

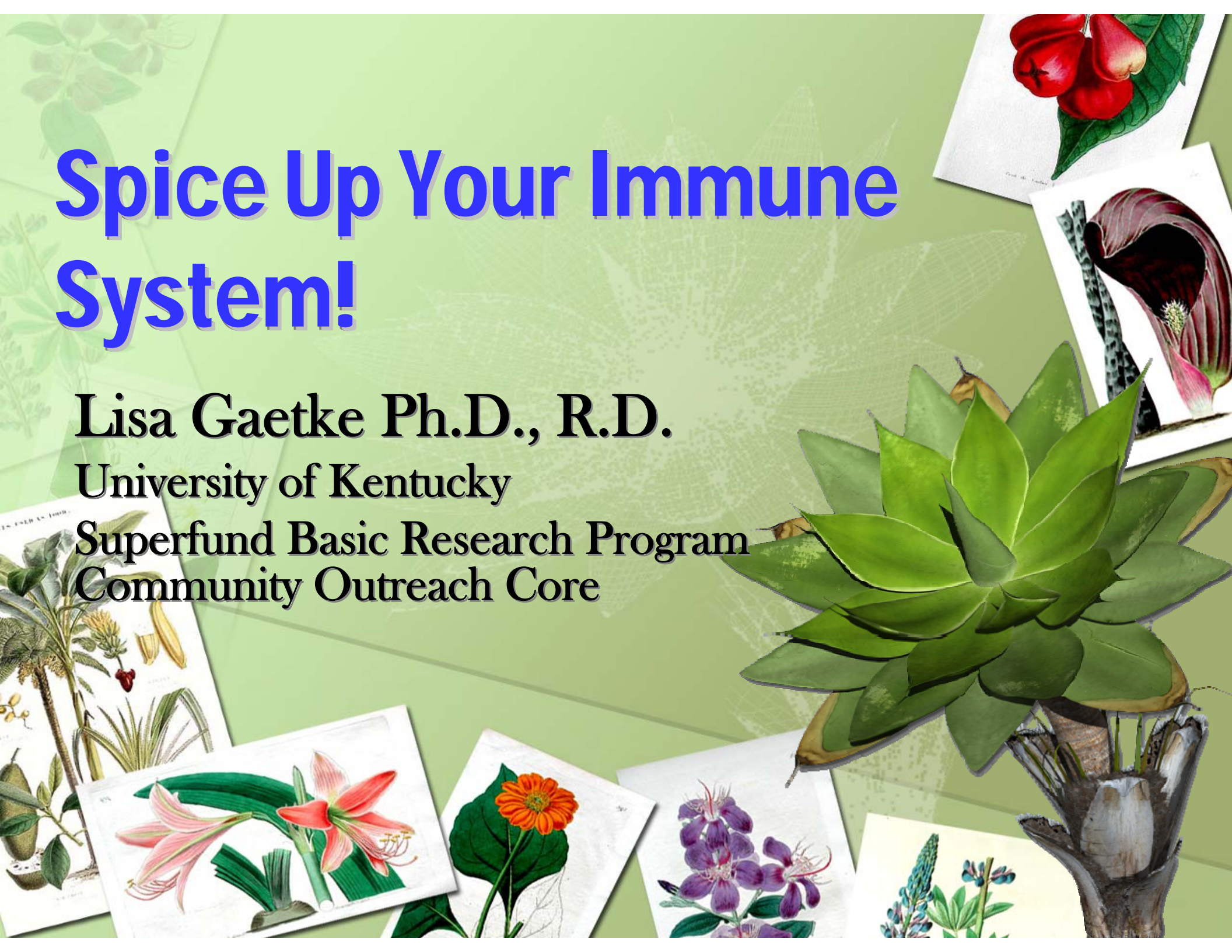
Spice Up Your Immune System!

Lisa Gaetke Ph.D., R.D.

University of Kentucky

Superfund Basic Research Program

Community Outreach Core

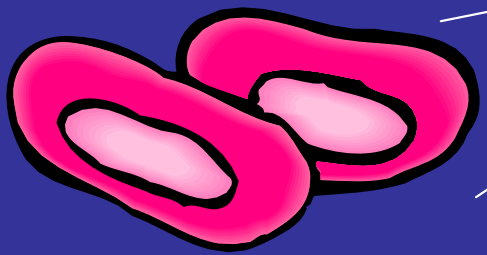
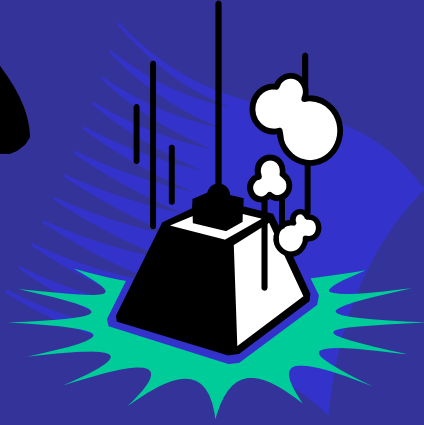


Outline

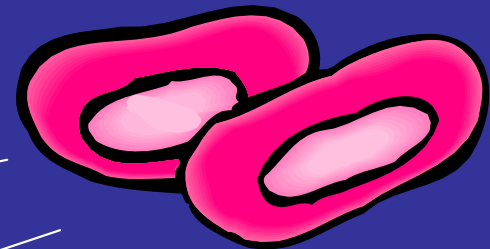
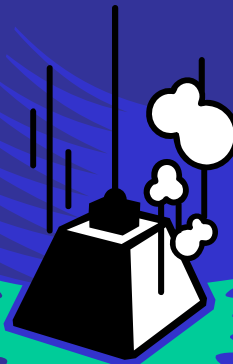
- Introduction to the Immune System
- Herb vs. Spice: What is the difference?
- In depth look at herbs and spices
- Taste Testing... mmmm!!!



Help!
They're
attacking me!



I'm fighting back with food!



