Herb Gardening in the Low Desert

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Arizona Herb Association
&
Maricopa County Master Gardeners
What We’ll Talk About Today

- QUICK OVERVIEW
  - Intro to MGs & AHA
  - What’s an Herb?
  - A Little Herbal History
  - Where to Plant/How to Grow
  - Recommended Gardens to Tour
  - Recommended Books
  - Where to Buy/Botanical Names
What We’ll Talk About Today

• Herb Gardening
  – Propagation Methods
  – Fall Tasks for Established Plants
  – Herbs You Can Propagate in Fall
  – Spring Tasks for Established Plants
  – Herbs You Can Propagate in Spring

• Summary

• Questions
Maricopa County Master Gardeners

• 600 Volunteers who “help promote environmentally responsible gardening & landscaping in the Low Desert”
  – Desert Garden Institute
  – Ambassadors
  – Speakers Bureau
  – Fall Plant Sale
  – Citrus Clinics
  – Demo Gardens
  – Real Gardens for Real People Tour
  – Diagnostic Clinics
  – Hotline, Website, List Serve, Publications
Arizona Herb Association
est. 1988

- 100-200 herb enthusiasts
- Meet 1st Thursday of each month (except Summer) 7:00 p.m.
- Speakers on all aspects of herbs
Arizona Herb Association

est. 1988

- Demonstration Garden
- Speakers Bureau
- Culinary Group
- Scholarships & Public Service

- [www.azherb.org](http://www.azherb.org) for location & topic
- Or 602-470-8086 ext 830
“Herb” vs. “Erb” (and “Yerba”)

- Oxford English Dictionary

Herb
“Herb” vs. “Erb” (and “Yerba”)

- Webster’s *American* Dictionary

Either pronunciation accepted
“Herb” vs. “Erb” (and “Yerba”)

• “Yerba” is the Spanish word for Herb

Yerba Anis (Mexican Tarragon)
Yerba Mansa (Swamp Root)
Yerba Buena (Spearmint)
What is an Herb?

• An Herb is a PLANT:
  – Trees
  – Shrubs and sub-shrubs
  – Vines
  – Woody-stemmed perennials
  – Herbaceous plants
    – annual, perennial and biennial
  – Ferns
  – Fungi
What is an Herb?

• “In its essential spirit, in its proper garden meaning, an herb is a garden plant which has been cherished for itself and for a use and has not come down to us as a purely decorative thing.”

» Henry Boston (1935)
What Makes a Plant an Herb?

• A Herb is a USEFUL Plant:
  – Culinary
  – Medicinal
  – Crafting
  – Dyes
  – Religious/Cultural/Ceremonial
  – Beauty/Personal Care
  – Aroma
What Part of the Herb is Used?

• Roots/Bulbs
What Part of the Herb is Used?

- Roots/Bulbs
- Stems
What Part of the Herb is Used?

- Roots/Bulbs
- Stems
- Leaves
What Part of the Herb is Used?

• Roots/Bulbs
• Stems
• Leaves
• Flowers
What Part of the Herb is Used?

- Roots/Bulbs
- Stems
- Leaves
- Flowers
- Fruits
What Part of the Herb is Used?

- Roots/Bulbs
- Stems
- Leaves
- Flowers
- Fruits

(Seeds or Bark = Spices)
“The Iceman Cometh”

- 5,300 year-old “naturally mummified” body was discovered in the Italian Alps in 1991
- He was discovered with 2 lumps of bracket fungus in his pouch
- Why bracket fungus??
“The Iceman Cometh”

- Bracket fungus is toxic to some bacteria and intestinal parasites
- An autopsy later showed that he had an intestinal parasite in his rectum.
- Earliest documented example of an herbal treatment -- around 3,300 B.C.E.
Other Historical Evidence

- Archeological sites in Iraq show that the Neanderthals used yarrow, marshmallow and other herbs some 60,000 years ago.
The Animal Herbal Connection

• Prehistoric humans were keen observers of the world around them, especially the animals (kill or be killed).
• When animals appeared ill, they sometimes ate plants they ordinarily ignored.
The Animal Herbal Connection

- Neanderthals sampled the plants and noticed curious effects:
  - wakefulness
  - sleepiness
  - laxative action
  - increased urination, etc.

- Herbal healing began!
The Animal Herbal Connection

- They used strong smelling herbs to repel insects and to hide their scent from animals they were hunting.
- Fragrant herbs were used for perfumes and embalming mixtures.
The Animal Herbal Connection

• They wrapped meats in aromatic herbs to preserve them
  – Those who ate these meats suffered less illness!
  – Aromatic herbs were gifts from the gods!

