would be an excellent program for maximizing frost
protection. After budbreak and during the critical
frost-danger period, running the drip system
periodically to thoroughly wet as much soil as
possible down the driplines may be beneficial. This
maximizes the amount of soil moisture available for
storing daytime heat energy.

PHOMOPSIS REARS ITS
UGLY HEAD AGAIN

Hopefully the coming season does not have the
weather related problems experienced by growers
during the 1998 season. One problem especially
noted is the extensive damage caused by Phomopsis
Cane and Leaf Spot on highly susceptible varieties
such as Thompson seedless, Grenache, Tokay, Flame
and Red Globe. Below are the results of the
experimental trial conducted by Paul Verdegaal (San
Joaquin County Viticulture Advisor) and myself in
Manteca on Grenache. UTC was the untreated control
to provide the level of disease without any treatments.
All rates are formulated material per acre except
treatment 2 which was applied at 3.2 oz per gal. of
water.

Dormant treatments:

Treatments 2-6 were delayed dormant treatments to
find materials which would be effective against the
disease before bud break. While two treatments were
successful, it must be pointed out that both would be
very costly and are not registered at these rates for
dormant applications for control of Phomopsis. Our
search continues this year.

Foliar treatments:

Treatments number 7 through 24 are foliar treatments
which were applied 4 times - each application before
significant rainfall occurred. In retrospect, one of the
applications probably could have been omitted for the
longer lasting materials.

Any treatment which has a small ‘j’ after the amount
of disease were the best treatments in controlling the
disease on the leaves. A small ‘e’ indicates the best
of the treatments in controlling the shoot symptoms.
As shoot symptoms appear to be the most devastating
part of this disease the following discussion is based
on shoot symptoms.

Treatments 7-10 are three of the new strobilurin
materials. Abound® and Sovran® performed equally
as well. Flint®, at the 2 oz rate, was not as effective
and will be retested this year at 3 oz.

Treatments 11-18 include several forms of copper
materials with and without sulfur and all performed
efficiently. Treatment 18, Manocide, is a
combination of mancozeb and Kocide® and it also
performed very well. Treatments 20-22 were Ziram®
alone, Ziram alternating with Abound, and a tank mix
of both. All three treatments worked well. As both
Abound and Ziram performed equally well alone there
is obviously no need to tank mix the treatments.
Treatment 23, Dithane M-45 (mancozeb) also
performed well as did Sulforix, treatment 24.

This trial demonstrated there are many materials
which can and will prevent Phomopsis when applied
to foliage before rainfall occurs. The important fact
to remember is that none of these materials have
substantial control after infection occurs. As rainfall
is needed for disease spread and development on the
young shoots, and if you have a small acreage, the
ideal time to apply any material is just before rainfall
occurs. Realizing that such is not always possible,
waiting as long as possible to obtain maximum
growth before treatment will provide better coverage
of the foliage when rain does occur. As the vine
grows two things happen. 1) A canopy of 15’ shoot
growth helps provide protection from the splashing
effects of the rain and, 2) older tissue is not as
susceptible. Hence, applications past this stage are
not as cost effective as earlier applications.

If you have any questions about this trial or about
Phomopsis control, please contact me.
<table>
<thead>
<tr>
<th>Application</th>
<th>Rate/Acre</th>
<th>Heaves</th>
<th>Shoot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. UTC</td>
<td>1.95 a</td>
<td>1.62 ab</td>
<td></td>
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<tr>
<td>2. BENLATE</td>
<td>3.2 oz/gal</td>
<td>1.75 abc</td>
<td>0.93 de</td>
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<tr>
<td>3. TOPKIN</td>
<td>1.5 lb</td>
<td>1.84 abc</td>
<td>1.40 abc</td>
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<tr>
<td>4. LIME SULFUR</td>
<td>10 gal</td>
<td>1.88 ab</td>
<td>1.43 abc</td>
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<td>5. LIME SULFUR</td>
<td>30 gal</td>
<td>1.70 abcd</td>
<td>0.95 de</td>
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<tr>
<td>6. NUCOP</td>
<td>2 lb</td>
<td>1.94 a</td>
<td>1.67 a</td>
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<tr>
<td>7. ABOUND + LATRON B1956</td>
<td>9.8 oz</td>
<td>0.06 % v/v</td>
<td>0.84 j</td>
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<tr>
<td>8. ABOUND + LATRON B1956</td>
<td>12.3 oz</td>
<td>0.06 % v/v</td>
<td>1.17 fghi j</td>
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<tr>
<td>9. SORIAN + LATRON B1956</td>
<td>.25 lb</td>
<td>0.06 % v/v</td>
<td>1.54 abcd efghi</td>
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<td>10. FLINT</td>
<td>2 oz</td>
<td>1.35 cdefgh</td>
<td>1.33 abcd</td>
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<td>11. NUCOP + MICROTHERM</td>
<td>2 lb</td>
<td>1.39 cdefgh</td>
<td>1.22 bcde</td>
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<tr>
<td>12. NUCOP + MICROTHERM</td>
<td>5 lb</td>
<td>1.39 cdefgh</td>
<td>1.19 bcde</td>
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<tr>
<td>13. CHAMP 2 + MICROTHIOL</td>
<td>2.57 pt</td>
<td>1.25 efgh</td>
<td>0.85 e</td>
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<td>14. CHAMP DF</td>
<td>3 lb</td>
<td>1.47 bcddefg</td>
<td>1.94 de</td>
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<td>15. CHAMP DF + MICROTHIOL</td>
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<td>1.11 cdefgh</td>
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<tr>
<td>16. CHAMP DF + MICROTHIOL</td>
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<td>1.10 cde</td>
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<td>17. KOCIDE 2000</td>
<td>1.5 lb</td>
<td>1.29 cdefgh</td>
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<td>18. KOCIDE 2000 + MICROTHIOL</td>
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<td>1.59 abcdef</td>
<td>1.05 cde</td>
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<td>19. MANKOCIDE</td>
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<td>1.36 cdefgh</td>
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<td>20. ZIRAM</td>
<td>4 lb</td>
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<td>21. ZIRAM + ABOUND</td>
<td>3 lb</td>
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<td>22. ZIRAM + ABOUND</td>
<td>15.2 oz</td>
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<td>23. DITHAN + LATRON B1956</td>
<td>2.5 lb</td>
<td>0.01 % v/v</td>
<td>0.99 hij</td>
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<td>24. SULFURIX</td>
<td>2 qt</td>
<td>1.64 abcd</td>
<td>1.15 cde</td>
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