

California Citrus Exporters:

The California Citrus Quality Council (CCQC) is contacting the industry to provide information about mandatory copper applications to comply with the China protocol. The protocol covers all citrus varieties including navel oranges, Valencia oranges, mandarins, lemons, grapefruit, and pomelos.

The mandatory copper applications for fruit planned for export to China may be made after the first rainfall event. CCQC will announce mandatory applications by the following districts:

- **District 1** including Madera, Fresno, Tulare, and Kern Counties;
- **District 2** including all coastal counties such as San Luis Obispo, Santa Barbara, Ventura, San Diego, and the western portion of Riverside and San Bernardino Counties.
- **District 3**, including Imperial and eastern portions of Riverside and San Bernardino Counties and the Coachella Valley South to Imperial County

This will be done based on seasonal rainfall for each region. Attached for your information is a map showing the district borders.

Historically and for long-term planning, **the first application of copper in District 1 and 2 must be applied by Nov. 30 for the management of brown rot caused by *Phytophthora spp.* District 3 most likely will need the first application of copper by Dec. 30.** Additional applications may be required depending on rainfall later in the season. Supplemental announcements will be made over the season based on the accumulation of precipitation and temperatures during wetness events that are favorable for brown rot development. **All citrus shipments to China must have at least one copper application.**

Attached is a Good Agricultural Practices (GAPs) document outlining strategies for the management of *Phytophthora* brown rot of citrus. The document is also posted on the CCQC website. As a reminder, *Phytophthora syringae* and *P. hibernalis* are quarantine pathogens that can cause citrus brown rot in California along with other *Phytophthora* species. In order to keep the China market open, the citrus industry must prevent the shipment of citrus brown rot to China caused by any *Phytophthora* species.

Following the China export protocol for 2016-17 and continuing in 2017-18, one of the critical management practices is the mandatory application of a copper fungicide after the first rain in the fall and no later than Nov. 30. All other aspects of the protocol must be followed including skirting, monitoring of groves with scouting reports that indicate that the grove is below the threshold levels of disease, harvesting fruit above 20 inches for export to China, and segregating low-hanging fruit for other markets. Fruit incubation requirements must also be followed that are specific for fruit grown and / or packed in Tulare County.

As stated in the GAPs and shown in the Copper Fungicide Application Tables 1 and 2 in the GAPs document, a fixed copper (e.g., copper hydroxide, copper oxide, etc.) or copper sulfate mixed with agricultural lime to increase the residual activity of copper is recommended. Rates are shown for different application volumes per acre. The use of zinc is optional, but it is recommended, because citrus is usually deficient in zinc nutrition.

Phosphonate compounds (PO₃) also have activity against *Phytophthora* species. Many phosphate (PO₄) fertilizers contain phosphite (PO₃). Foliar treatments containing PO₃ should be applied to the entire tree. When rainfall is excessive, multiple treatments may have to be applied during the harvest season (e.g., January, February, March, etc.). Spraying the ground underneath the trees with systemic fungicides such as mefenoxam (e.g., Ridomil Gold) also reduces brown rot infections. Postharvest fruit applications of labeled phosphonate fungicides, however, may not be used because MRLs for this usage are not established in China. Updates on new fungicides that become available will be announced by CCQC.

Growers are reminded that trees should be skirt pruned, so no fruit or branches touch the ground. There is no set height for skirt pruning but horticultural records should document yearly activities. Harvesters must have a system in place to document segregation of fruit above 20 inches for shipment to China and separated from fruit harvested below 20 inches for other markets. Documentation records must be available for inspection by APHIS when requested.

Please contact me by telephone at (530) 885-1894 or via email at jcranney@ccqc.org if you have questions or need additional information.

Regards,
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