Understanding And Treating Eutypa Dieback Of Apricots

by Bill Coates

Eutypa dieback is rapidly becoming the most serious disease problem in coastal apricot orchards. Eutypa is a limb dieback disease formerly called Cytospora. It is present in most of the apricot growing regions of the world and can also be a serious pest of grapevines. In California it is most severe in the coastal valleys but also occurs from Los Banos north to Yolo County in lesser amounts.

For many growers, the first symptom of the Eutypa dieback is the sudden wilting of an apricot limb in mid-summer. The limb dies so quickly that the dead, dry leaves remain attached to the limb making them quite visible.

Other symptoms include large dark cankers on the limbs, usually originating at pruning wounds and often exuding amber-colored sap. Infected limbs also have discolored inner wood which is easily observed when cutting off the infected limb.

Sometimes growers confuse Eutypa infections with other diseases such as bacterial canker or Verticillium wilt. Your Farm Advisor or crop consultant can help you sort these out but, in general, bacterial canker and Verticillium wilt unlike Eutypa are worse on young trees and are not associated with dark cankers originating at pruning sites. Limbs dying from bacterial canker may have gumming but this only occurs in the early spring. Eutypa can kill a limb anytime but it is more visible in the summer. Verticillium wilt may discolor the inner wood but does not gum like Eutypa.

Exactly what is Eutypa? Eutypa is a fungus disease caused by the organism Eutypa lata. For years it was known by the name of its asexual stage, Cytospora, and some growers still refer to it by this name or less specific but more descriptive names such as gummosis or limb dieback.

While generally thought of as a disease of apricot trees and grapevines, this fungus can infect many other hosts. Ceanothus and western chokecherry are wild hosts in California. More recently it has been found in a commercial sweet cherry orchard.

Eutypa is a wound-infecting fungus. In the absence of pruning, this disease would rapidly become a non-problem in California apricot orchards. Unfortunately, pruning is necessary to maintain vigor, train trees, control crop size, prevent shading out of interior fruit wood and keep trees to a manageable size. These horticultural requirements mean that since pruning wounds will be present we must determine how we can best protect them. Some knowledge of how and when infections occur aids us in determining a management strategy.

Fresh pruning wounds are infected by the ascospores of Eutypa. These ascospores are produced in perithecia which occur on old dead branches in areas of moderate to high annual rainfall predominantly in coastal valley locations such as San Benito, Santa Clara, Alameda, Contra Costa and Sonoma counties. Perithecia are very rarely found in the Central Valley but ascospores can be blown 60 or more miles by the prevailing westerly winds.

Spores are discharged only during or shortly after rainfall of at least .05 inches. Large numbers of ascospores are discharged during fall, winter and spring rainstorms with a peak in October and a lesser peak in April. Some researchers have documented relatively low spore numbers from early November through late December and have suggested mid-November to mid-December pruning.

Bill Coates is a University of California Cooperative Extension Farm Advisor for San Benito County.
New Cox² Recorder

Cox Recorders has just recently released a totally redesigned version of its popular, easy to use and affordable Cox temperature recorder. The new product, the Cox² Recorder, is the result of an industry survey of the needs of temperature recorder users.

The Cox² Recorder is built to be used in all types of temperature sensitive shipments, and serves to protect the load by monitoring the performance of the carrier in maintaining temperature. Temperature recorders ride with the load as a necessary “third party” source of unbiased evidence.

Packaged in a protective corrugated sleeve, the Cox² is a self-contained, battery powered instrument which tracks temperature versus time, and plots the data on a strip chart. The Cox² produces a wide and easy to read chart of a special material never before used in temperature charting. High accuracy of temperature sensing (+1 degree F ± 0.6 degrees C) results from the use of this material, which produces a very bold trace on the chart which will photocopy and fax with ease.

Like its predecessor, the Cox² is simple to activate and install: the shipper simply fills out the shipping information on the multipart form on the outside of the recorder, pulls the “start tab” and places the recorder in the load.

The unique Cox² design combines visual and audible verification of recorder running at startup, so that installation can proceed with confidence.

When the shipment reaches destination, the Cox² Recorder immediately delivers its charted information after the tamperproof security seal on the instrument is removed. A pop-open door on the instrument presents the chart for easy removal. Return address and pre-paid postage information printed on the corrugated sleeve makes recorder return as simple as dropping it in the mail.

Cox Recorders provides Cox² with calibration information already inscribed on the chart, since each unit is test-run before leaving the factory. The result of the test run appear on the actual chart in the unit, and serve to verify timing and temperature accuracy. Technical experts at Cox Recorders are on call for assistance in interpreting the temperature record or to re-verify recorder performance.

New Product Extends The Life Of Fruit And Vegetables

Farmers will now be able to deliver fresher produce to their customers thanks to a new chemical-free packaging product that extends the life of fruit, vegetables, and herbs for weeks, even months. Evert-Fresh bags and packaging film are lined with a natural mineral that absorbs and removes ethylene gas.

In addition, Evert-Fresh bags and packaging film “breathe” so that other damaging gases generated by fresh produce are removed. An anti-fogging treatment minimizes moisture and inhibits bacteria growth.

“This product appeals to farmers because it extends the length of time they have to get the produce to market,” said Tom Stewart, president of Evert-Fresh Corporation, a Houston-based company. “Our packaging, which is reusable, allows growers to store produce longer preventing glut supply situations which encourages lower prices. In addition, our bags and film allow growers and shippers to plan more efficient travel itineraries for their deliveries.”

