746
- Index pp.747-780

Obviously a work of love and intellectual pursuit, my guess is it took Thailand-based Professor Murray Hunter, of the University of Malaysia Perlis, decades to assemble all of this information. Like Steffen Arctander's three-volume classic, Hunter's book, albeit straddling several disciplines and interest groups, is

worthy of being placed in the pantheon of books that address aromatic crops.

There are many contemporary issues involved with the production of essential oils, from sustainability, economics, fragrance and flavor industry needs, biodiversity, isolates, and much more.

Dr. Hunter surprised me with the inclusion of a lot of detailed information about the perfumery industry. It's obvious he's been monitoring discussions and forums on perfumery. He even picked up on the fact that, in aromatherapy, any seller touting "therapeutic grade" essential oils is putting on a bit of a con, since that phrase has no regulatory or certification standard in the industry, he terms it, as many of us experienced in aromatherapy do, *labeling gimmicks* (p. 634).

As a perfumer who has a rudimentary understanding of the chemical constituents of essential oils, I can reach for this book and find information on ketones, esters and find it written in easy-to-understand layman terms. Or, perhaps I need some insight into the new natural isolates available to natural perfumers: I can find them listed here. In fact, I included some of Dr. Hunter's information on isolates in the textbook for my online students.

Here's some enlightenment on how microorganisms are now a source of fragrance and flavor materials, and the aromatics they produce:

From p. 93: ESSENTIAL OILS AS INTERMEDIATES IN THE PRODUCTION OF OTHER COMPOUNDS

Essential oils are natural sources of alcohols, phenols and aldehydes, etc. Thus many essential oils are used as starting materials for other products through fractionation, separation, transformation and synthesis, utilizing both chemical reactions and biotechnology methods. A number of essential oils that consist of a single primary component can be utilised for the isolation of useful aroma chemicals. Examples of this are Bois De Rose oil for linalool, cedrol from cedarwood oil, geraniol and citronellal from citronella oil, eugenol from clove oil, rhodinol from geranium oil, citral from litsea cubeba oil and safrol from sassafras oil. For a time, synthetic versions of these materials were popular and production of these natural isolates waned. However natural isolates have become popular again because their olfactory profiles exhibit a depth and quality that cannot be duplicated by their synthetic counterparts. The difference between a natural and synthetic aroma chemical lies in the proportions of impurities they contain. Natural isolates from essential oils carry over traces of their parent material while impurities in synthetic aroma chemicals most likely detract from the olfactory quality of the material.

Table 2.5. Fragrance Materials Obtained Through Microorganisms

Microorganism	Odour Type	Chemical Constituents
<i>Bacillus subtilis</i>	Soybean	Tetramethylpyrazine
<i>Ceratocystis moniliformis</i>	Fruity, Banana, Peach, Pear, Rose	3-Methylbutyl acetate, δ - and γ -decalactone, geraniol, citronellol, nerol, linalool, α -terpineol
<i>Ceratocystis variopora</i>	Fragrant Geranium	Citronellol, citronellyl acetate, geranial, neral, geraniol, linalool, geranyl acetate
<i>Ceratocystis virescens</i>	Rose, Fruity	6-Methyl-5-hepten-2-ol acetate, citronellol, linalool, geraniol, geranyl acetate
<i>Corynebacterium glutamicum</i>	Soybean	Tetramethylpyrazine
<i>Daedalea quercina</i>	Apples	
<i>Inocybe corydalina</i>	Fruity, Jasmine	Cinnamic acid methyl ester
<i>Kluyveromyces lactis</i>	Fruity, Rose	Citronellol, Linalool, Geraniol
<i>Lentinus cochleatus</i>	Anisaldehyde	
<i>Lenzites sepiaria</i>	Slightly spicy	

Need to quickly find out about any of the following? They're listed in Chapter Two:

- Aroma Chemical Manufacturers
- Specialty Fine/Aroma Chemical Manufacturers
- Trader/Exporter
- International Trader
- Flavour and Fragrance Houses
- Flavour and Fragrance House Subsidiaries
- Flavour and Fragrance House Agent
- National Regulatory Systems
- Standards Associations
- End Product Manufacturers
- Wholesalers and Retailers

Then, if you're an agricultural and ethnobotany/economic botany geek like me (B.A. from the University of California, Riverside in Economic Botany, undergrad studies at Cal Poly San Luis Obispo in Crop Science) the detailed flowcharts and text explaining the interrelationships of all of the players, from the financiers to the farmer, are pure heaven.

Jump forward a few years, and now, as a perfumer, I have a book that allows me to dream of the patchouli plantation I may one day have, and have at my fingertips all of the criteria listed that would allow me to cross off a checklist of items necessary for it to happen. Anyone reading this who wishes to do some backyard distillation can find great direction on how to proceed, at least as far as the economics and realities of the project.

This book is many things to many people, and that is very positive. It illustrates to the project planner all of the nuances of a perfumer's world, even what fragrance families are. For the perfumer or perfumistas, the entire scope of what essential oils are, how they are produced, and all of the regulatory and economic factors that go into their creation, is here.

Dr. Hunter has provided us with a book of enormous scope and knowledge regarding essential oils. It will be the 'go to' reference for many academic disciplines and business enterprises, including perfumery.

Essential Oils: Art, Agriculture, Science, Industry and Entrepreneurship: a Focus on the Asia-pacific Region by Murray Hunter

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