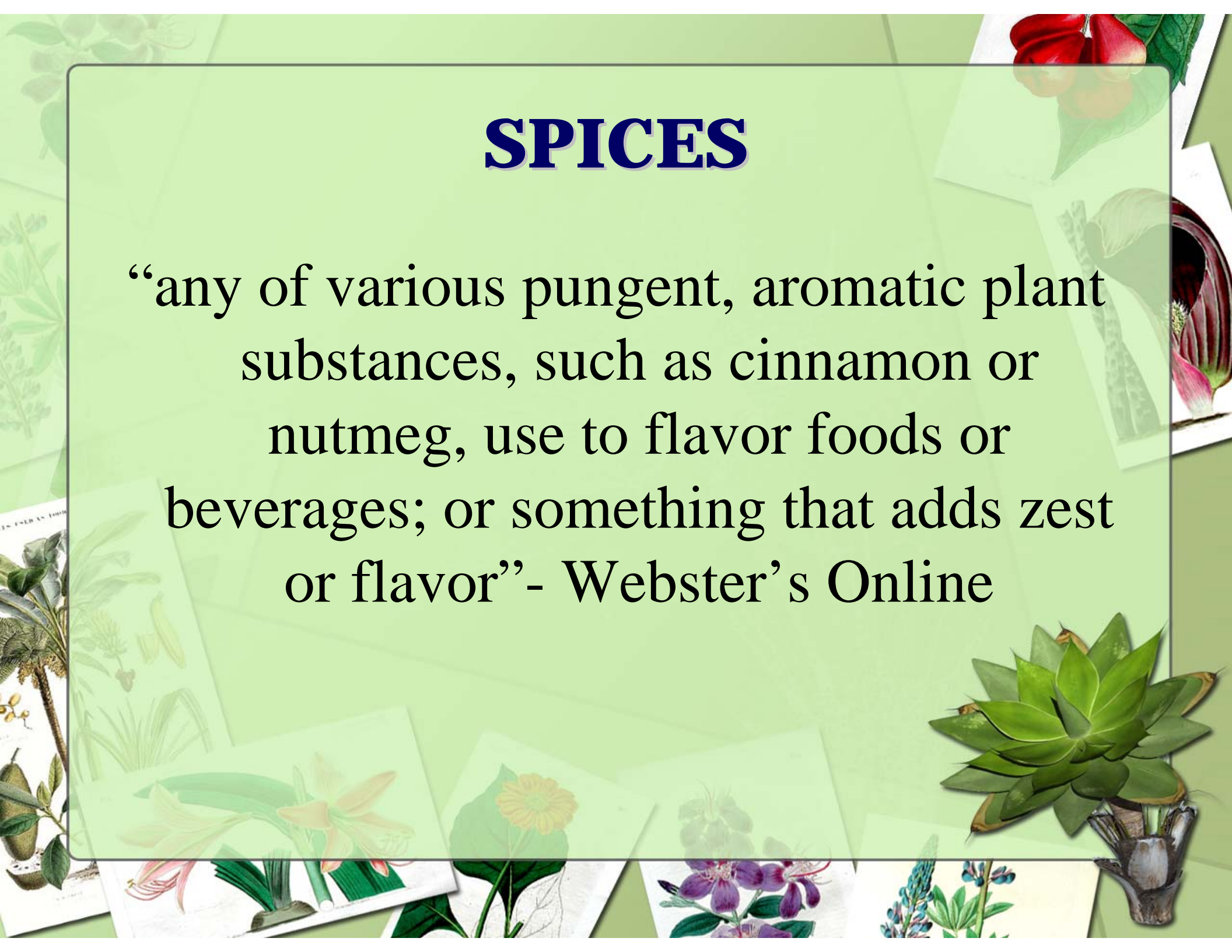
HERBS and SPICES

- Used for:
 - Taste
 - Food preservation
 - Food sanitation
 - Variety
 - Gifts



SPICES

“any of various pungent, aromatic plant substances, such as cinnamon or nutmeg, use to flavor foods or beverages; or something that adds zest or flavor”- Webster’s Online



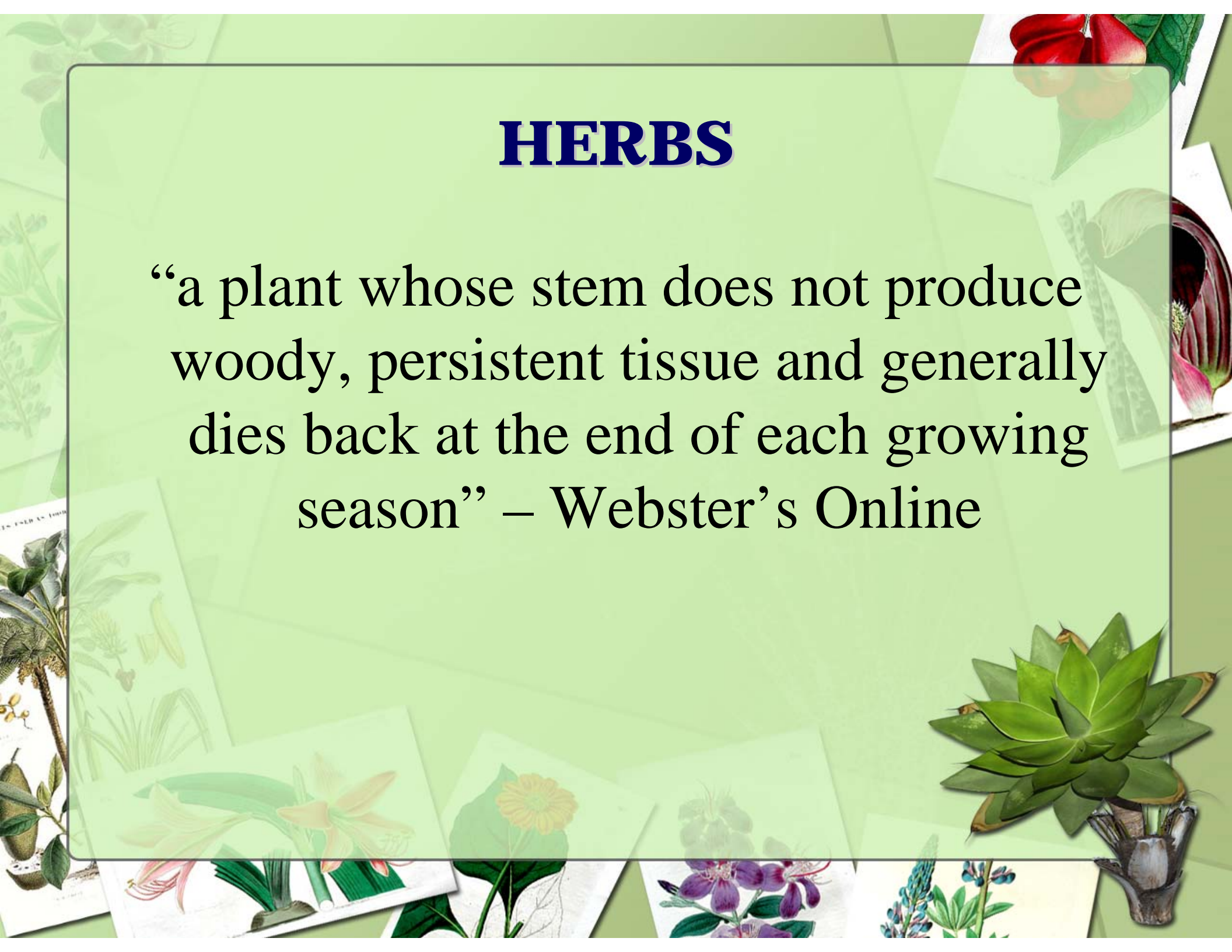
Spices (cont.)

- Obtained from the roots, flowers, fruits, seeds, or bark
 - Can be woody or herbaceous plants
- Native to warm tropical climates
- Potent and strongly flavored
 - Used in small amounts