• Rosemary & sage are very effective food preservatives.
Chinese Herbal Tradition

- Around 3400 BCE (around the time of the Iceman), emperor Shen Nung tested herbs on himself and recorded their effects.
- He died after consuming too much of a poisonous herb!
Chinese Herbal Tradition

- Shen Nung is credited as the author of the *Pen Tsao Ching* (The Classic of Herbs), which listed 237 herbal prescriptions using:
  - Ephedra
  - Rhubarb
  - Opium Poppy (pictured)
  - Ginseng
  - Sesame
  - Garlic
  - Cinnamon
East Indian Herbal Tradition

- Ancient Indians called their medicine Ayurveda, from two Sanskrit words:
  - ayur == “life”
  - veda == “knowledge”
East Indian Herbal Tradition

- The *Rig Veda*, a 4,500 year-old collection of Indian hymns, describes formulas for medicines using 67 medicinal herbs, including:
  - ginger
  - cinnamon
  - senna
Sumerian Herbal Tradition

• One of the world’s oldest surviving prescriptions is a Sumerian clay tablet from around 2100 BC that mentions several herbs, including:
  – myrrh
  – cypress
  – opium poppy.
Assyrian Herbal Tradition

- Archeologists have unearthed the remains of an Assyrian pharmacy that stocked 230 herbs, including:
  - almond
  - anise
  - caraway
  - coriander
  - juniper
  - saffron
  - sesame
  - turmeric
  - willow
Egyptian Herbal Tradition

- A 65-foot papyrus, from around 1500 BC, listed 876 herbal formulas from more than 500 plants, including:
  - Aloe --Caraway --Castor Bean --Chamomile
  - Cinnamon --Coriander --Cardamom --Fennel
  - Fenugreek --Garlic --Gentian --Ginger
  - Juniper --Mint --Myrrh --Opium Poppy
  - Onion --Sesame --Saffron --Sage --Thyme
Egyptian Herbal Tradition

- Egyptians were obsessed with two herbs:
  - Onion
  - Garlic

- They believed that these two herbs strengthened the body and prevented disease (a view supported by modern science).

- Greek historian Herodotus called them “the stinking ones”.

Greek Herbal Tradition

• Homer wrote in the *Iliad* that Greek medicine came from Egypt.
Greek Herbal Tradition

- Hippocrates’ students compiled the *Corpus Hippocraticum*, which mentions 350 medicinal plants, including:
  - Mint  --  Rosemary
  - Thyme  --  Anise
  - Clove  --  Cinnamon
  - Burdock
Roman Herbal Tradition

- Roman herbalists were as likely to be killers as healers.
  - Poison was the most popular way to knock off a noble or politician.
  - Could be carried off from a safe distance.
  - Many people sickened and died suddenly anyway, so no suspicion.

Nero gained the throne by poisoning his stepbrother
The Role of Monasteries

• After the fall of Rome, European medicine was dominated by the Catholic Church, which believed that illness was a punishment from God and was treatable only by prayer and penitence.
The Role of Monasteries

- The Benedictine Monks were the most avid herbalists.
- Benedictine herb gardens contained
  - Cumin
  - Fenugreek
  - Pennyroyal
  - Rosemary
  - Sage
  - Watercress
  - Fennel
  - Mint
  - Rose
  - Rue
  - Savory
The Herbals

- Culpeper: Marjoram was “warming and comfortable in cold Diseases of the Head, Stomach, Sinews and other parts, taken inwardly, or outwardly applied.”
The Herbals

- Culpeper: Winter Savory and Summer Savory “both expel wind gallantly, and that (they say) is the reason why they are boyled with Pease and Beans and other such windy things”
The Herbals

- Gerard: Sweet marjoram could “comfort those given to overmuch sighing”, and for coughing and “against the swooning of the heart”.
- Dittany of Crete was a “remedie against the stinging of serpents” when drunk with wine.
“The sweete marjeromes are not onely much used to please the outward senses in nosegayes, and in the windowes of houses, as also in sweete pouders, sweete bags, and sweete washing waters, but are also of much use in physicke.” Parkinson 1629
Healing Herbs in Early America

- European explorers learned how to cure scurvy from Native Americans by drinking a tea brewed with yellow cedar bark and leaves.
Homeopathy -- Herbal Medicine

Invented by Dr. Samuel Hahnemann in the eighteenth century

Homeopathy came to U.S. in 1830’s

In 1900, the AMA decreed that any physician caught using homeopathy would be expelled
The Collapse of Herbal Medicine

• In 1805, a German chemist extracted the first drug from an herbal source, morphine from the opium poppy.

