

What's Bugging My Trees

Prairie Village Tree Board

Fall Seminar

October 13, 2021

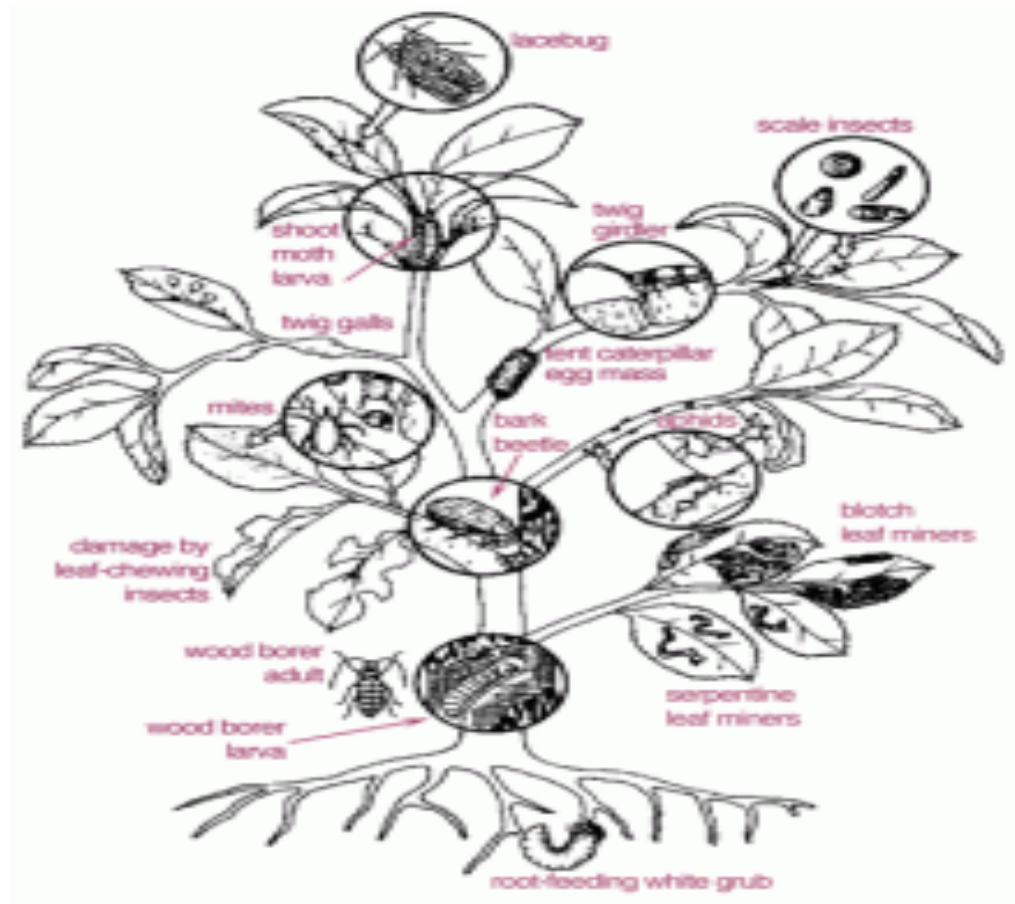
We All Want to Protect our Trees

- ▶ Converts carbon dioxide to oxygen
- ▶ Increases water infiltration into the soil
- ▶ Reduces surface runoff and erosion
- ▶ Reduces dust
- ▶ Provides a micro-ecosystem that effectively breaks down pollutants
- ▶ Moderates summer temperatures
- ▶ Creates a pleasant “people” space

Importance of *Maintaining Your Trees:*

- ▶ Healthy trees have fewer pests
- ▶ Healthy they are more tolerant of pests
- ▶ Life cycle: Recognize that Plant needs change with stages in their life cycle
- ▶ Frequent Maintenance helps us Identify and Mitigate problems as they arise

A problem Arises - What's Next



Integrated Pest Management (IPM) and Plant Health Care (PHC)

IPM is a concept that was developed in the agriculture industry in the 1950s and 1960s in response to outcries about the overuse of organochlorine pesticides such as DDT and chlordane.

IPM incorporates a variety of management strategies including cultural, mechanical, biological and chemical methods.

