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## Interview: Dr. Ernest P. Du Charme

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# Canker must have come from outside

*Citrus canker (*Xanthomonas citri*) is a bacterial disease that causes extensive damage to the branches, leaves, and fruit of plants in the Rue family, which includes all citrus fruits. The last known infestation in the United States was eradicated in Texas in 1947. Here, Dr. Ernest P. Du Charme, a plant pathologist with 35-years research experience, including work in Argentina and Japan, is interviewed by Agriculture Editor Marcia Merry on the canker's appearance in Florida.*

**EIR:** Is there a parasite or virus that could be developed to attack the citrus canker?

**Du Charme:** These possibilities exist but where they have been attempted they are not practical. The phages will work in petrie dishes and surface contamination under experimental conditions, but in nature, when you are trying to reach the bacteria beneath the skin of the fruit and in the peel, or under the natural respiration openings of the tree and plant, you don't reach them.

**EIR:** What about chemicals—copper compounds?

**Du Charme:** Copper compounds are effective in destroying the bacterium—copper sulphate, or a copper oxichloride. And the spraying rate we recommend is three fourths of a pound of metallic copper in 100 gallons of water. The copper itself, when the molecules are very finely ground to micron size, becomes an effective prophylactic and decontaminant. However, if there is an infection underneath the skin tissues of the plant, this remedy does not reach it.

**EIR:** What percentage of the Florida citrus acreage has been sprayed?

**Du Charme:** I expect that within the next two or three weeks, and this is only an opinion, at least half will be sprayed with copper as a prophylactic spray.

**EIR:** Can plants build up resistance?

**Du Charme:** No, plants do not have an immune system like animals. So this won't work. About the only thing that can be done with plants, is that you can get them accustomed to living in a very hostile environment with certain chemicals, but not with organisms or parasites.

**EIR:** Can we breed new stock resistant to pests?

**Du Charme:** Yes, you can. The only problem is that, one, citrus is a perennial crop and will keep for many years; two, the organisms mutate rapidly. There are millions and millions of bacteria on the leaf, for example, and mutation is encountered in, say, one in ten million bacteria. Now consider what happens with annual plants. We have learned how to tailor-make different varieties of wheat to withstand a given race of rust. But if you keep these varieties of wheat more than several years, they are susceptible because another race turns up. So in citrus, where you hope to keep the plant a hundred years, or fifty years, it is not practical.

**EIR:** Some observers, like Senator Hawkins, say the Florida canker is like the Mexican variety?

**Du Charme:** First of all, it isn't anything like the form they've got in Mexico. It is caused by the same bacterium, but a different strain than the Mexican. We have not had a chance yet to identify the Florida strain.

**EIR:** If you had the resources, could you roll the canker back throughout the world?

**Du Charme:** No, we can't eradicate it yet. We have to do this by destroying infected plants, including where the bacterium is carried in a latent form. In places like Japan, I don't know if you would ever get rid of it because it is all over the country. . . . Brazil has been working on an eradication program since 1957 in São Paulo, an attempt to confine it to some varieties of limes and lemons. In Argentina they began an eradication program in 1977, but they gave up. . . . Israel doesn't have it. The Mediterranean area is also free of it. They once had canker in South Africa but destroyed it.

**EIR:** How did the canker start in Florida?

**Du Charme:** We generally feel that wherever you have a new occurrence, it has to be brought in somehow. The most probable way is citrus plant parts. It could come in from any place they have canker. And it can be carried on the fruit. No matter how it got in, it was illegal entry. We do not permit the importation of any kind of citrus vegetative plant part—no budwood, no root, nothing. Plant pathologists are trying to find out how the material came into Florida.

**EIR:** We think there are grounds to suspect economic sabotage on behalf of those wanting strategic food and commodity scarcity in the West. What do you think?

**Du Charme:** Plantwise, this is possible. The reason I say that, is that in World War II the states of the United States were divided up into regions and there were plant pathologists assigned to that region and all they did was to patrol agricultural fields looking for diseases that were not typical of those areas. The United States is willing, and prepared in the face of prospects of biological warfare in agriculture.