• Modern pharmacology was born.
The Collapse of Herbal Medicine

- American medical schools, modeled after German schools, dropped botany in favor of pharmacology.
- Drugs replaced herbal remedies.
- By 1940, no US medical school taught herbal healing.
The Herbal Renaissance

• In the 1960’s, many Americans began changing their attitudes about health and healing
  – Illness prevention rather than treatment

• By the late 1990’s, medicinal herb sales > $3 billion/year

Echinacea
The Herbal Renaissance

- Today, 80 US medical schools teach alternative medicine.
- Mainstream doctors more willing to recommend herbal remedies
  - ginger for motion sickness
  - St. John’s wort for depression
Where do Herbs Come From?

Every Land Mass – Every Culture
Herbs are Easy to Grow in the Low Desert

- Many popular & common herbs originated in the Mediterranean or North Africa, places with:
  - hot climates
  - low rainfall
  - alkaline soils
- Just like Southwest USA
Herbs are Easy to Grow in the Low Desert

- Many other herbs originated in tropical Southeast Asia, Equatorial Africa, or tropical South & Central America.

- Love our heat, but need additional:
  - organic matter
  - water
  - fertilizer

Basil

Lemongrass
Where Should You Plant Herbs?

Traditional Herb Garden
from “Practical Herb Garden” by J. Houdret
Where Should You Plant Herbs?

Tudor “Knot” Garden
from “Practical Herb Garden” by J. Houdret
Where Should You Plant Herbs?

Mesquite Herb Garden
Where Should You Plant Herbs?

Mesquite Herb Garden
Where Should You Plant Herbs?

Another Mesquite Herb Garden
Where Should You Plant Herbs?

Aloe vera in a Xeriscape Landscape
Where Should You Plant Herbs?

Chaparral Sage in a Landscape
Where Should You Plant Herbs?

African Blue Basil on a Patio
Where Should You Plant Herbs?

Apple Mint as Garden Art
Where Should You Plant Herbs?

Rosemary Trailing Over a Wall
Where Should You Plant Herbs?

Rosemary Trailing Over a Parking Garage
Where Should You Plant Herbs?

Rosemary at a Gas Station
Where Should You Plant Herbs?

Rosemary as a hedge
Where Should You Plant Herbs?

Rosemary as a hedge
Where Should You Plant Herbs?

Breadseed (Opium) & California Poppies in a Wildflower Mix
Where Should You Plant Herbs?

Breadseed Poppies in a Wildflower Mix
Where Should You Plant Herbs?

Yerba Mansa in a Pond Environment
Where Should You Plant Herbs?

Anywhere!!

Yerba Mansa in a Birdbath
Local Herb Gardens to Tour

• Desert Botanical Garden
• Boyce Thompson Arboretum
• Tucson Botanical Garden
• Arboretum at Flagstaff
• Tohono Chul Park – Tucson
• Maricopa County Extension
Beware of Most Herb Books and Magazines

- Written in U.K. or Northeastern U.S.
- Poor guidelines for Low Desert
  - planting/harvesting calendars
  - sunlight/water requirements
- Great for photos, uses, history, design ideas, recipes, etc.
Recommended Gardening & Herb Books

• Low-Desert Herb Gardening Handbook
  (Arizona Herb Association)
  – Herb planting & harvesting month by month
  – Specifically written for low-desert herb gardening
Recommended Gardening & Herb Books

- Desert Gardening for Beginners (Arizona Master Gardener Press)
  - How to grow vegetables, flowers and herbs in an arid climate
  - Covers all the basics for desert gardeners
Recommended Gardening & Herb Books

- Desert Landscaping for Beginners (Arizona Master Gardener Press)
  - Tips and techniques for success in an arid climate
  - Ch. 12 - Rose Care
  - Appendix B - Rose Varieties for the Low Desert
Recommended Gardening & Herb Books

- Earth-Friendly Desert Gardening (Arizona Master Gardener Press)
  - Environmentally responsible gardening & landscaping in the low desert
  - Growing in harmony with nature saves time, money, and resources
Recommended Books

The Arizona Low Desert Flower Garden (Kirti Mathura)

- Excellent reference on many local native wildflowers
- At-a-glance symbols indicate water requirements, along with whether the plants attract birds, butterflies, or caterpillars.
Recommended Books

- Composting for Dummies (Cathy Cromell)
  - Composting Basics
  - Composting Location
  - Composting Methods
  - Building your Pile
  - Beyond traditional composting
Shopping for Herbs to Plant

• “Big Box” Stores
  – Good for “basic” herb plants/seeds... standard culinary

• Chain Nurseries
  – Nice herb selection. Shop around!

