



## Forest and Shade Tree Early Season Guide to Pest Management in Maine

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The following table should assist you in the early season planning process. **Remember that this is just a guide** and that conditions will vary. Many pests may be managed with several other suitable products not listed here, but also registered for use in Maine. This chart reflects those products that should be readily available and effective, *but not to the exclusion of others that may be suitable*. Information on any entry preceded by an \* may be available on our website or can be requested by calling or writing to the Insect and Disease Laboratory, 168 State House Station, Augusta, Maine 04333-0168, Phone (207) 287-2431, Fax (207) 287-2432.

Insect or Disease	Cultural Controls	Chemical Controls
<a href="#">Apple Scab</a> (Got Pests?)	Remove any fallen leaves not raked last autumn; plant resistant crabapples such as 'Adams', 'Baskatong', 'Beverly', 'Bob White', 'David', 'Dolgo', 'Donald Wyman', 'Liset', 'Red Jewel' and 'Sugartyme'. Other varieties of apple that are resistant to scab include Liberty, Pristine, Jonafree, Freedom, Redfree, Crimson, Enterprise, and William's Pride.	Propiconazole (Banner), Thiophanate methyl (T-Methyl), Chlorothalonil (Daconil), or Mancozeb (Dithane, Fore, Ziram) from bud break every ten days during wet weather. Captan, Manzate, and Polyram are also effective.
<a href="#">Ash Anthracnose</a> (Got Pests?)	Before budbreak, remove any fallen leaves not raked last autumn. Compost the leaves well away from ash trees.	Propiconazole (Banner), Chlorothalonil (Bravo, Daconil, Mainsail WDG) at budbreak, and again 10 to 14 days later.
<a href="#">Ash Leaf Rust</a>	None which are practical and effective.	Mancozeb, chlorothalonil (Daconil), or Thiophanate methyl (T-Methyl), applied at budbreak and repeated 2 to 3 times at 10-day intervals.
* <a href="#">Balsam Gall Midge</a>		Diazinon** or chlorpyrifos (Lorsban**) late May to early June.
* <a href="#">Balsam Shootboring Sawfly</a>		Chlorpyrifos (Lorsban 4E**) or Diazinon AG500** 3 times at 5 day intervals during the 2 weeks following the observation of activity of adults (mid-late April) or in the two weeks prior to normal balsam twig aphid spray dates.
* <a href="#">Balsam Twig Aphid</a>		Diazinon** or chlorpyrifos (Lorsban**) at bud break.
* <a href="#">Birch Casebearer</a>		Malathion or carbaryl (Sevin) applied after most or all of the cases have moved to opening buds.
<a href="#">Black Knot of Peach, Plum, and Cherry</a> (UMext)	Prune and destroy knotted twigs and branches.	Thiophanate methyl (T-Methyl or Fungo Flo) or chlorothalonil (Daconil) when trees are dormant and twice again at three week intervals after budbreak.
* <a href="#">Browntail Moth</a>	Clipping of overwintering webs is only effective prior to the time larvae beginning actively feeding on emerging foliage (April).	The use of pesticides is a complex issue requiring professional assistance and there are restrictions on treating near water. Call for more information.
* <a href="#">Bruce Spanworm</a>		Emerges early as buds begin to swell on northern hardwoods, especially beech. Larvae bore into buds. Controls not usually recommended.

**NOTE:** These recommendations are not a substitute for pesticide labeling. Read the label before applying any pesticide. Pesticide recommendations are contingent on continued EPA and Maine Board of Pesticides Control registration and are subject to change.

