

Medicinal and Aromatic Plants and Gardens: Gardens in Spain, France and Italy and the New Program at UM-Dearborn

Marilee Benore & Simona Marincean
University of MI Dearborn
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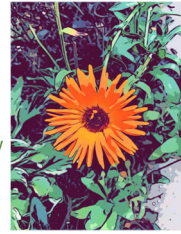
The Ohio State Master Gardeners



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What we will present today to you....

- Our personal interest in Medicinal and Aromatic plants
- Gardens—France, Spain, most recently....Italy
 - Places you might want to visit!
 - The themes, the plants, the science
- The certificate program at UM Dearborn...and how it came together
- How students have responded



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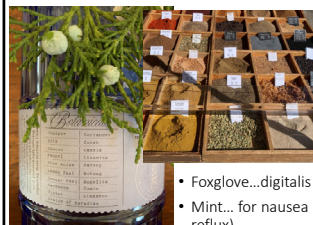
Plants and Medicines-

- Half of medications are derived from plants
- Natural products are probably the primary form of medication globally
- The practice of Integrative Medicine is increasing
- There is increased use (and misuse) of natural products and plant extracts, requiring community education



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Medicinal Plants have been used by humans (and animals) for thousands of years, and books and documents on their cultivation and use are available, from the Bible and Quran to ancient scientific texts such as the Ebers papyrus, Dioscorides De Materia Medica.



- Foxglove...digitalis a cardiac drug
- Mint... for nausea (but induces reflux)
- Lemon balm.... teas, bugs at bay

Many gardens in Europe have medicinal areas...

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France- Jardin du Plants -Garden in Paris next to the hospital



This is a large garden (and small zoo)
The plants are arranged medically by chemical component and use.

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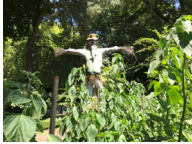
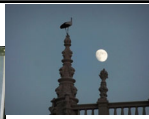
Versailles- The Palace at Versailles



Versailles is famous for its fountains, and the hamlet town created for Marie Antoinette. Just outside the gates is the King's Kitchen garden, and a culinary school. The medicinal plot is small, but it is an educational facility.

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Madrid Real Jardín Botánico



This is my cousin, who has beautiful gardens, fig and olive trees, nicotiana, and hangs her laundry on oleander....

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Botanical Garden of the University of Valencia Jardí Botànic de la Universitat de València)



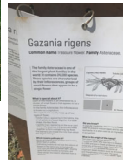
The gardens in Valencia are associated with the University. It has a large medicinal plant area, and ~100 cats.



Valencia has a huge science museum... several buildings, built within the former waterway.

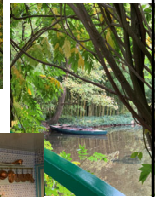
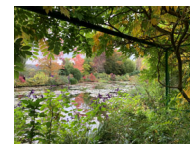
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Barcelona International Exposition of 1929, Laribal Gardens



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Giverny- The gardens and pond of Monet



Most gardens have a garden and medicinal plant section. These gardens were critical to every home.



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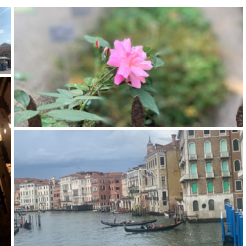
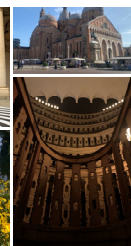
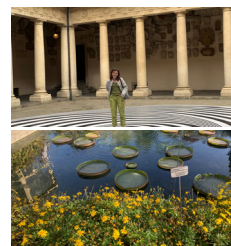
St Valery Sur Somme Amiens



In this small town by the English Channel is an old home being renovated, a medicinal garden, the palace where Joan de Arc was imprisoned, and in nearby Amiens, the [Hortilonnages](#).

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Padua (Padova) Italy - Orto Botanica di Padova Founded in 1545



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Plants and Daily Health



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Medicinal and Aromatic Plant Biochemistry Certificate Program

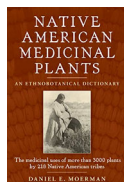
- Culture and science intersection
- Applied program: skill set needed in supporting careers in natural products synthesis, drug or environmental testing, clinical chemistry, cannabis chemistry
- Integrative medicine field job opportunities



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Why at UM-Dearborn?

- Our students are interested.
- There are few competing programs, the closest is the cannabis chemistry at MI Tech.
- This is relevant to campus goals of more practice based learning (PBL)
- UM Dearborn is an ideal campus—we have the facilities, a greenhouse, and a large natural area.