• Local Family-owned Nursery
  – If they don’t have it, they’ll order it! Wider selection

• Botanical Garden or Arboretum Plant Sale
  – Interesting “native” or “regional” herbs

• Arizona Herb Association
  – Hard-to-find herbs, cheap!
Shopping for Herbs to Plant

• Pinch, sniff and taste the culinary herbs!
• Won’t taste any different when growing in your garden
• Make sure you like them before you buy!
• Catalog/Internet - Caution - wrong planting season & transit damage
Botanical (Latin) Names

• Many unrelated plants have similar common names

• One plant may have multiple common names (different languages/dialects)

• Learn the botanical name to be sure you get the CORRECT PLANT
Botanical (Latin) Names

• Common Names Can Be Confusing!
  • “Basil Mint”
  • “Cinnamon Basil”
  • “Oregano Thyme”
  • “Cuban Oregano”
    (also called “Spanish Thyme”)
    – NOT Oregano
    – NOT Thyme (Plectranthus amboinicus)
    – NOT from Cuba
    – NOT from Spain
Botanical (Latin) Names

• Common Names Can Be Confusing!

• Mexican Tarragon
  – Rootbeer Plant
  – Yerba Anis
  – Winter Tarragon
  – Poor Man’s Tarragon

• And…
• Aztec/Nahuatl – Tzitziqui, Teyatli
• Chinese (Cantonese)
  甜萬壽菊 [tìhm maahn sauh gūk]
• Chinese (Mandarin)
  甜萬壽菊 [tián wàn shòu jú]
• Danish – Mexikansk Esdragon
• German – Samtblume, Winterestragon, Mexicanischer Estragon
• French – Tagète, Estragon du Mexique
• English – Pericon, Mexican mint marigold, Winter tarragon, Mexican tarragon, Sweet mace, Spanish tarragon, Florida tarragon, Texas tarragon
• Spanish/Mexican – Yauhtli, Pericón Amarillo, Yerba Anis, Yerba Santa Maria, Anisillo
• Swedish – Mexikansk dragon
Botanical (Latin) Names

• What plant is this?
• “I don’t know…
  It’s in POLISH!!”

[Image of a plant with flowers]
Botanical (Latin) Names

• What plant is this?
• Matthiola bicornis
  – Maciejka Dwuroga
  – Annual Stock
  – Perfume Plant
  – Night Scented Stock
  – Evening Scented Stock
  – Evening Stock Flower
  – Evening Stock

• Common Names Can Be Confusing!
Botanical (Latin) Names

- FAMILY
  - LABIATAE/LAMIACEAE
    - GENUS
      - Mentha
      - Lavandula
      - Achillea
    - SPECIES
      - L. stoechas
      - L. latifolia
      - L. angustifolia
      - L. dentata
    - FORM
      - L. stoechas f. leucantha
    - SUBSPECIES
      - L. stoechas subsp. pedunculata
    - HYBRID
      - L. x intermedia
    - CULTIVAR
      - L. angustifolia 'Hidcote'
      - L. angustifolia 'Munstead'
      - L. x intermedia 'Grappenhall'
      - L. x intermedia 'Seal'
    - VARIETY
      - L. dentata var. candicans

Chart Courtesy of “Practical Herb Garden” by J. Houdret
A Quick Review of Propagation Methods

• Planting from Seed
  – Follow directions on package, adjusting for Arizona climate, seasons
  – Make sure to find out if you should sow inside or outside
A Quick Review of Propagation Methods

- Planting from Transplants
  - Break up root balls of root-bound plants
  - Most plants benefit from a light fertilizing (1/2 strength) when planted
A Quick Review of Propagation Methods

• Planting from Bulbs or Roots
  – Rule of Thumb: Plant twice as deep as the bulb or root is tall
A Quick Review of Propagation Methods