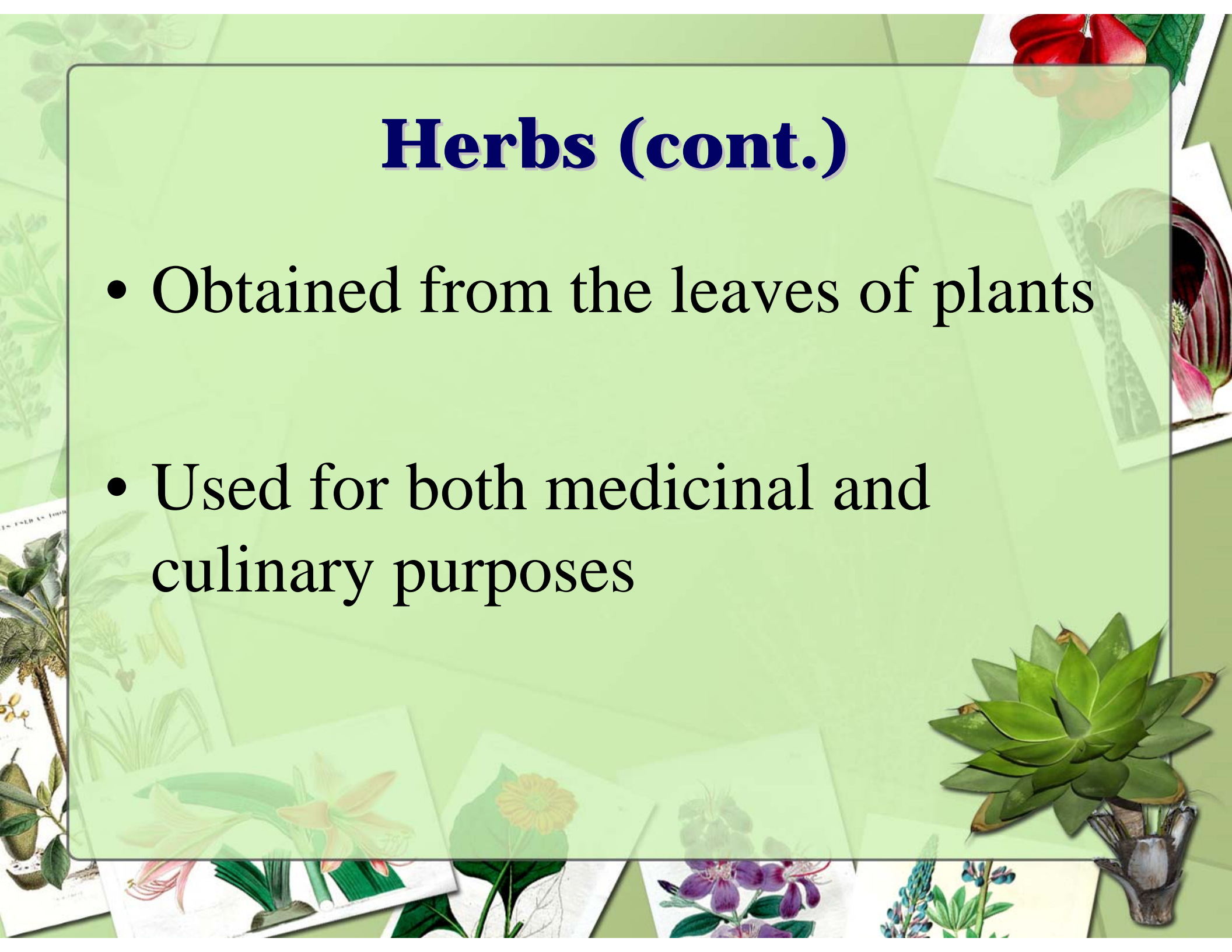
HERBS

“a plant whose stem does not produce woody, persistent tissue and generally dies back at the end of each growing season” – Webster’s Online



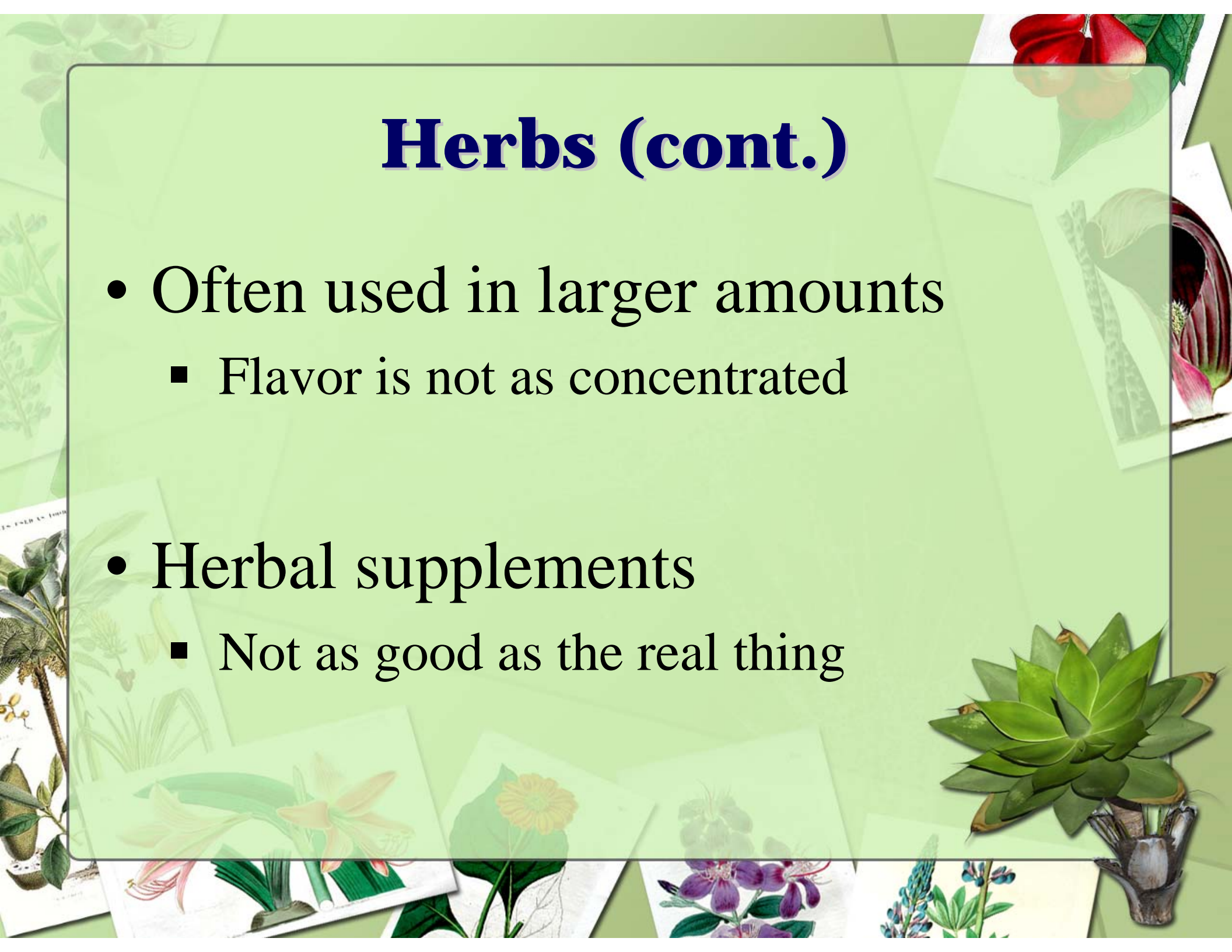
Herbs (cont.)

- Obtained from the leaves of plants
- Used for both medicinal and culinary purposes

