MASTER GARDENER
UNIVERSITY OF WISCONSIN—EXTENSION

MG Training: Botany Video Presentations

Introduction to Plants

Horticulture: the art and science of growing plants

Botany: the study of plants

Plant Diversity

Taxonomic Hierarchy

- Kingdoms
- Division (plants) / Phylum (animals)
- Class
- Order (important for insects)
- Family (important for plants)
- Genus
- Species

Types of Plants

There are more types. These are the broad classifications which may be found in gardens.

- Mosses
- Ferns
- Angiosperms
    - Monocotyledons

    - Dicotyledons
- Gymnosperms
    - Conifers

What is a Plant?

- Plants are stationary
- Plants make their own food
- Plant respond to their environment
- Plants have localized regions of growth

Plant Parts

Vegetative Organs

- Leaves
- Stems
- Roots
- Growing points (meristems)

Reproductive Organs (*not mentioned*)

- Flowers

Tissues

- Epidermis
    - Cuticle
    - Stomates
    - Guard Cells
- Vascular Tissue
    - Xylem Cells

    - Phloem Cells
- Ground Tissue
    - Mesophyll Cells
    - Pith
    - Cortex

Plant Names

- Common Names
- Scientific Names

Genus species

Rules

- Based on the Latin language
- Is italicized (typed) or underlined (hand written)
- The genus is capitalized
- The specific epithet is not capitalized
- The combination of the two words is unique

More taxonomic designations

- Variety (var.)
- Cultivar (cv.)
- Trademark & Registered Trademark
- *See your training manual (Botany, Plant Propagation) for more!*

Using scientific names (example)

- Silver maple (*Acer saccharinum*)
- *Acer saccharinum, A. platanunus*, *A. rubrum*
- “A single type of maple” *Acer sp*.
- “Multiple types of maples” *Acer spp*.

Hybrids

- Produced by crossing two or more species
- A × (multiplication sign) is normally used to denote hybrid plants
    - The × after the genus name indicates two species in that genus were crossed to produce the hybrid
    - The × before the genus name indicates that this plant is a hybrid of two genera

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Plant Physiology

Photosynthesis

Respiration

Transpiration

Evapotranspiration

Plants and the Environment

Light

Air

Water

Temperature