• Layering
A Quick Review of Propagation Methods

• Layering
A Quick Review of Propagation Methods

• Layering
A Quick Review of Propagation Methods

• Stem Cuttings
A Quick Review of Propagation Methods

• Stem Cuttings
A Quick Review of Propagation Methods

• Stem Cuttings
A Quick Review of Propagation Methods

- Root Division
A Quick Review of Propagation Methods

• Root Division
A Quick Review of Propagation Methods

• Root Division
A Quick Review of Propagation Methods

- Root Division
How to Trap a Mint

• Start with a 5-gallon (or larger) pot.
How to Trap a Mint

- With a pair of garden shears or a tree saw, remove the bottom of the pot.
How to Trap a Mint

• Dig a hole that is slightly wider than and almost as deep as the pot.
• Plant the pot, leaving about one to two inches above ground.
• Backfill and tamp down the soil outside of the pot.
How to Trap a Mint

• Remove the mint from its original pot by gently squeezing the sides of the pot to loosen the soil. Turn the pot upside down and encourage the plant to tumble into your hand.

• Gently scrape the sides and bottom of the root ball with your fingernails or a garden tool if the plant is root-bound (the roots have circled the pot).
How to Trap a Mint

- Fill the prepared 5-gallon pot with rich, well-composted soil.
- Plant the mint inside of the pot and gently press down the soil.
- Be sure to plant the mint in its new pot at the same level that it was in its original pot.
- Make sure that the soil inside of the pot is at the same level as the soil outside of the pot.
How to Trap a Mint

• Water well with a liquid fertilizer or starter solution at half the recommended strength.

• Make sure the soil is well-firmed around the plant. Check again after the water soaks in and add soil if necessary.
How to Trap a Mint

• Remember that mints also propagate by layering.
• Be sure to trim the stems of your mint so that they don’t lie on the ground and put out roots.
• Also, watch for and remove volunteer seedlings. Mints cross breed easily, and most of the seedlings will not taste like the original plant, or even taste very good.
How to Plant to Prevent Root Rot

• Dig a hole at least one foot deeper than the depth of the root ball of the plant you are planting, and three times as wide.

• Line the bottom of the hole at least four inches deep with medium-sized rocks (golf balls make a good substitute!).
How to Plant to Prevent Root Rot

• To help with soil drainage, combine your native soil with compost or mulch and pumice or perlite.

• Use one-third native soil, one-third compost or mulch, and one-third pumice or perlite.
How to Plant to Prevent Root Rot

- It’s easiest to mix the soils together in a large bucket.
- Make enough to re-fill your hole, plus enough to create a mound over the hole.
How to Plant to Prevent Root Rot

• Make a mound at least 12 inches high and 18 inches in diameter.
• Press and firm the entire mound to help prevent erosion.
How to Plant to Prevent Root Rot

• Remove the plant from its original pot by gently squeezing the sides of the pot to loosen the soil. Turn the pot upside down and encourage the plant to tumble into your hand.

• Gently scrape the sides and bottom of the root ball with your fingernails or a garden tool if the plant is root-bound (the roots have circled the pot).
How to Plant to Prevent Root Rot

• Place your plant in the center of the mound and gently press down the soil.

• Be sure to place the plant in the mound at the same level that it was in its original pot.
How to Plant to Prevent Root Rot

- Water well with a liquid fertilizer or starter solution at half the recommended strength.

- Make sure the soil is well-firmed around the plant. Check again after the water soaks in and add soil and gravel if necessary.
Fall Tasks for Established Herb Plants

• Remove Plants that Succumbed to the Summer Monsoons
  – Sages/Salvias
  – Thymes
  – Oreganos
  – Lavenders
  – Rosemarys
Fall Tasks for Established Herb Plants

- Prune off dead branches
- Add compost/mulch to your garden
- Some herbs benefit from light fertilizing
Fall Tasks for Established Plants

- Water deeply to remove salts from root zone

Leaf Tip Burn
Fall Tasks for New Herb Plants

- Soil Preparation
  - DRAINAGE is KEY!
  - Do NOT discard your native soil
  - Add organic amendments
  - Only add Nitrogen fertilizers to tropical, fast-growing herbs
  - Add gravel, coarse sand, pumice to increase drainage where needed
Let’s Talk About Dirt

- Original source: Decomposed ancient mountains
- Inorganic matter: ROCK
  - Many different particle sizes
  - Good structural basis for garden soil
  - Contains many of the essential mineral components necessary for plant growth
Let’s Talk About Dirt

• It is important to remember that soil in the Valley can be:
  • Often compacted, resulting in poor drainage
  • Sometimes so sandy that it drains quickly, resulting in no water retention
  • Generally nitrogen poor