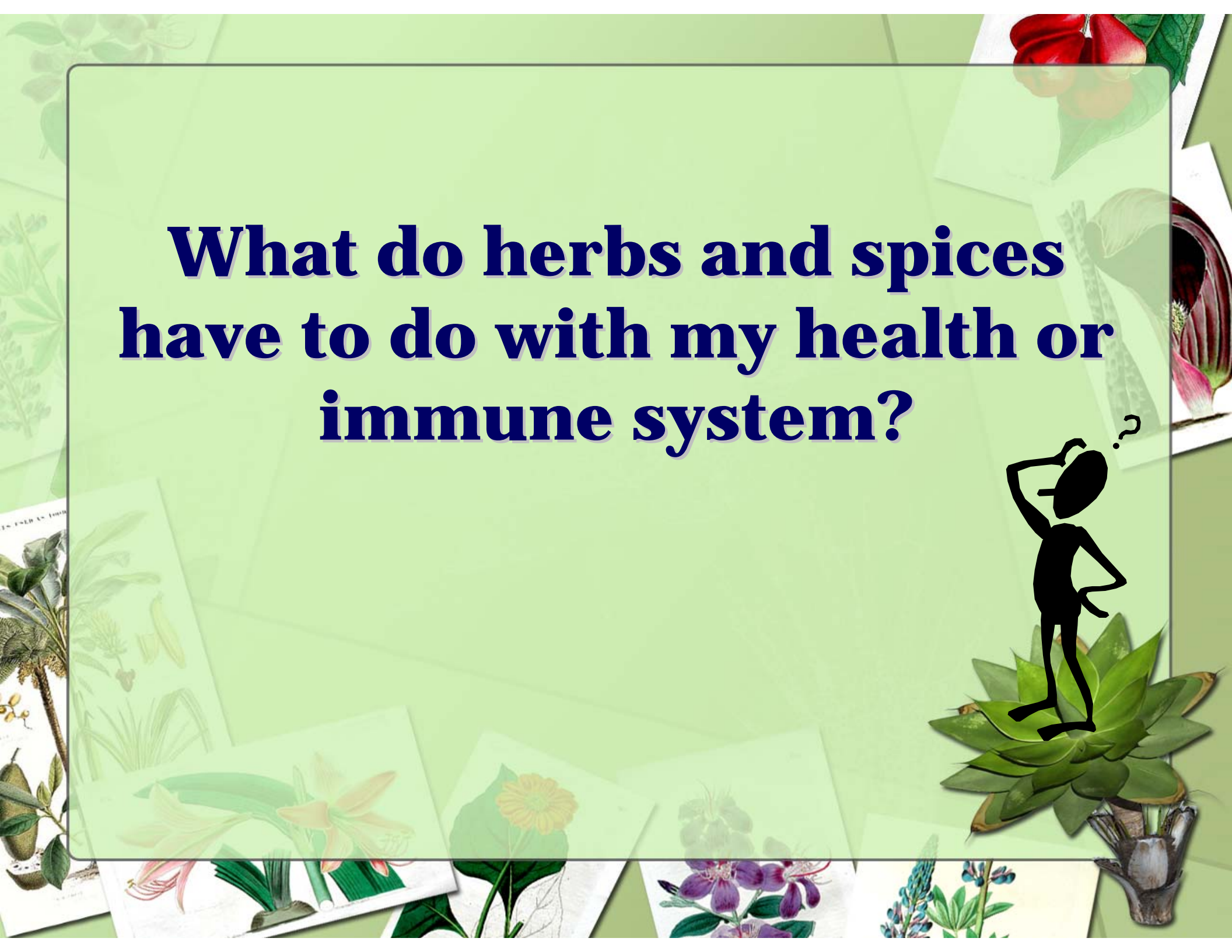


Herbs (cont.)

- Often used in larger amounts
 - Flavor is not as concentrated
- Herbal supplements
 - Not as good as the real thing



**What do herbs and spices
have to do with my health or
immune system?**



Antioxidants

- Prevents bad things from forming inside of our bodies
 - Prevents oxidation
 - Prevents/reverses free-radical formation

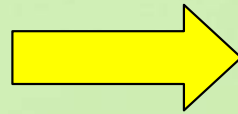


Example of Free Radical Formation



COOKING OIL

OXYGEN,
LIGHT,
OR HEAT



RANCID
COOKING
OIL



SPICES



CINNAMON

- One of the oldest spices known:
 - Biblical times: use in anointing oils
 - Ancient Rome: mourners burnt cinnamon in funeral pyres to cover scent of burning flesh
 - Later Europe: status symbol— could only be obtained by the rich



Cinnamon (cont.)

- Varieties:
 - Chinese: most common form in US
 - Ceylon: slightly sweeter and more difficult to find
- Forms:
 - Stick
 - Ground



Health Benefits of Cinnamon

- Antioxidant benefits:
 - Heart: decreases inflammation
 - Diabetes: improves ability to respond to insulin
- Food Preservation and Safety
 - Good preservative
 - Decreased growth of food-borne pathogens



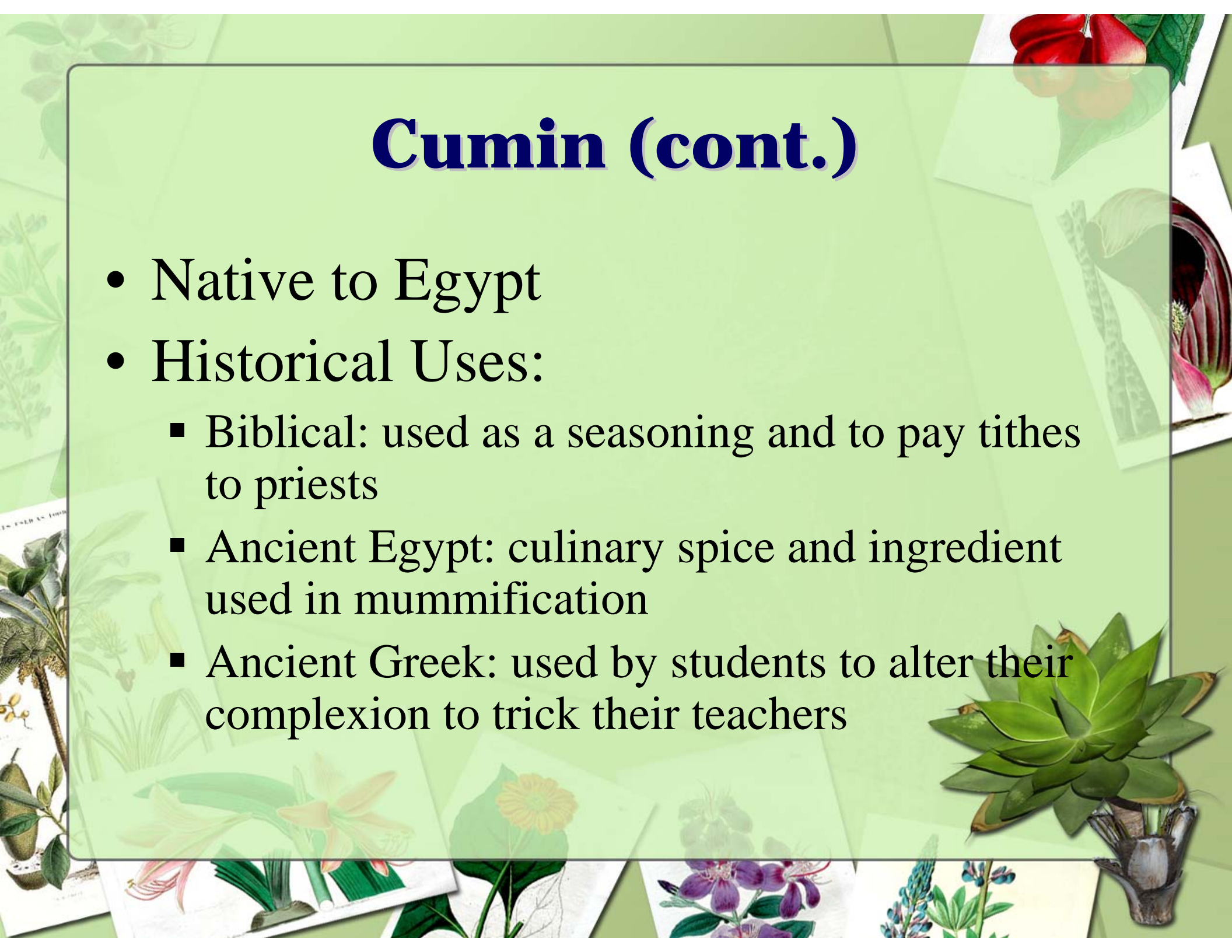
CUMIN

- Commonly used in Mexican/Tex-Mex and Middle Eastern/Indian Cuisine
- Key component of Curry Powder
- Small seed
 - Whole and ground forms