- *It turns out—it excites students about plants!*

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The Certificate- Medicinal and Aromatic plants—from seed to oil

- Designed for science students to learn the science of cultivation testing, and isolation
- Requires plant biology, organic chemistry and lab, research/internship, the BCHM 413 Medicinal Plants Course

Courses

- Biochemistry 413- Medicinal and aromatic plants. 3 credit lecture and lab
- Biochemistry 113 Medicinal and Aromatic Plants in Culture and Practice (Study abroad)



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The Medicinal and Aromatic Plant course



- Students learn to grow plants from seed.
- They learn to extract essential oils via steam distillation
- They test the oils by GC MS, antibiotic resistance properties, UV/Vis, and contamination
- They learn to make products via understanding the chemistry
- Include guest lectures by integrative physicians and alumni
- Visit to a cannabis plant



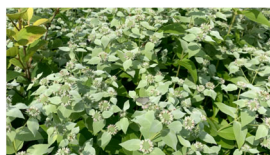
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Lectures included background on plants, olfactory systems, FDA regulations, characterization methods, and the chemistry of the components (terpenes)

Mountain Mint is a Common Garden flower,



Two small velvet leaves flank the whitish bloom, which contains small flecks of lavender color in a halo. From the top it almost looks like a cherub head with wings. A few more of the same-type of leaf are found only at the top, and most of the 4-sided stalk is covered with a typical crisp leaf. This renders it unique from other mints.

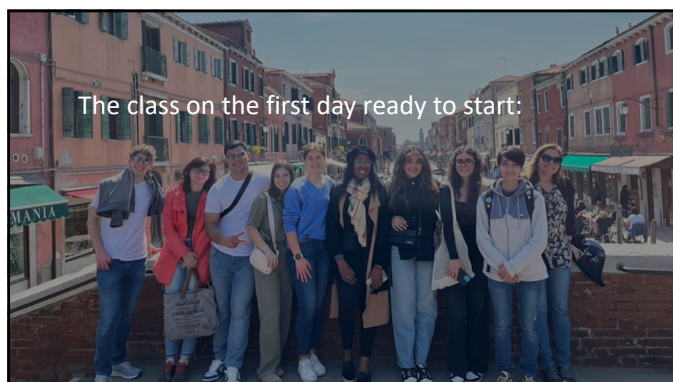
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The new Study Abroad program to Padua Italy- *Medicinal and Aromatic Plants in Culture and Practice*

- This is an Introductory Class, designed to expose students to the gardens, the culture, and the use of plants in medicine and cooking.
- An 8 day trip to Padua Italy to experience the garden (Orto Botanica), farms, University, markets, restaurants and rich history of Padua (Padova) Italy, located SW of Venice, in the Northern region of Italy.
- Students stayed in dorms, and we met every day starting with cappuccinos, finishing with dinner.

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The class on the first day ready to start:



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Orto Botanico Padua

Student working on a medicinal plant

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**Tours and lectures at
Orto Botanico**

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Orto Botanica

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Private garden at Vila Vescovi

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**UM – Dearborn
and University of
Padua Students**

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Summary

- The new certificate in Medicinal and Aromatic Plants is of great interest to students interested in health.
- The experiments and study abroad connect plants to heritage and culture.
- Students have developed increasing interest in plants! Growing, eating, and using it to identify new uses in medicine and health.

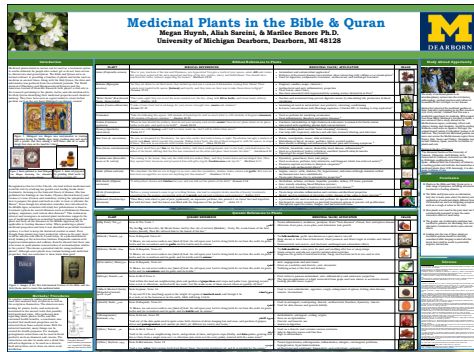
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Medicinal Plants in the Bible & Quran
Megan Hayak, Aliah Sarwat, & Marilee Benore Ph.D.
University of Michigan Dearborn, Dearborn, MI 48128

The poster displays a comprehensive table of medicinal plants mentioned in the Bible and Quran, organized by plant type and their associated biblical and Quranic references. The table includes columns for the plant name, its biblical reference, its Quranic reference, and a brief description of its medicinal properties. The poster also features a sidebar with images of various plants and a section titled 'References' at the bottom.

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Program Potential for Careers

This certificate is designed to enhance the skills and knowledge of biochemistry and other undergraduate science students interested in and preparing for careers in:

- The study and application of alternative medications
- Bioactive plant extraction purification and characterization
- Integrative Medicine
- Medicinal chemistry
- Quality control positions in the health and wellness industries
- Pharmacy
- Pharmacology
- Drug discovery
- Research in the cosmetic industry
- Aromatherapy
- Perfumes and Flavorings

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