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<a href="#">Diplodia Tip Blight</a> (UMext)	<i>see</i> Sphaeropsis Shoot Blight	<i>see</i> Sphaeropsis Shoot Blight
<a href="#">Dothistroma Needle Blight</a> (USFS)		Copper sulfate (Kocide) or Thiophanate methyl (T-Methyl)
<a href="#">Dogwood Anthracnose</a> (USFS)	Remove any fallen leaves not raked last autumn; fertilize trees; prune out dead twigs and suckers; plant Chinese or Japanese dogwood instead of native flowering dogwood.	Chlorothalonil (Daconil), Thiophanate methyl (T-Methyl, Fungo Flo), Propiconazole (Banner), or Mancozeb (Dithane, Fore) at bud break and again three times at three week intervals.
<a href="#">Dutch Elm Disease</a> (USFS)	Plant disease resistant elms; eliminate all potential beetle breeding elm material within 700 feet of trees to be protected.	Bifenthrin (Onyx) or chlorpyrifos (Lorsban**) for beetle vector control on the lower 9' of trunk.
* <a href="#">Eastern Tent Caterpillar</a> (USFS)	Prune out egg masses on twigs prior to hatch; remove and destroy small tents as they develop (late April-early May)	<i>Bt</i> (Dipel or Thuricide), Acephate (Orthene), carbaryl (Sevin) or cyfluthrin (Tempo) on warm days when larvae leave tents to feed.
* <a href="#">Fall Cankerworm</a>		<i>Bt</i> (Dipel or Thuricide), Acephate (Orthene), carbaryl (Sevin), cyfluthrin (Tempo) applied while larvae are small (late May-early June on boxelder in Aroostook County). Early to mid May on elm and oak in southern Maine.
* <a href="#">Gypsy Moth</a>	Scrape egg clusters from tree boles and larger branches into a container and destroy them. Complete before egg hatch (late April).	<i>Bt</i> (Dipel or Thuricide), Acephate (Orthene), carbaryl (Sevin), cyfluthrin (Tempo), or diflubenzuron (Dimilin**) when larvae are actively feeding (early June).
Hawthorn Leaf Spot Mt. Ash Leaf Spot	Remove any fallen leaves not raked last autumn; plant resistant varieties such as <i>Crataegus crus-galli</i> .	Thiophanate methyl (T-Methyl or Fungo Flo), Chlorothalonil (Daconil), or Mancozeb (Dithane, Fore) as leaves unfold and at two week intervals until dry weather.
<a href="#">Hemlock Shoot Blight</a>	Check shoot tips in late winter, early spring for browning and curling. Pruning (shearing and shaping) can be done during late summer or fall to remove blighted tips.	Two applications of chlorothalonil as shoots elongate in mid-spring (late May through June)
* <a href="#">Hemlock Woolly Adelgid</a>	Watch for signs of infestation and report immediately.	Call for information.
Heterobasidion irregulare (= H. annosum; Fomes annosus) Red Pine Root Rot	Restrict thinning operations to between December and February, when spore dispersal is minimal.	Disodium octaborate tetrahydrate (Cellu-Treat) applied to freshly cut stumps (within three days of tree felling).
Horse Chestnut Leaf Blotch	Remove any fallen leaves not raked last autumn.	Thiophanate methyl (Fungo Flo) or chlorothalonil (Daconil) at bud break and twice more at 14 day intervals.
* <a href="#">Larch Casebearer</a> (UMassExt)		Carbaryl (Sevin) or cyfluthrin (Tempo) applied after most cases have moved to the expanding needle clusters (late April to early May).
<a href="#">Maple Anthracnose</a> (Got Pests?)	Before budbreak, remove any fallen leaves not raked last autumn. Compost the leaves well away from maples.	Thiophanate methyl (Fungo Flo) at bud break and twice again at 10-14 day intervals.
<a href="#">Peach Leaf Curl</a> (Cornell Plant Clinic)		Chlorothalonil (Bravo) or Ferbam (Carbamate) or Ziram applied as full coverage spray when trees are dormant.
* <a href="#">Pear Thrips</a> (USFS)		Controls and timing not well understood. Thrips are active on expanding maple.
<a href="#">Pine-Pine Gall Rust</a> of Jack and Scotch Pine (Cornell Plant Clinic)	Prune rust galls from lightly infected trees; rogue heavily infected trees from plantations before May 1. Use disease free planting stock.	None at this time.

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* <a href="#">Satin Moth</a>		Treat infested poplars and willow in mid to late May with <i>Bt</i> (Dipel or Thuricide), carbaryl (Sevin) or cyfluthrin (Tempo).
Sirococcus Shoot Blight of Spruces	Prune out affected twig tips by mid-summer, and destroy.	Chlorothalonil (Daconil, Bravo), at bud break and again 10 to 14 days later. Apply second application sooner if wet weather conditions prevail.
<a href="#">Sphaeropsis Shoot Blight</a> of Red, Scotch, and Austrian Pines (UMext)	Use disease free planting stock; remove non-crop-tree hard pines from area. Prune and burn lower, heavily infected and dead branches.	Chlorothalonil (Bravo), copper sulfate (Kocide), or Thiophanate methyl (T-Methyl, Topsin) at bud break and again when shoots are half grown.
* <a href="#">Spruce Gall Adelgids</a>	Prune off and destroy new developing galls in mid to late June.	Treat infested trees just prior to bud break with dormant oil, carbaryl (Sevin) chlorpyrifos (Lorsban**) or imidacloprid (Merit). Controls can also be applied in the fall.
<a href="#">Spruce Needlecast of White and Colorado Blue Spruce</a> ( <a href="#">Rhizosphaera kalkhoffii</a> ) (UMext)	Prune, remove, and destroy the most heavily infected, lower branches on larger trees.	Chlorothalonil (Bravo, Daconil), or copper sulfate (Bordeaux mix) as buds break and again 10 days to two weeks later.
* <a href="#">Ticks</a> (UMext)	Watch for ticks throughout the field season (April-November). Avoid high risk areas if possible, inspect yourself daily and remove ticks and use repellents as directed.	Compounds containing DEET can be used as repellents. Those containing the toxicant permethrin (Repel) can be used on clothing as directed.
* <a href="#">Viburnum Leaf Beetle</a> (Got Pests?)	Where possible, prune off any twigs with scabby, egg-filled holes prior to May 1st.	Watch in mid - late May for developing larvae and treat with acephate (Orthene), carbaryl (Sevin), or chlorpyrifos (Lorsban**) or imidacloprid (Merit).
* <a href="#">White Pine Blister Rust</a>	Prune cankered lateral branches from trees and excise stem cankers by removing bark at least four inches above and below and two inches either side of discolored bark. Remove (uproot or apply herbicide) Ribes from within 1000 feet of white pine forests or plantations. Surveying for Ribes plants is most effective from mid- April through early May.	Herbicides for controlling native Ribes include Glypho 41, Accord XRT II, Roundup Pro, Roundup 2K, and Roundup Original II.
* <a href="#">White Pine Weevil</a>	Refrain from planting white pine or spruce for reforestation in open areas, on heavy clay soils, or on heavily sodded fields. Correctively prune damaged trees to establish new leaders.	Apply control in the spring once there have been several days above 60 degrees Fahrenheit. Use Pyrenone Crop Spray, Astro, Onyx, Talstar** or Dibrom 8** at 14-20 day intervals until June. <u>Commercial Forest and Christmas Tree Plantations:</u> diflubenzuron (Dimilin**) or chlorpyrifos (Lorsban**).

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