

Trees with Minimal Insect and Disease Problems for Kentucky Landscapes

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Healthy, attractive landscapes without damaging insects and diseases are the primary goal for gardeners and landscape managers. Using Best Management Practices (BMP) and making appropriate plant selections will help to insure that landscapes start out healthy and remain healthy. Healthy landscapes do not require an over-reliance on environmentally damaging pesticides.

To plan a healthy landscape:

- Match plants to the site. Unfortunately there is no single species that is suitable for all sites, and if there were it would make for a very boring urban environment with every landscape looking the same.

- Use a diversity of species to help ensure that plant pests do not move rapidly through the landscape.
- Install only healthy plants. It is easier to keep plants healthy than to get them healthy.

Choose plants that do not have significant, life threatening disease and insect problems and are not considered to be invasive (Table 1). They are not all suitable for all sites. Not all introduced species are invasive, but the absence of predatory diseases and insects are factors that have allowed certain species to become problematic. Avoid plants that are considered invasive or are susceptible to damaging insects or diseases (Table 2).

Table 1. Non-invasive trees without significant disease and insect problems.

Botanical name	Common name	Native	Flowers (showy)	Fruit (showy)	Fall color	Notes
<i>Abies concolor</i>	white fir				evergreen	Conifer; heat tolerant; must have well-drained soil
<i>Abies nordmanniana</i>	Nordman fir				evergreen	Conifer; heat tolerant; must have well-drained soil
<i>Acer buergerianum</i>	trident maple				yellow to red	Medium tree; urban tolerant
<i>Acer campestre</i>	hedge maple				yellow	Medium tree; tolerant of dry and alkaline soils
<i>Acer griseum</i>	paperbark maple				russet red	Exfoliating bark; seed not viable
<i>Acer rubrum</i>	red maple	x			yellow brown to red	Rapid growth especially on wet sites (may have surface roots); over planted, flatheaded apple tree borer on young and stressed trees.
<i>Acer saccharinum</i>	silver maple	x			poor yellow	Urban tolerant; prone to internal decay when wounded
<i>Acer saccharum</i>	sugar maple	x			yellow	Needs well-drained site
<i>Acer saccharum</i> sub sp. <i>nigrum</i>	black maple	x			golden yellow	More drought tolerant
<i>Acer tataricum</i> var. <i>ginnala</i>	Amur maple			x	red	Small tree; urban tolerant; often with multiple trunks; fragrant flowers; red fruit
<i>Aesculus glabra</i>	Ohio buckeye	x	x		yellow to pumpkin orange	Best in natural setting (leaf diseases)
<i>Aesculus parviflora</i>	bottlebrush buckeye	x	x		yellow	Normally a shrub but can be trained into a small tree; excellent foliage and flower
<i>Aesculus x carnea</i>	red horsechestnut		x		poor brown	Medium tree; powdery mildew and scorch in late summer
<i>Alnus glutinosa</i>	European black alder				none	Tolerant of wet sites; can be invasive in wet areas
<i>Amelanchier laevis</i>	serviceberry	x	x	x	yellow, apricot or red	Medium tree; one of the best
<i>Asimina triloba</i>	pawpaw	x	x	x	golden yellow	Often suckers

