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Cherry Year-Round IPM Program Annual Checklist

Supplement to UC IPM Pest Management Guidelines: Cherry

These practices are recommended for a monitoring-based IPM program that reduces water and air quality problems related to pesticide use. Track your progress through the year using this form.

Water quality becomes impaired when pesticides move off-site and into water. Air quality becomes impaired when volatile organic compounds move into the atmosphere. Each time a pesticide application is considered, review the Pesticide Application Checklist at the bottom of this form for information on how to minimize air and water quality problems. This program covers the major pests of cherry. Details on carrying out each practice, information on additional pests, and additional copies of this form are available from the UC IPM Pest Management Guidelines: Cherry at <http://www.ipm.ucdavis.edu/PMG>. Example forms are available for record keeping.

✓ Done	Dormant—leaf fall to bud swell (December–February) Mitigate pesticide usage to minimize air and water contamination.
	Look for San Jose scale (mostly in southern San Joaquin Valley): <ul style="list-style-type: none"> ▪ Prune samples from tree tops to determine if a dormant spray is needed. ▪ Put out pheromone traps by the end of February to help time in-season sprays.
	Survey weeds and check for weeds that escaped fall herbicide treatments. <ul style="list-style-type: none"> ▪ Record results. ▪ Adjust herbicides and/or timing accordingly for future treatments.
	Apply a dormant or delayed-dormant spray according to the PMG if the orchard has a history of these problems, or if monitoring indicates a need: <ul style="list-style-type: none"> ▪ San Jose scale ▪ Black cherry aphid ▪ European fruit lecanium ▪ European red mites (if history or eggs present) ▪ Cherry leafhopper (if X-disease/cherry buckskin is a problem) ▪ Powdery mildew
	Keep area around base of trees free of vegetation to reduce problems with rodents.
	Other pests you may see: <ul style="list-style-type: none"> ▪ Fruittree leafroller egg ▪ Western tussock moth eggs

✓ Done	Bloom—pink bud to petal fall (March–early April) Mitigate pesticide usage to minimize air and water contamination.
	<p>Look for these pests and their damage. Treat, if needed, according to PMG:</p> <ul style="list-style-type: none"> ▪ Caterpillars ▪ Earwigs ▪ Black cherry aphid ▪ Western flower thrips
	<p>Treat when orchard history or weather conditions indicates a need for:</p> <ul style="list-style-type: none"> ▪ Brown blossom rot ▪ Botrytis blossom blight ▪ Powdery mildew
	<p>Other pests you may see:</p> <ul style="list-style-type: none"> ▪ Bacterial canker ▪ American plum borer larvae ▪ Peachtree borer larvae

✓ Done	Fruit development—petal fall to fruit coloring (April–May) Mitigate pesticide usage to minimize air and water contamination.		
	<p>Look for these pests and treat, if needed, according to the PMG:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> ▪ Caterpillars ▪ Earwigs ▪ Peachtree borer ▪ Black cherry aphids ▪ Western flower thrips </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> ▪ Powdery mildew ▪ Brown rot and Botrytis infections on fruit ▪ Root and crown rot problems caused by <i>Phytophthora</i> ▪ Gophers </td> </tr> </table>	<ul style="list-style-type: none"> ▪ Caterpillars ▪ Earwigs ▪ Peachtree borer ▪ Black cherry aphids ▪ Western flower thrips 	<ul style="list-style-type: none"> ▪ Powdery mildew ▪ Brown rot and Botrytis infections on fruit ▪ Root and crown rot problems caused by <i>Phytophthora</i> ▪ Gophers
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	<p>Monitor mites by watching "hot spots" and examining water sprouts for developing infestations.</p>		
	<p>Survey weeds in late spring or early summer after summer annuals have germinated.</p> <ul style="list-style-type: none"> ▪ Record observation. ▪ Control with cultivation or postemergent herbicides. ▪ Keep areas around the base of trees free of vegetation to reduce problems from peachtree borer. 		



✓ Done	Preharvest through harvest—fruit coloring through harvest (May–June) Mitigate pesticide usage to minimize air and water contamination.
	Treat for brown rot, Botrytis fruit rot, or powdery mildew if preharvest conditions indicate a need.
	Examine trees and fruit for X-disease (cherry buckskin) symptoms. <ul style="list-style-type: none"> ▪ Mark any infected trees (plan to remove them after a postharvest leafhopper spray).
	Evaluate previous treatments by examining trees for: <ul style="list-style-type: none"> ▪ Obliquebanded leafroller ▪ Fruittree leafroller ▪ Peachtree borer ▪ Orange tortrix ▪ Green fruitworm ▪ Black cherry aphid
	Continue to monitor mites by watching "hot spots" and examining water sprouts for developing infestations.
	Begin looking for birds and start deterrent management practices <i>before</i> they begin to feed.
	Sample fruit at harvest to determine the effectiveness of your pest management program.
	Other pests you may see: <ul style="list-style-type: none"> ▪ Cribrate weevil on young trees ▪ Cherry slug (coastal areas)