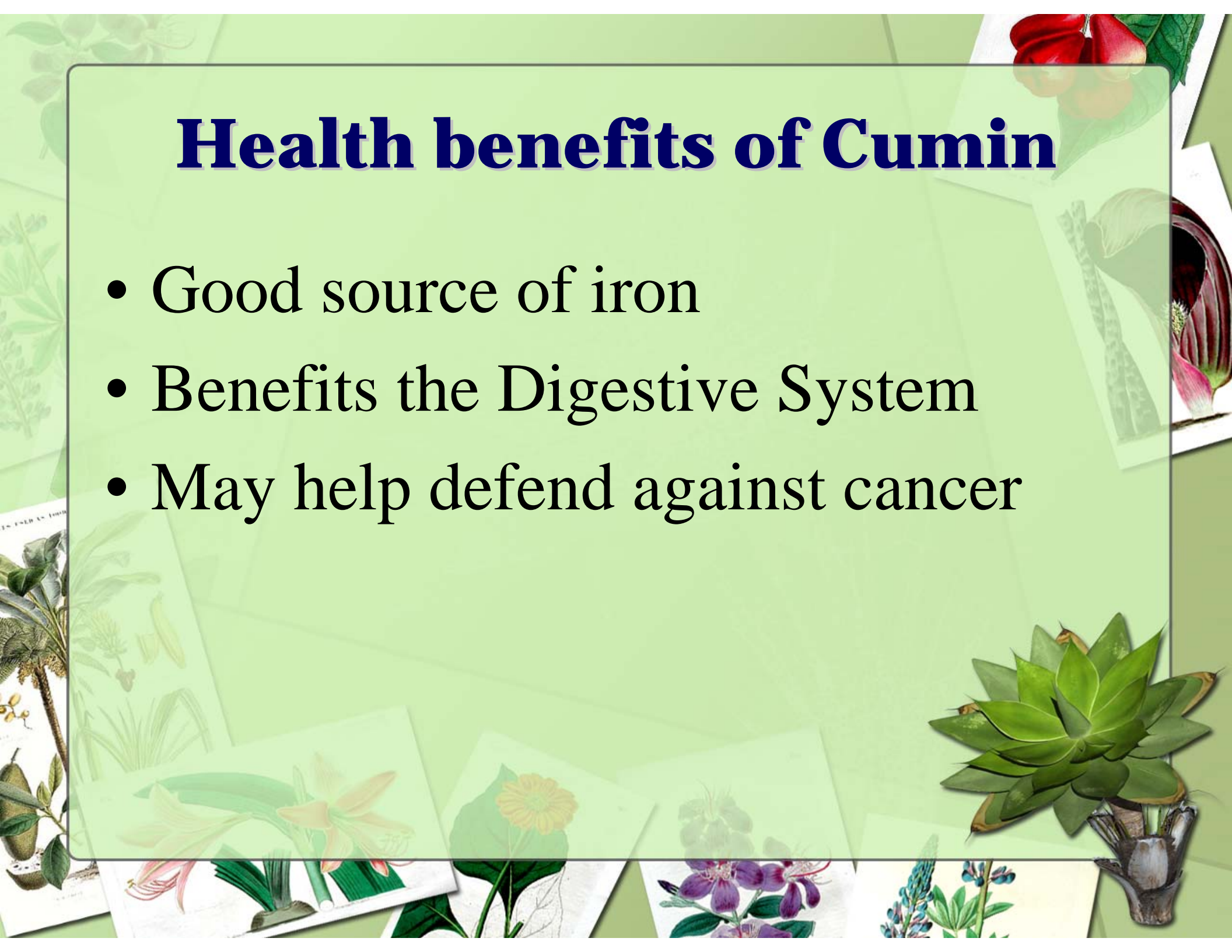
Cumin (cont.)

- Native to Egypt
- Historical Uses:
 - Biblical: used as a seasoning and to pay tithes to priests
 - Ancient Egypt: culinary spice and ingredient used in mummification
 - Ancient Greek: used by students to alter their complexion to trick their teachers



Health benefits of Cumin

- Good source of iron
- Benefits the Digestive System
- May help defend against cancer



BLACK PEPPER

- Most popular of all spices
- Available all year round
- Variety of colors, each with different spice characteristics
 - Whole and ground forms



Black Pepper (cont.)

- Historical Uses:
 - Ancient Greece: valued as spice, a currency and an offering to the gods
 - Used to cover up “less-than-fresh” foods
 - Catalyzed much of the spice trade and exploration of various lands



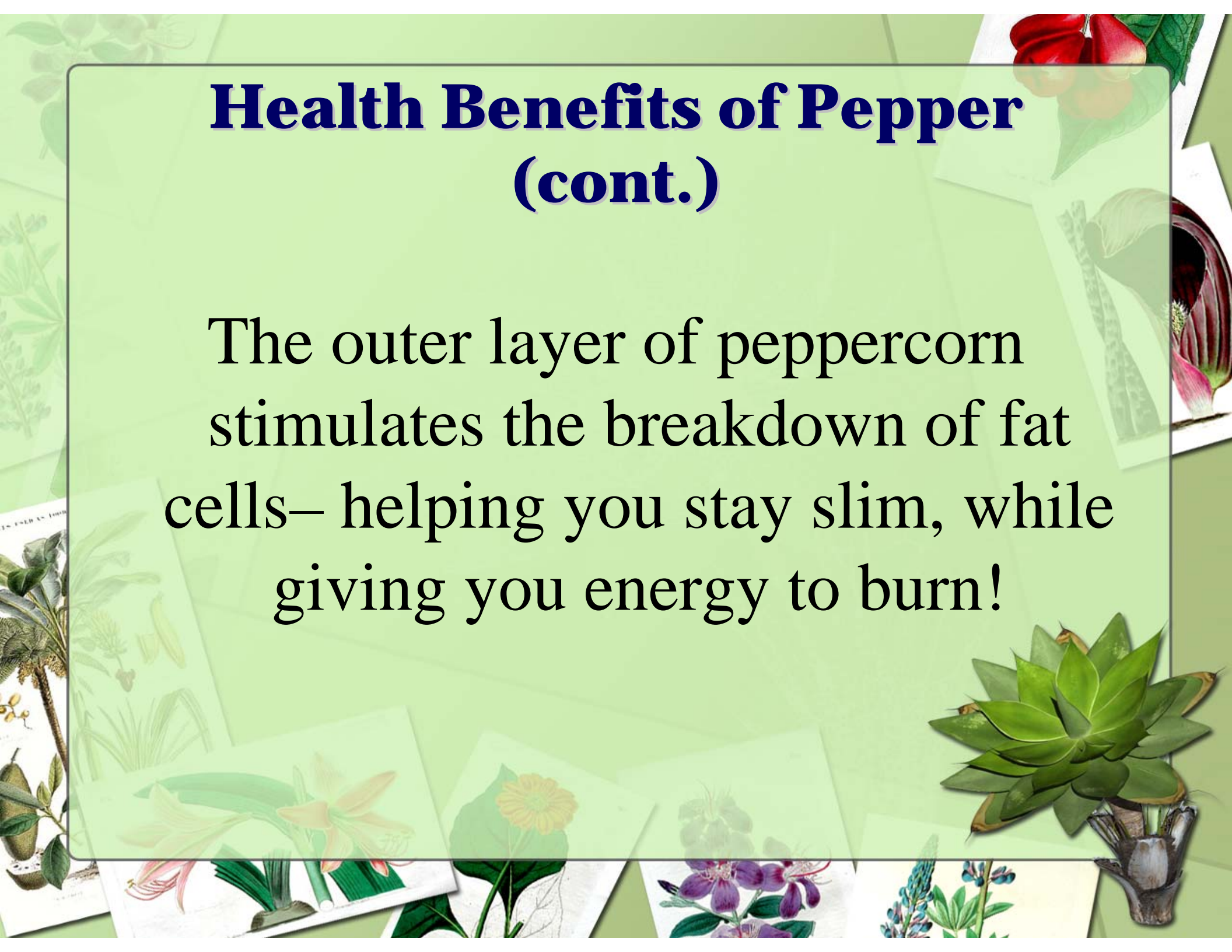
Health Benefits of Pepper

- Digestion:
 - Stimulates taste buds
 - Promote stomach acid secretion
 - Decreases the formation of intestinal gas
- Has antioxidant and anti-bacterial properties



Health Benefits of Pepper (cont.)

The outer layer of peppercorn stimulates the breakdown of fat cells— helping you stay slim, while giving you energy to burn!