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<i>Betula nigra</i>	river birch	x			yellow	Medium tree; resistant to bronze birch borer; non-life-threatening foliage spots; often multi-trunk; excellent bark
<i>Carpinus betulus</i>	European hornbeam				yellow (late)	Medium tree; interesting bark
<i>Carpinus caroliniana</i>	American hornbeam	x			yellow to yellow-orange	Medium tree; interesting bark; tolerant of wet soils
<i>Carya laciniosa/Carya ovata</i>	shellbark hickory/ shagbark hickory	x			minimal	Interesting bark; fruit may be messy (attracting squirrels); suppresses growth of other plants
<i>Carya illinoensis</i>	pecan	x			minimal	Fruit may be messy (attracting squirrels); suppresses growth of other plants
<i>Catalpa speciosa</i>	catalpa	x	x	x	yellow green	Large, messy leaves; messy fruit
<i>Cedrus libani</i> var. <i>atlantica</i>	Atlas cedar				evergreen	Conifer; many cultivars some with blue-gray needles
<i>Cedrus libani</i> var. <i>stenocoma</i>	hardy cedar of Lebanon				evergreen	Conifer; dark green; columnar
<i>Celtis laevigata</i>	sugarberry	x			yellow	Tolerant of wet or dry, alkaline soils; smooth gray bark; few foliage problems
<i>Celtis occidentalis</i>	common hackberry	x			poor yellow-green	Tolerant of dry, alkaline soils; aesthetic leaf problems; branch failures
<i>Cercidiphyllum japonicum</i>	katsuratree				yellow to apricot	Blue-green leaves in summer; must be watered during droughts
<i>Cercis canadensis</i>	eastern redbud	x	x	x	yellow-green to good yellow	Small to medium tree; cv. "Oklahoma" has better foliage and drought tolerance
<i>Chionanthus virginicus</i>	fringetree	x	x	x	yellow-green	Small tree; showy white flowers in late May; multi-trunk
<i>Cladrastis kentukea</i>	yellowwood	x	x	x	yellow	Medium tree; often cited as best native flowering tree; gray bark; often alternate bearing; brittle branches
<i>Cornus alternifolia</i>	pagoda dogwood	x	x	x	reddish purple	Small to medium tree
<i>Cornus florida</i>	flowering dogwood	x	x		red	Small to medium tree; susceptible to borers and leaf spots
<i>Cornus kousa</i>	kousa dogwood		x	x	red	Small to medium tree; flowers 20 days after <i>C. florida</i> ; susceptible to leaf scorch
<i>Cornus mas</i>	cornelian cherry dogwood		x	x		Large shrub to small tree; flowers late winter
<i>Cornus racemosa</i>	gray dogwood	x	x	x	purplish red	Small tree
<i>Corylus colurna</i>	Turkish filbert				yellow to purple	Heat and drought tolerant
<i>Crataegus x lavalleyi</i>	Lavalle hawthorn		x	x	copper red	Medium tree; minimal thorns
<i>Diospyros virginiana</i>	persimmon	x		x	none	Medium tree; fruit can be messy
<i>Eucommia ulmoides</i>	hardy rubber tree				none	Dark green foliage; no disease or insect pests; sprouts must be watered
<i>Fagus grandifolia</i>	American beech	x			golden bronze	Smooth, gray bark
<i>Fagus sylvatica</i>	European beech				golden bronze	Smooth, gray bark
<i>Ginkgo biloba</i>	ginkgo				bright yellow	Urban tolerant; disease and insect free; select only male cultivars to avoid offensive fruit odor
<i>Gleditsia triacanthos inermis</i>	thornless honeylocust	x		x	yellow	Not generally recommended because of overplanting and insect/disease problems

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<i>Gymnocladus dioicus</i>	Kentucky coffeetree	x		x	yellow	Tolerant of reflected light, heat, and other urban conditions
<i>Halesia tetraptera</i>	Carolina silverbell	x	x	x	yellow green	Small tree; interesting flower and fruit; needs shade and good soil
<i>Hamamelis x intermedia</i> 'Arnold Promise'	Arnold promise witchhazel		x		red	Large shrub that can be trained into a small tree; flowers in late winter
<i>Ilex decidua</i>	possumhaw	x		x	none	Needs a male pollinator
<i>Ilex opaca</i>	American holly	x		x	evergreen	Needs a male pollinator; holly leafminer (nonlethal)
<i>Ilex verticillata</i>	winterberry	x		x	none	Needs a male pollinator
<i>Juniperus chinensis</i>	Chinese juniper				evergreen	Columnar forms become trees (many cultivars are shrubs)
<i>Juniperus virginiana</i>	eastern redcedar	x			evergreen	Rust
<i>Juniperus virginiana</i> 'Canaertii'	canaert eastern redcedar	x			evergreen	Attractive fruit; foliage remains juvenile
<i>Koelreuteria paniculata</i>	golden raintree		x	x	golden	Medium tree; urban tolerant can become invasive
<i>Lagerstroemia indica</i>	crape myrtle		x			
<i>Larix decidua</i>	European larch				golden	Deciduous conifer; persistent cones
<i>Liquidambar styraciflua</i>	sweetgum	x			yellow, red to purple	Fast growth; may have surface roots; litter from fruit; webworms and scale; needs a large area for roots; not considered disease and insect free
<i>Liriodendron tulipifera</i>	tulip poplar	x	x		yellow	Scale and aphids; leaf spots; drops foliage in drought; not a tree for small sites; not considered disease and insect free
<i>Maackia amurensis</i>	Amur maackia		x		none	Small tree; attractive bark; drought tolerant
<i>Maclura pomifera</i>	Osage orange	x		x	yellow green	Tolerant of drought, compacted and alkaline soils; select male cultivars to avoid large, messy fruit; pest and disease free
<i>Magnolia acuminata</i>	cucumber magnolia	x	x		ashy brown	
<i>Magnolia grandiflora</i>	southern magnolia	x	x		evergreen	Surface roots; litter from leathery leaves
<i>Magnolia x soulangiana</i>	saucer magnolia		x		yellow brown	Medium tree
<i>Magnolia stellata</i>	star magnolia		x		bronze	Small to medium tree
<i>Magnolia virginiana</i>	sweetbay magnolia	x	x		none to evergreen	
<i>Malus sargentii</i>	Sargent crabapple		x	x	yellow	Small tree
<i>Malus floribunda</i>	Japanese flowering crabapple		x	x	yellow	Medium tree; ; Japanese beetles; many (300+) cultivars available; select disease tolerant cv
<i>Metasequoia glyptostroboides</i>	dawn redwood				russet	Deciduous conifer
<i>Nyssa sylvatica</i>	blackgum	x			scarlet red to purple	One of the best native trees; may have leaf spots; grafted plants sucker
<i>Ostrya virginiana</i>	hop hornbeam	x			yellow	Medium tree; slow growing, disease and insect free but sometimes difficult to find because of difficulty in transplanting
<i>Oxydendrum arboreum</i>	sourwood	x	x		scarlet red to purple	Medium tree; one of the best trees for multi-seasonal appeal; not tolerant of compacted or alkaline soils
<i>Phellodendron amurense</i>	Amur corktree				bronze yellow	Medium tree; tolerant of drought and alkaline soils
<i>Picea omorika</i>	Serbian spruce				evergreen	More columnar than other spruce; not tolerant of drought
<i>Picea orientalis</i>	oriental spruce				evergreen	Dark green foliage
<i>Picea pungens</i>	Colorado spruce				evergreen	Not disease or insect free but widely used
<i>Pinus strobus</i>	eastern white pine	x			evergreen	Over used and subject to cultural problems on poor sites; unsuitable for anything but deep, fertile, well-drained soils
<i>Pinus virginiana</i>	scrub pine	x			evergreen	Persistent cones may be objectionable
<i>Platanus x acerifolia</i>	London planetree				yellow-brown	Urban tolerant; attractive bark; large, messy leaves