✓ Done	Postharvest (June–November) Mitigate pesticide usage to minimize air and water contamination.
	Continue monitoring and treat if needed according to the PMG for: <ul style="list-style-type: none"> ▪ Mites & mite predators—through August ▪ Powdery mildew ▪ Peachtree borer
	Examine any declining trees to determine the cause. Manage according to PMG.
	Treat for leafhopper vectors of X-disease (Cherry buckskin) from June through October if disease has been found in (or near) the orchard. <ul style="list-style-type: none"> ▪ Remove any infected trees as soon as possible after a leafhopper spray.
	Collect leaf samples for nutrient analysis June through July.
	Prune out wood and promptly destroy brush piles before September to help manage these pests: <ul style="list-style-type: none"> ▪ Eutypa ▪ Cytospora canker and wood-inhabiting fungus ▪ Shothole borer ▪ Pacific flatheaded borer
	Continue to manage weeds in the orchard: <ul style="list-style-type: none"> ▪ Control summer perennials such as field bindweed, bermudagrass, and johnsongrass. ▪ Apply preemergent spray in fall based on weed surveys (combine with postemergent if needed), targeting dandelion, clovers, and curly dock to limit X-disease. ▪ Keep tree bases free of vegetation to reduce problems with rodents in winter and peachtree borer in summer.
	Seed cover crop in October – avoid using clovers that can host the X-disease pathogen and leafhopper vectors: Berseem, crimson, rose, subterranean, and sweet clovers.
	Other pests you may see: <ul style="list-style-type: none"> ▪ Cribrate weevils (young trees) ▪ Cherry slug ▪ Obliquebanded leafroller ▪ Viruses



✓ Done	**Pesticide application checklist
	<p>When planning for possible pesticide applications in an IPM program, review and complete this checklist to consider practices that minimize environmental and efficacy problems.</p> <ul style="list-style-type: none"> ✓ Choose a pesticide from the UC IPM Pest Management Guidelines for the target pest considering: <ul style="list-style-type: none"> ▪ Impact on natural enemies and honeybees. ▪ Potential for water quality problems using the UC IPM WaterTox database. (For more information, see http://www.ipm.ucdavis.edu/TOX/simplewatertox.html.) ▪ Impact on aquatic invertebrates. (For more information, see <i>Pesticide Choice</i>, UC ANR Publication 8161, http://anrcatalog.ucdavis.edu/pdf/8161.pdf.) ▪ Chemical mode of action (based on efficacy, spectrum of activity, and pesticide resistance). Select an alternative chemical or nonchemical treatment when resistance risk is high. ✓ Before an application: <ul style="list-style-type: none"> ▪ Choose sprayers and application procedures that keep pesticides on target. ▪ Identify and take special care to protect sensitive areas (for example, waterways or riparian areas) surrounding your application site. ▪ Review and follow label for pesticide handling, storage, and disposal guidelines. ▪ Check and follow restricted entry intervals (REI) and preharvest intervals (PHI). ✓ After an application is made: <ul style="list-style-type: none"> ▪ Record application date, product used, rate, and location of application. ▪ Follow up to confirm that treatment was effective. ✓ Consider water management practices that reduce pesticide movement off-site. (For more information, see UC ANR Publication 8214, <i>Reducing Runoff from Irrigated Lands: Causes and Management of Runoff from Surface Irrigation in Orchards</i>, http://anrcatalog.ucdavis.edu/pdf/8214.pdf.) <ul style="list-style-type: none"> ▪ Limit irrigation to amount required using soil moisture and evapotranspiration (ET) monitoring. ▪ Install an irrigation recirculation or storage and reuse system. ▪ Consider the use of cover crops. ▪ Consider vegetative filter strips or ditches. (For more information, see <i>Vegetative Filter Strips</i>, UC ANR Publication 8195, http://anrcatalog.ucdavis.edu/pdf/8195.pdf.) ▪ Install sediment traps. ▪ Use polyacrylamide (PAM) tablets in furrow irrigation systems to prevent off-site movement of sediments. ▪ Apply polyacrylamides in sprinkler irrigation systems to prevent runoff. ▪ Redesign inlets and outlets into tailwater ditches to reduce erosion. (For more information, see UC ANR Publication 8225, <i>Reducing Runoff from Irrigated Lands: Tailwater Return Systems</i>, http://anrcatalog.ucdavis.edu/pdf/8225.pdf.) ✓ Consider orchard floor management practices that improve soil structure and reduce erosion. (For more information, see UC ANR Publication 8202, <i>Orchard Floor Management Practices to Reduce Erosion and Protect Water Quality</i>, http://anrcatalog.ucdavis.edu/pdf/8202.pdf.) ✓ Consider practices that reduce air quality problems. <ul style="list-style-type: none"> ▪ When possible, choose pesticides that are not in an emulsifiable concentrate (EC) formulation, which release volatile organic compounds (VOCs). VOCs react with sunlight to form ozone, a major air pollutant.