TURMERIC

- Also called “Indian Saffron” because of its characteristic deep yellow color
- Native to southern India and Indonesia



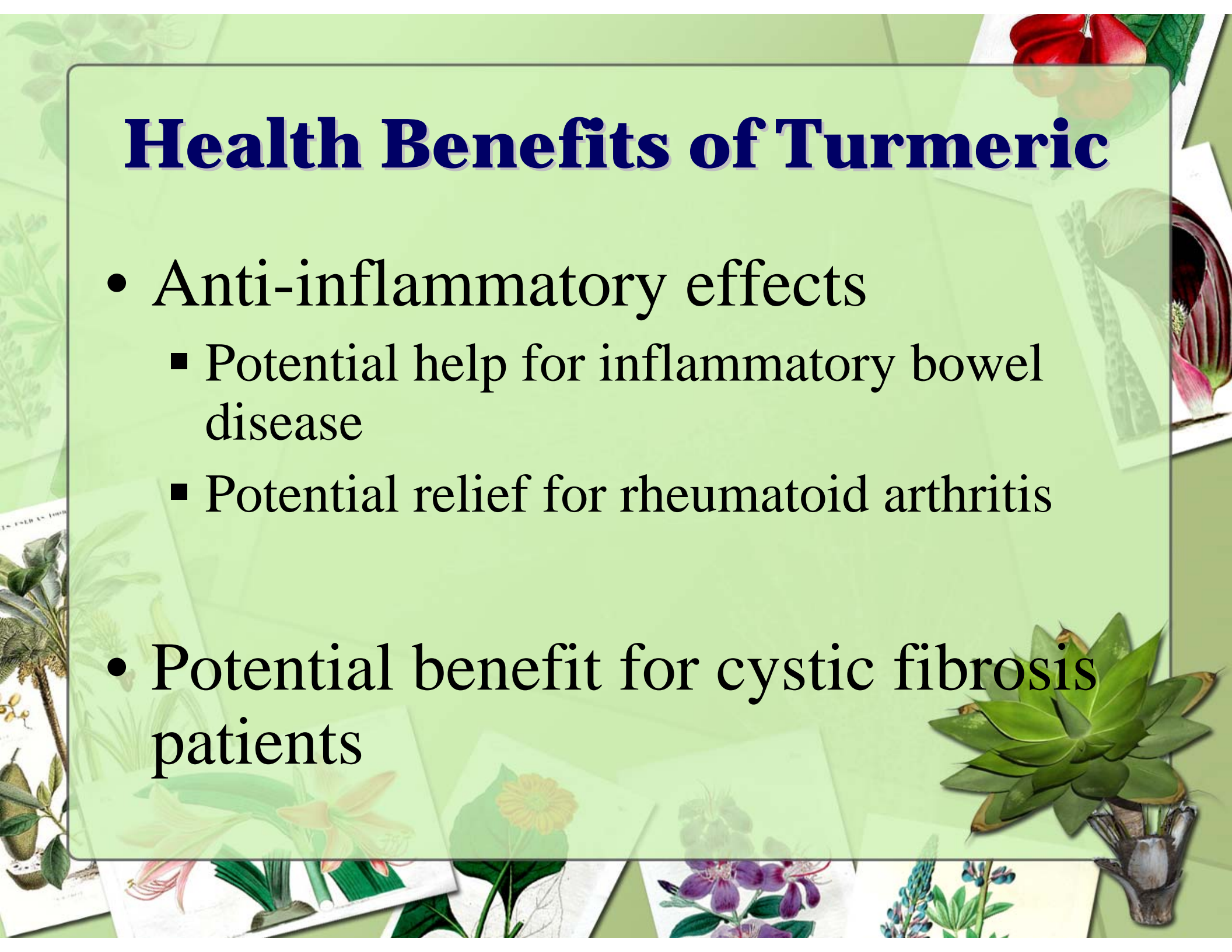
Turmeric

- Historical Uses:
 - Used as a condiment, healing remedy, and textile dye
 - Used in Indian and Chinese medical systems as an anti-inflammatory agent



Health Benefits of Turmeric

- Anti-inflammatory effects
 - Potential help for inflammatory bowel disease
 - Potential relief for rheumatoid arthritis
- Potential benefit for cystic fibrosis patients



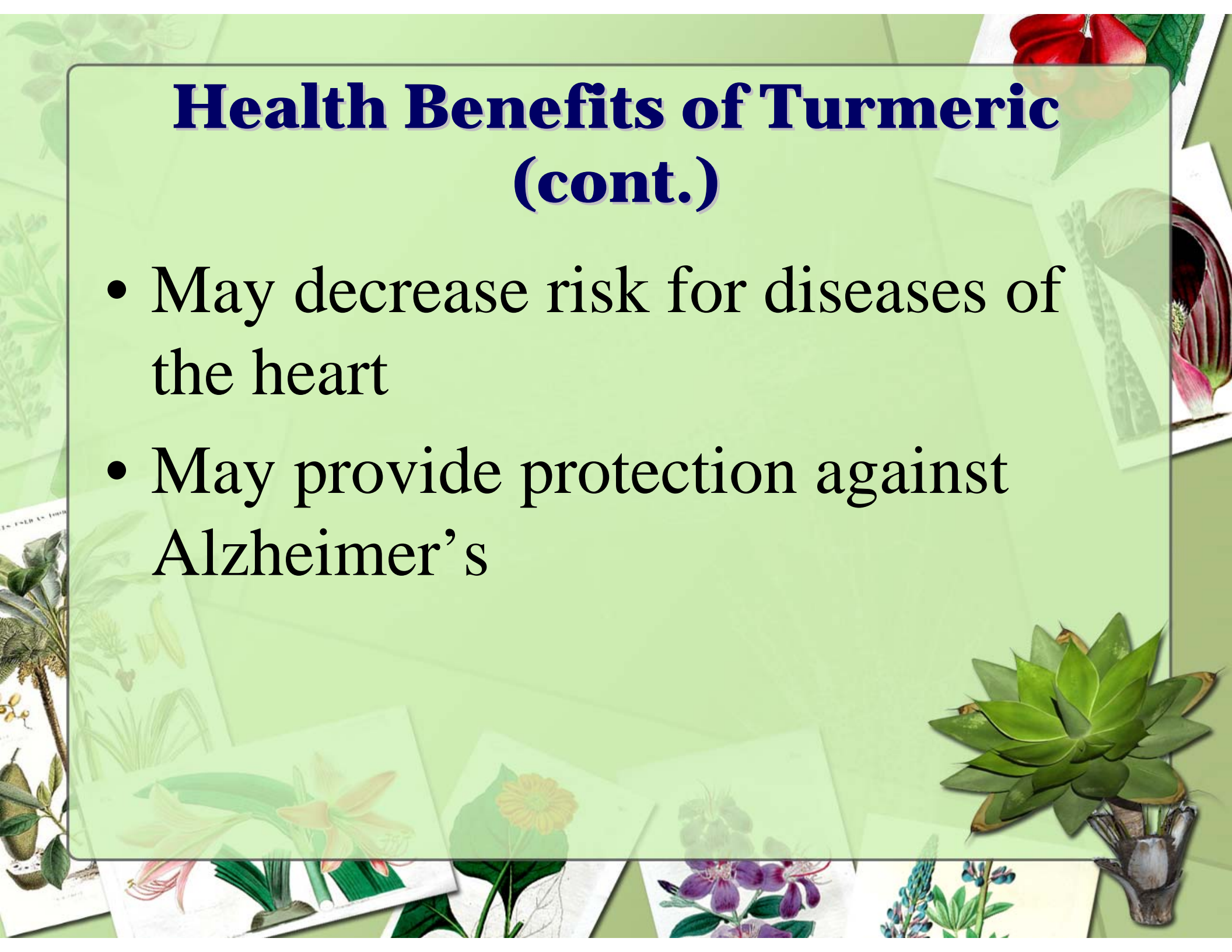
Health Benefits of Turmeric (cont.)