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<i>Platanus occidentalis</i>	eastern sycamore	x			brown	Urban tolerant; large, messy leaves; prone to anthracnose (defoliation) in cool, wet springs
<i>Populus deltoides</i>	eastern cottonwood	x			green	Tolerant of wet sites; surface roots; use only male varieties; few ornamental traits
<i>Quercus acutissima</i>	sawtooth oak				yellow	
<i>Quercus alba</i>	white oak	x			red	Gray, exfoliating bark
<i>Quercus bicolor</i>	swamp white oak	x			yellow	Tolerant of drought and flooding; exfoliating bark
<i>Quercus coccinea</i>	scarlet oak	x			red	
<i>Quercus imbricaria</i>	shingle oak	x			russet	
<i>Quercus macrocarpa</i>	bur oak	x			yellow brown	Tolerates dry soils; needs a large site; large acorns can damage cars and become a litter problem
<i>Quercus palustris</i>	pin oak	x			bronze to red	Subject to iron chlorosis on alkaline soils; needs a large soil volume; tolerates wet sites
<i>Quercus phellos</i>	willow oak	x			yellow brown	Tolerates wet sites
<i>Quercus prinus</i>	chestnut oak	x			yellow brown	
<i>Quercus rubra</i>	red oak	x			red	
<i>Quercus shumardii</i>	red oak	x			red	
<i>Rhus typhina</i>	staghorn sumac	x				Can be trained to a tree form; often suckers, forming thickets
<i>Sassafras albidum</i>	sassafras	x			red	Numerous insect and disease problems but none are life threatening; difficult to transplant; best used in natural areas
<i>Sorbus alnifolia</i>	Korean mountainash					The best of the <i>Sorbus</i> but still subject to problems
<i>Styphnolobium japonicum</i>	Japanese pagodatree		x	x	yellow green	
<i>Syringa reticulata</i>	Japanese tree lilac		x		none	
<i>Taxodium distichum</i>	baldcypress	x			russet brown	Tolerates flooded sites but grows best in well-drained soil
<i>Tilia americana</i>	American linden	x			yellow	Defoliated by Japanese beetles; suitable for wild areas
<i>Tilia cordata</i>	European littleleaf linden				yellow	Defoliated by Japanese beetles; sooty mold from aphids; suitable for non formal areas
<i>Tilia tomentosa</i>	silver linden					Minimal problem with Japanese beetle; tolerant of drought and alkaline soils
<i>Ulmus americana</i>	American elm	x				Elm leaf beetle can be disfiguring but does not damage the tree; most suitable for naturalized areas
<i>Ulmus parvifolia</i>	Chinese elm					Can be invasive; elm leaf beetle can be disfiguring but does not damage the tree; drought tolerant; best used only minimally
<i>Zelkova serrata</i>	Japanese zelkova				orange, red to maroon	Relatively disease and insect free