Another benefit of the film is that it allows farmers to transport mixed loads of produce, according to Stewart. “However, the ultimate reason growers should use our film is because it enables them to provide fresher product — that has a longer shelf life — to their customers.”

Dole Tropifresh conducted shelf life tests using Evert-Fresh film on its fresh green asparagus. Results showed that asparagus wrapped in Evert-Fresh film deteriorated significantly less than that wrapped using their existing commercial packaging. Stenlil Research and Development Lab conducted similar tests using pear firmness, sugar content and color. Other research conducted using the film has proven that Evert-Fresh packaging reduces vitamin C loss up to 50 percent on broccoli.

Bulk Evert-Fresh is available in double-tube rolls, ranging in width from six to 40 inches. However, Evert-Fresh film can be custom manufactured to meet any size requirements. For more information about the film, or where rolls can be purchased, contact Evert-Fresh at (713) 529-4593.

EHS Products Introduces Low-Cost, On Site Pesticide Detector Kit

Environmental Health & Safety Products, Inc. has introduced a pesticide detector kit capable of providing on-site detection of over 300 insecticide products. The EHS on-site tests allow anyone to determine the presence of toxins in less than 10 minutes. Cost per test is under six dollars.

The various classes of insecticides include the carbonates, organophosphates and thiophosphates. These represent the three most toxic classes of insecticides most commonly used in food production and pest control. The EHS pesticide detector will determine as little as 0.1 parts per million on surfaces and in water, soil, grains, vegetables and fruits and many other substances. In fact, it offers immediate testing without sending samples to labs for analysis. The result is a substantial savings in time and money.

Currently, the EHS pesticide detector is available in 20-unit test kits. Everything required is included. More information about this new, low-cost insecticide detection kit is available from EHS Products, Inc., 3500 W. 75th St., Suite 304, Prairie Village, Kansas, 66208. For literature or more information on the EHS Pesticide Detector, call (800) 779-3477 (EHSP).

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In actual practice, there is no safe time
to prune during the fall, winter and
spring. Orchards in San Benito County
consistently pruned either early or late
are both heavily infected. Part of the
problem is probably the erratic and often
very dry autumns during the drought
which may have delayed spore release

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first symptom of the
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sudden wilting of an
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patterns. Certainly another problem is
the long susceptibility of pruning to Euty-
pa infection — up to six weeks in the fall
and two weeks in the spring.

How do we manage Eutypa dieback?
There are several management alter-
atives available and current research being
conducted by University of California
Plant Pathologists Doug Gubler and Beth
Teviotalert as well as this author in San
Benito County may expand the alter-
atives soon. The following alternatives are
available currently.

1) No pruning: This is not accept-
able to California growers but might be
useful for home gardeners. It might be
possible to develop some training systems
which makes use of this alternative.

2) Summer pruning: Since there is
little chance of infection in the summer,
this should certainly be considered as a
possible alternative. Mechanical topping
after harvest is already practiced in many
northern San Joaquin Valley apricot
orchards. Hand-pruning young trees
would also seem logical at this time.

Hand pruning mature trees in the sum-
mer would require some adjustments in
farm labor availability and training.
Prior to August 1, it appears that sub-
stantial regrowths from pruning cuts decline rapidly. Statisti-
ically, the chance of significant rainfall
begins to increase substantially by the
last week of September in most apricot
growing counties. August pruning seems
to be an ideal comprise between horti-
culture requirement and avoidance of spore release. However,
no long term research studies have been
done utilizing August pruning. We hope
to establish one this summer. For-
tunately, Eutypa is not spread by
pruning tools.

3) Chemical Control: Most
fungicides are inef-
fective in prevent-
ing Eutypa infec-
tions — no regist-
ered fungicides are
eradicants. Benomyl (Ben-
late) and other
benimidazole
fungicides are
moderately effective
as protectants
when painted on
pruning wounds
immediately after
pruning. Register-
ation status at the
time required for
efficacy (1.5 pound
per gallon of water) is a gray area.
Recent research in San Benito County
has uncovered at least one other fungi-
cide and possibly more that may be very
effective protectants. None are currently
registered on apricots.

4) Tree Sealants and Paints: In gen-
eral, both latex paints and tree sealants
have been ineffective in preventing
Eutypa infections. Sealing each wound
by flaming with a propane torch has been
effective in limited tests in San Benito
County.

5) Biological Control: Fusarium lateri-
atum has been shown to be an effective
biocidal agent but is unavailable com-
mercially.

6) Source Removed: Abandoned
apricot orchards should be removed and
burned as well as any Eutypa-infected
limbs and stumps within an orchard. Cut
at least eight inches (or more) below the
canker during mid-summer to reduce the
chance of re-infection.

7) Maintaining Orchard Vigor: A
vigorous limb removal program com-
bined with a good fertilizer and irrigation
management program may help keep you
in business. To succeed, you need to
incorporate some of the other steps,
train new scaffolds as needed and replace
unproductive trees.
START 'EM

The great ones always start young. The same holds true for citrus trees. • Even if they're Phytophthora-free when you buy them from a reputable nursery, chances are they won't remain that way long after planting. Unless, that is, you protect them against Phytophthora root rot, foot rot and gummosis right from the start with ALIETTE® brand fosetyl Al fungicide. • ALIETTE® delivers the kind of control that gives non-bearing trees a chance to develop strong, healthy root systems. And healthier feeder roots mean more active growth and improved tree vigor. You'll also appreciate how many ways ALIETTE® gives you to manage the health of your future superstars. To treat γ