Plant Health Care, coined by the International Society of Arboriculture, helps to define IPM techniques as they apply to tree care and landscape management

Stress Factors

Predisposing Factors - Putting a healthy plant in the wrong place

- ▶ Planting Trees in a site where root spread will be restricted due to soil compaction or hardscape features
- ▶ Planting Trees intolerant of wet soil in heavily irrigated lawns
- ▶ Planting Trees susceptible to iron chlorosis in soils with high PH value
- ▶ Failure to structurally train young trees
- ▶ Planting Trees in too much shade or sun

- ▶ Inciting Factors - Healthy plant is attacked by primary insect, disease, or physical disorder
 - ▶ Improper planting techniques - planting too deep, mulch volcanoes
 - ▶ Soil Compaction - most common stress factor
 - ▶ Drought
 - ▶ Leaf chewing insects - caterpillars and sawfly larva
 - ▶ Leaf sucking insects - aphids and leafhoppers
 - ▶ Bark Damage from lawnmowers, weed trimmers
 - ▶ Bark cankers and frost cracks from rapid winter temperature changes coupled with winter drought
 - ▶ Invasive Pest - Emerald Ash Borer
 - ▶ Pests that transmit disease

Contributing Factor - Any stress factor that attacks a plant that is already stressed

- ▶ Bark Beetles and Borers are secondary to soil compaction, drought, and restricted rooting systems - Attracted to dead and diseased wood on the plant
- ▶ Cytospora fungus is secondary to soil compaction, drought, and restricted rooting systems - Impacting Spruces
- ▶ Girdling roots are secondary to planting too deeply

How Do I Start?

- ▶ Correctly Identify the Tree - Reduces the range of problems
 - ▶ PlantNet, LeafSnap, iNaturalist, Seek, Google Lens, Picture This
- ▶ Correctly Identify the Pest/Disorder - If you can
- ▶ Take Pictures, Take Pictures , Take Pictures
- ▶ Correctly Identify as many stressors that may apply
- ▶ What part has the Weather Played?
- ▶ Seek Help
- ▶ Access what kind of damage has occurred - does it warrant management efforts - have aesthetic thresholds been exceeded? Has the plant exceeded it's life span
- ▶ What management options will be effective? Cultural, Mechanical, Bionaturals, Removal, or Pesticides?

Who Can Help?

- ▶ Johnson County Extension Office Website - www.johnson.k-state.edu
- ▶ The Johnson Country Extension **Garden Hotline** is staffed by trained EMG volunteers and Extension staff who will assist you with questions. Phone: (913) 715-7050. Email: garden.help@jocogov.org
- ▶ Kansas Forestry Service - www.kansasforests.org/
- ▶ Kansas State Extension Entomology Blog - <https://blogs.k-state.edu/kansasbugs/2021>
- ▶ Missouri Botanical Gardens - www.missouribotanicalgarden.org/PlantFinder
- ▶ Certified Arborist - www.isa-arbor.com
- ▶ Raymond A. Cloyd Professor and Extension Specialist Horticultural Entomology/Integrated Pest Management Phone: 785-532-4750 Fax: 785-532-6232 e-mail: rcloyd@ksu.edu

Plant Health Care Practices to Reduce Pests

- ▶ Plant Selection - Put the right plant in the right place
- ▶ Soil Management - type, compaction, drainage, aeration
- ▶ Water and Irrigation Management
- ▶ Cultural care - ph, fertilization, mulching, soil test
- ▶ Understand Weathers Influence on Plant Growth and Pest Potential
- ▶ Understand Mechanical Methods to Manage Pests
- ▶ Use Bionaturals for pest management
- ▶ If required - use appropriate pesticides to manage the problem at the correct rate and at the correct time of year.

Life Cycle Maintenance Table

Table 2 – Influence of Life Cycle on Cultural Practices for Trees

Growth Phase	Irrigation Water Need	Fertilization	Pruning	Pest Tolerance
Nursery production	Water = Growth	Fertilizer pushes desirable top growth.	<i>Structural training</i> desirable.	LOW Could influence sales.
Establishment	CRITICAL Trees are under water stress due to the reduced rooting system.	None to very little as high nitrogen forces canopy growth at the expense of root growth.	Heavy pruning slows root establishment.	LOW due to drought imposed by reduced root system.
Growth	Water = Growth Good tolerance to short-term drought. However, short-term drought will slow growth.	IF other growth factors are not limiting, fertilization supports growth.	<i>Structural training</i> sets the tree's structural integrity for life.	HIGH, except in stress situations.
Maturity	Good tolerance to short-term drought. Severe drought leads to decline.	Need for fertilizer reduces. Over fertilization could force canopy growth that the roots cannot support in summer heat and wind.	Maturing trees that were structurally trained while young have minimal needs for pruning.	HIGH, except in stress situations.
Decline	Intolerant of drought	Evaluate stress factors as fertilization can accelerate stress in some situations.	Pruning limited to <i>cleaning</i> (removal of dead wood). Do not remove healthy wood on stressed trees.	LOW, pests could accelerate decline.