Botanical name	Common name	Fault
<i>Acer palmatum</i>	Japanese maple	Subject to late frosts and freezes and desiccation in summer
<i>Acer platanoides</i>	Norway maple	Short lived due to verticillium wilt
<i>Acer negundo</i>	boxelder	Invasive; surface roots; boxelder bugs; breakage
<i>Ailanthus altissima</i>	tree of heaven	Highly invasive; offensive odor
<i>Albizia julibrissin</i>	mimosa	Highly invasive; weak wooded; short lived
<i>Betula papyrifera</i>	paper bark birch	Bronze birch borer
<i>Betula pendula</i>	European weeping birch	Bronze birch borer
<i>Betula platyphylla</i>	Japanese white birch	Bronze birch borer (in spite of the claims)
<i>Castanea mollissima</i>	Chinese chestnut	Flowers are odoriferous; fruit is spiny; suitable only for outlying areas
<i>Chamaecyparis lawsoniana</i>	Lawson falsecypress	Disease and insect problems; short lived
<i>Chamaecyparis pisifera</i> 'Boulevard'	sawara falsecypress	Brown foliage; ice/snow damage; short lived
<i>x Cupressocyparis leylandii</i>	Leyland cypress	Disease and insect problems; short lived
<i>Cotinus coggygria</i>	common smoketree	Verticillium wilt
<i>Crataegus crus-galli</i>	cockspur hawthorn	Rust; thorns
<i>Crataegus viridis</i> 'Winter King'	winter king hawthorn	Rust
<i>Ginkgo biloba</i> (female)	ginkgo	Offensive fruit (use only male cultivars)
<i>Gleditsia triacanthos inermis</i>	thornless honeylocust	Over planted; produces thorns when stressed; numerous disease and insect problems
<i>Fraxinus</i> spp.	ash	Emerald ash borer is considered almost 100% lethal on all untreated species of ash regardless of age or vigor; not recommended for planting at this time
<i>Juglans nigra</i>	black walnut	One of the last to leaf out and first to defoliate; foliage diseases; no fall color; fruit is messy; suppresses growth of other plants
<i>Paulownia tomentosa</i>	royal paulownia	Large messy leaves; no fall color; large woody terminal fruit; extremely fast growth; highly invasive
<i>Picea abies</i>	Norway spruce	Over planted; disease and mite problems as the trees begins to reach maturity (especially on compacted or droughty soils)
<i>Pinus nigra</i>	Austrian pine	Significant disease problems (diplodia); life expectancy 8 to 15 years
<i>Pinus strobus</i>	white pine	Unsuitable for anything but the best of soils (avoid dry, excessively wet, alkaline soils and soils high in clay)
<i>Pinus sylvestris</i>	Scots pine	Diplodia tip blight
<i>Platycladus orientalis</i>	Oriental arborvitae	Short lived; numerous disease and insect problems
<i>Populus alba</i>	white poplar	Invasive; plugs sewer lines; litter; foliar diseases; short lived
<i>Populus nigra</i> 'Italica'	Lombardy poplar	Plugs sewer lines; litter; foliar diseases; short lived
<i>Prunus cerasifera</i>	purple leaf plum	Short lived; borers and Japanese beetles; leaf spots
<i>Prunus serotina</i>	black cherry	Defoliation by eastern tent caterpillar; fruit stains walks and cars; suitable for wild areas
<i>Prunus serrulata</i> 'Kwanzan'	kwanzan Japanese cherry	Over planted; susceptible to cankers and borers; often short lived
<i>Prunus subhirtella</i> 'Pendula'	Higan weeping cherry	Over planted; susceptible to cankers and borers; often short lived; suckers from below the graft
<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	Douglas fir	Susceptible to heat and drought; short-lived
<i>Pyrus calleryana</i>	calleryana pear	All cultivars ("Aristocrat," "Bradford," "Cleveland," etc) invasive; short-lived due to breakage
<i>Quercus robur</i>	English oak	Powdery mildew
<i>Robinia pseudoacacia</i>	black locust	Leaf miners, borers; fungal decay; suckers profusely; produces spines under stress
<i>Salix alba</i> 'Trista' (was <i>S. babylonica</i>)	weeping willow	Insect damage; surface roots; cankers; breakage
<i>Salix nigra</i>	black willow	
<i>Sorbus aucuparia</i>	European mountain ash	Heat stress; borers; short life span
<i>Thuja occidentalis</i>	American arborvitae	Short lived in landscapes; numerous disease and insect problems
<i>Tsuga canadensis</i>	Canadian hemlock	Hemlock wooly adelgid may kill if not treated with insecticides