- Antioxidant Benefits:
 - May reduce colon cancer and help the body destroy cancer cells
 - May reduce the risk of developing childhood leukemia
- May improve liver function



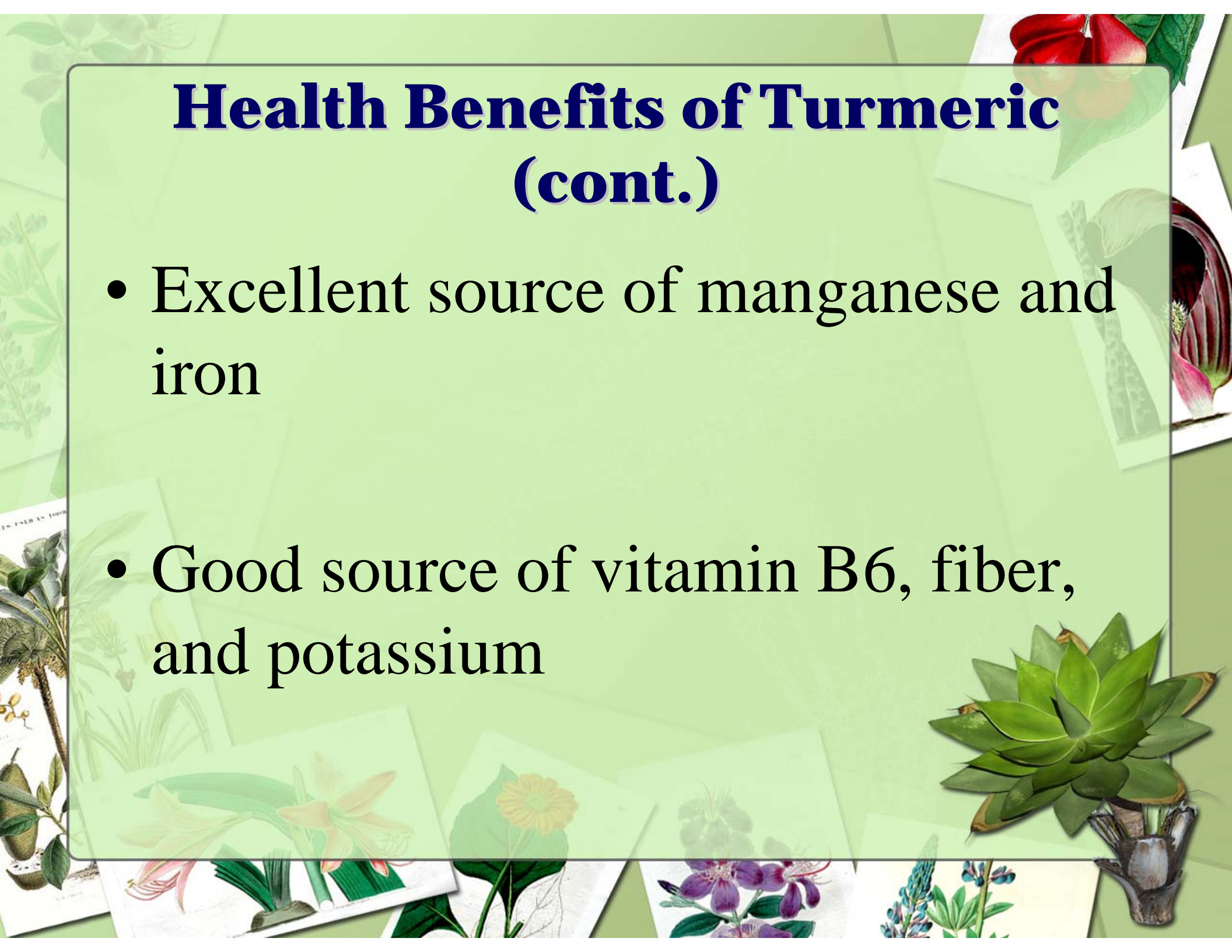
Health Benefits of Turmeric (cont.)

- May decrease risk for diseases of the heart
- May provide protection against Alzheimer's



Health Benefits of Turmeric (cont.)

- Excellent source of manganese and iron
- Good source of vitamin B6, fiber, and potassium



CLOVES

- Traditionally used for baked goods, ciders, main dishes, and soups
- History:
 - 200 BC: used as breath fresheners
 - Middle Ages: masked the flavor of poorly preserved food



Health Benefits of Cloves

- Studied in Research:
 - Prevention of toxicity from environmental pollutants
 - Prevention of digestive tract cancers
 - Prevention of joint inflammation



Health Benefits of Cloves (cont.)

- Mild anesthetic and anti-bacterial agent
 - Used in mouth wash and throat sprays
- Anti-inflammatory:
 - Contains a variety of flavonoids



Health Benefits of Cloves (cont.)

- Excellent source of manganese
- Good source of fiber, vitamin C, and omega 3-fatty acids
- Good source of calcium and magnesium



GINGER

- Native to southeastern Asia
- History:
 - Mentioned in ancient writings
 - Prized for aromatic, culinary, and medicinal properties



Health Benefits of Ginger

- Effective against intestinal distress
 - Helps relieve gas
 - Helps relieve motion sickness
 - Helpful in preventing nausea/vomiting of pregnancy



Health Benefits of Ginger (cont.)

- Anti-inflammatory properties
 - Helps against rheumatoid and osteoarthritis



Health Benefits of Ginger (cont.)

- May help against colon cancer
- May promote immune system health
 - Can promote healthy sweating during colds and flu



HERBS



THYME

- Historical Uses:
 - Ancient Egypt: embalming agent
 - Ancient Greece: used as incense
 - Medieval Times: symbol of courage and admiration
 - Antiseptic mouthwash and topical treatment



Health Benefits of Thyme

- Antioxidant benefits
 - Contains several flavonoids
- Anti-microbial Activity
 - Can prevent food contamination
 - Can decontaminate contaminated foods!



OREGANO

- Common to Mediterranean Cuisine
- Historical Uses:
 - Greek & Roman: Oregano was a symbol of joy and happiness
 - Unknown in US until 20th century when GIs returning from Italy made it known



Health Benefits of Oregano

- High Antioxidant Activity
 - 42x's that of apples
 - 30x's that of potatoes
 - 12x's that of oranges
 - 4x's that of blueberries



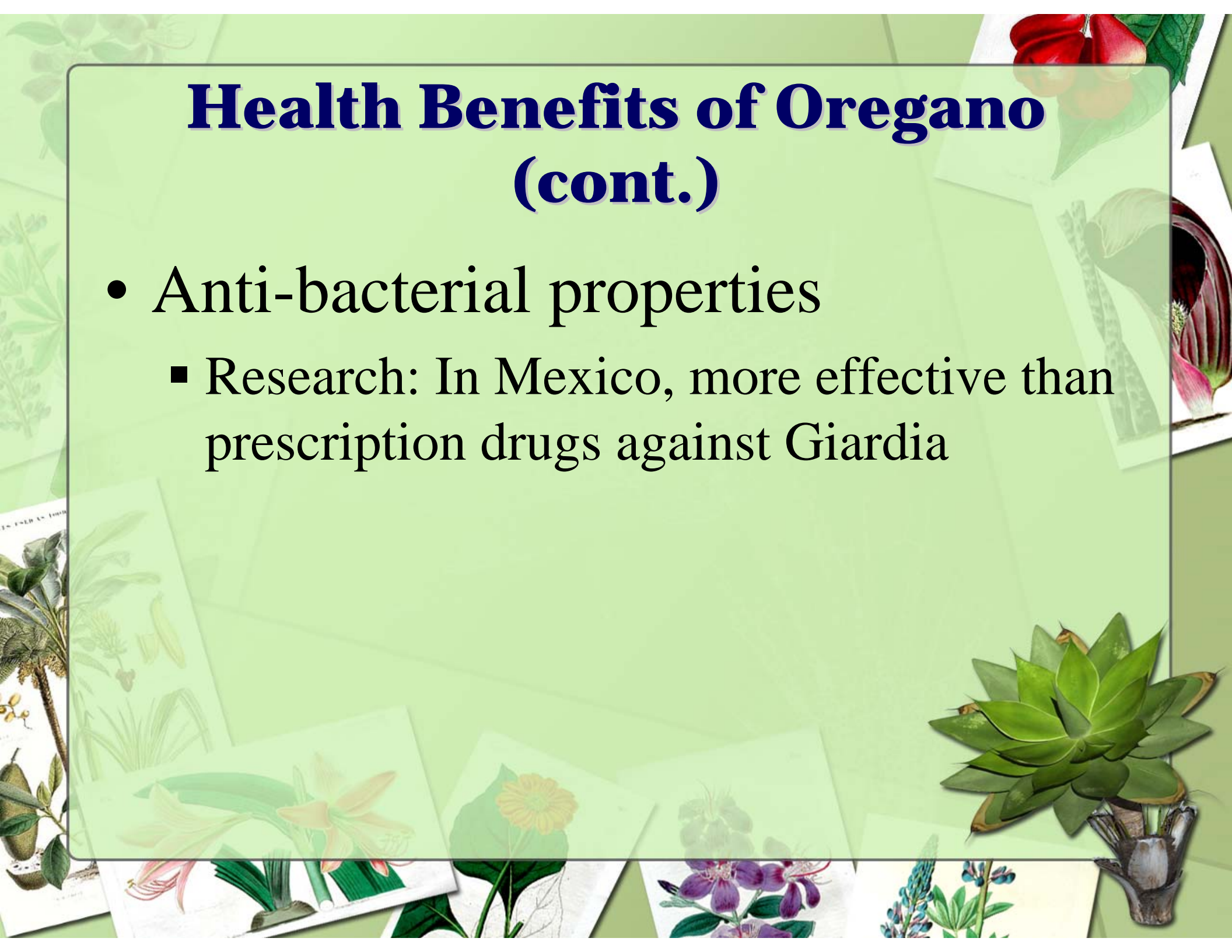
Health Benefits of Oregano (cont.)

