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Revision of UNECE standards

Revision of UNECE standards – Fresh Figs

Additional information by the delegation of Brazil

Brazil would like to supplement the information as provided to the proposal of amending cleanliness provision of the UNECE Standard for figs (*Ficus carica* L.)

Fig rust is a disease associated with the fungus *Cerotelium fici* (Cast.) Arth. and commonly associated to tropical and subtropical climate and/or hot, windy and rainy conditions (<https://www.infoteca.cnptia.embrapa.br/bitstream/doc/697133/1/Ci026.pdf>). Such conditions are the predominantly observed during the harvest period of figs in Brazil, but also associated to tropical and subtropical producing areas worldwide such as in the Southern US, Central America, India, China and other sites (<http://www.ctahr.hawaii.edu/oc/freepubs/pdf/PD-100.pdf>).

According to the Systematic Botany of Mycological Resources (Farr, D.F., & Rossman, A.Y. Fungal Databases, Systematic Mycology and Microbiology Laboratory, ARS, USDA. Retrieved April 10, 2016, from <http://nt.ars-grin.gov/fungaldatabases/>) *Cerotelium fici* was associated with Ficus plant in Argentina, Australia, Azores, Balearic Islands, Barbados, Bermuda, Brazil, Canary Islands, Cape Verde, China, Colombia, Congo, Costa Rica, Cuba, Cyprus, Dominican Republic, El Salvador, Florida; France, Greece, Guatemala, Hawaii; Hong Kong, India, Indonesia, Italy, Jamaica, Japan, Kenya, Libia, Madeira Islands, Malawi, Mauritius Islands, Morocco, Mississippi, New Caledonia, New Zealand, North Africa, Oman, Pakistan, Papua New Guinea, Peru, Philippines, Puerto Rico; South Africa, Taiwan, Tanzania, Trinidad and Tobago, Uruguay, Russia, Venezuela, Virgin Islands and Zimbabwe.

The disease diminishes photosynthesis area at a first step, but evolves to leaf death and fall, promoting an acute stress to the fig plant (<https://hort.purdue.edu/newcrop/morton/fig.html>; <https://msfruitextension.wordpress.com/tag/bordeaux-mixture/>).



This can be seen in Figure 1, showing two different managements in an ongoing production field.

Both fields were planted at the same time, but the field at the left was cultured with Bordeaux mixture without interruption for four years and the field at the left Bordeaux mixture use was interrupted for the season 2015/2016.

Branches and plants have the same height/structure, but fig plants at the left display more leaves and have vivid appearance.

Bordeaux mixture is the prime input adopted for fig rust control in Brazil as well as other countries (<http://www.aces.edu/pubs/docs/A/ANR-1145/ANR-1145.pdf>; MÜLLER, A. S. Journal Agricultor Venezolano 1940 Vol. 4 No. 49 pp. 35-37 pp.; [http://www.che.caltech.edu/groups/fha/media/Terpene_reprints/Thornton Bulletin2011.pdf](http://www.che.caltech.edu/groups/fha/media/Terpene_reprints/Thornton_Bulletin2011.pdf)).



When fig plant is managed without Bordeaux mixture the branches are less vigorous, with fewer leaves and reduced fruitification (Figure 2).

Uniformity of fruits produced is also affected, increasing losses as regard to size differences (Figure 3).



Additionally, is a characteristic of the fresh fig market in Brazil that consumers commonly reject totally/100% clean figs and slight/heavy white coated figs are relied a safer product from the pesticide restricted/controlled use and/or GAP adoption.

As a consequence, considering that fresh fig market in Brazil is of fully matured fruits, totally/100% clean figs that do not attend marketing standards concerning size and other grading provisions cannot be deferred to the local market and is mainly discarded (Figure 4).

A minor fraction of the discarded fruits is sold for jam production. The amount of fruits sold to jam production during harvesting period may be as high as 45 tons per month (Figure 5).



With the adoption of the best GAPs, Bordeaux mixture is one of the prime inputs. As a consequence, depending on the management, quality of the CaO and CuSO₄ adopted, number of applications and some post-harvest practices, a heavy or slight white cover results and totally or 100% clean figs is not possible to achieve (Figure 6).

Conclusions

Fig rust occurs worldwide and may be associated to fresh fig production in tropical and subtropical climates. The disease may be controlled following recommended GAPs with pesticide applications and/or Bordeaux mixture.

Bordeaux mixture is the prime input adopted for fig rust control in production sites located in tropical and subtropical climates. The treatment of Fig plants with Bordeaux mixture is considered not only effective, but also safer, besides contributing to the overall nutrition of the plant for the intake of calcium.

Clean figs in tropical and subtropical climates can only be produced in commercial scale with the adoption of GAPs recommendations of pesticide and Bordeaux mixture application. To produce totally/100% clean fruits, more pesticides may be needed, increasing the costs without the associated effectiveness.

Taking into consideration the higher costs of the production of totally/100% clean figs in tropical and subtropical climates, the losses shrink final gain and jeopardize the activity.

Another point is that market demands for totally/100% fresh figs at the international market have never been asked by National Authorities, as more related to consumer preference.

Therefore, the reading of the provision for cleanliness at the UNECE's Standard for Figs by official inspection bodies should lead to an ample interpretation to facilitate the international trade of the product.

A broad interpretation of the UNECE's Standard for fresh Figs could take place not to jeopardize fruit offer in the future.

Proposal

Adoption of the Brazilian proposal of a footnote as stated in ECE/CTCS/WP.7/GE.1/2016/13 could lead to a more inclusive international standard, facilitating trade, improving legitimacy and worldwide adoption of the UNECE Standard for Fresh Figs.

Brazil would like to highlight that being UNECE Standards the international reference for the commerce of fresh fruits and vegetables, the aforementioned amendment to the Standard for fresh figs broadens its application to tropical and subtropical regions.

It also provides inclusiveness to all possible production practices and encompasses the aim of classification of fresh fruits and vegetable to offer quality and to guarantee production profitability.