- Nutrient Dense
 - Very good source of fiber, iron, and manganese
 - Good source of calcium, vitamin C, vitamin A, and omega 3-fatty acids



Health Benefits of Oregano (cont.)

- Anti-bacterial properties
 - Research: In Mexico, more effective than prescription drugs against Giardia



BASIL

- Basil: means “royal” (Greek)
- History:
 - India: cherished icon of hospitality
 - Italy: symbol of love



Health Benefits of Basil

- Good for your heart!
 - High antioxidant properties
- Anti-inflammatory
 - Help with rheumatoid arthritis and inflammatory bowel disease



Health Benefits of Basil (cont.)

- Antibacterial Properties
 - May be effective against antibiotic resistant bacteria!
- Good source of vitamin A, potassium, and vitamin C
- Very Good Source of Iron and Calcium



PARSLEY

- Most popular herb
- Native to Mediterranean region of Southern Europe
- Types:
 - Curly
 - Italian Flat Leaf
 - Hamburg



Parsley (cont.)

- History:
 - Ancient Greece: sacred
 - adorned visitors of athletic contests
 - Decorated tombs of deceased
 - Garnish



Health Benefits of Parsley

- Cancer Prevention
 - Inhibit tumor cell growth
 - Help neutralize certain carcinogens
- Antioxidant properties



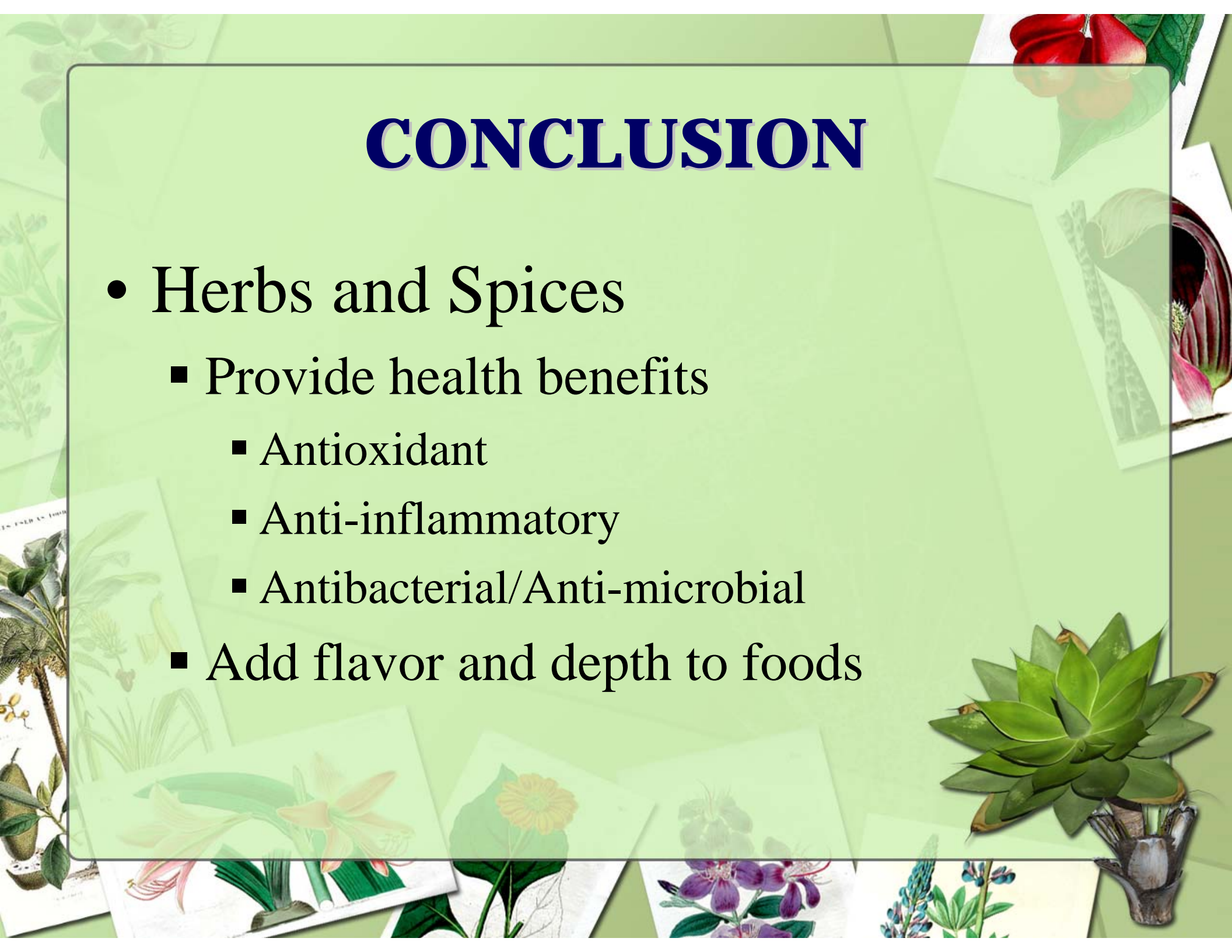
Health Benefits of Parsley (cont.)

- Anti-inflammatory:
 - May help against rheumatoid arthritis
- Excellent source of folic acid, beta-carotene, and vitamin C

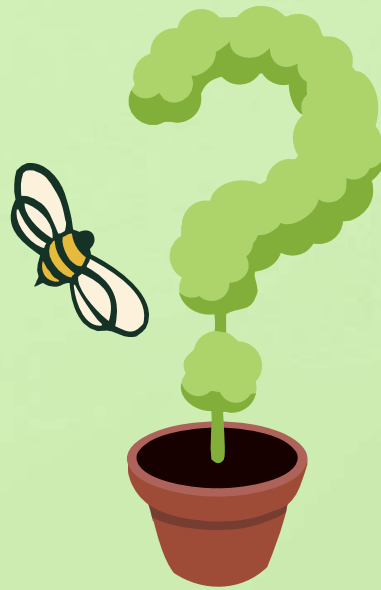


CONCLUSION

- Herbs and Spices
 - Provide health benefits
 - Antioxidant
 - Anti-inflammatory
 - Antibacterial/Anti-microbial
 - Add flavor and depth to foods



QUESTIONS?





**University of Kentucky
Superfund Basic Research Program
Community Outreach Core
Website**

www.uky.edu/Research/Superfund/

The background of the slide is a light green color with a collage of various botanical illustrations. These include a red flower in the top right, a purple flower in the middle right, a green succulent in the bottom right, and several other plants and flowers scattered throughout. The text is centered in a dark blue, bold font.

**University of Kentucky
Superfund Basic Research Program
Community Outreach Core**

Supported by NIEHS/NIH (ES 07380)