

Short Note 5.3:

Peer Review of the Field Study

Introduction

The 1900-ft policy is known as a “bright line” in legal context.¹ It is frequently done out of necessity, otherwise a policy may be considered arbitrary or subjective. After hearing testimony by various experts both for the Department and Plaintiffs in the case, Judge Fleet ruled the 1900-ft rule was “scientifically unsound.”

Some questioned why a judge had the right to overrule what the Department had concluded as the proper eradication distance. It seemed to some that Judge Fleet was meddling in the right of the Department to make its own rules. Judge Fleet’s authority to rule on this issue came as a result of the changes in Florida law, which specifically made the 1900-ft policy a legal requirement. The changes in the law were pushed through by the Department, as they were being challenged to defend the 1900-ft rule in Administrative Court.

The Fourth District Court of Appeals was asked by the Department to reverse the opinion of Judge Fleet in the Broward District Court. They agreed with the Department as follows:

“The study it [the legislature] relied on was peer reviewed and published, two strong indicators of general acceptance of the scientific community.”

Opinion from the Fourth District Court of Appeals, January 15, 2003.

In the quote above, the “two strong indicators” in the 4th DCA opinion hardly makes any sense. Any article published in the *Phytopathology* journal must be peer reviewed. The 2001 and 2002 article were found to be worthy of being published in *Phytopathology* journal.

It is absurd to think this constitutes “general acceptance of the scientific community.” The members of the society, may not accept what is published. The editors know this, because anyone can submit a rebuttal to an article. This has happened in *Phytopathology* on several occasions. Membership in the American *Phytopathology* Society does not require a degree in biology, nor any work experience in biological science. Students from many other disciplines may join the society with the signature of a professor, that they are currently enrolled in a university program. An engineer taking environmental engineering courses (my case) is qualified for membership.

The publication of the study “which the legislature relied on” would refer to the January 2001³ and April 2002 articles⁴ as published in *Phytopathology*. Exactly what the Fourth District Court of Appeals thought the scientific community endorsed as sound scientific conclusions, is difficult to fathom. Neither articles contain a recommended distance to remove trees. There is no line in either of the articles which says, “95% of all bacteria will lie within 1900 ft of an infected tree” or anything like it. The 1900-ft value was within the “distances of spread” within the time periods, which in the second article ranged

from 0 to 2.2 miles.⁴ The articles also suggest that 125-ft would unlikely capture all subsequently infected tree.

Further, the 2002 citrus canker bill, came out of the Senate Agriculture Subcommittee in one form, and then was completely changed in the Finance and Banking Subcommittee. The Finance Subcommittee did what ever the FDACS wanted, so they could win the court case. I hope to post the video recording of the Florida Senate session to the website in the near future.

APS Peer Review Process

The American Phytopathological Society is an internationally recognized society dedicated to the advances within phytopathology and related areas of scientific research. Their website is www.apsnet.org. Submission of manuscripts to be published in their journals requires a review process. This includes Letter to the Editor as well as the full articles. Articles in my book have been from Plant Disease, Phytopathology and Molecular Plant Pathology journals.

Peer review for the APS attempts to cull out from the many submitted manuscripts, those most deserving to be published. The general criteria for publication with Phytopathology is the article provide new information or methods on plant disease, epidemiology or related areas.

The review process is done by the Editor-in-Chief selecting two anonymous reviewers to examine the submitted manuscript. In general, the theory and process are examined, to ensure all important details are included. The conclusions drawn from the results are also reviewed, mainly for consistency. The requirements for manuscripts submitted to the APS are listed on their website.

Reviewers focus on the technical details. They are likely to require full explanations of the methods used, and results obtained. Discussion of the research may include the opinions of the authors on the accuracy or validity of the results, comparison with other published works and other comments based on general experience. I do not believe either the 2001 or the 2002 articles^{3,4} should have been accepted by the APS. This will be covered in a separate short note.

Comments from APS as conveyed by Dr. Dixon

The following was received from Dr. Wayne Dixon, FDACS/DPI on March 7, 2003 providing comments of Dr. Hillman, the Editor-in-Chief of Phytopathology as follow:

1. Letters to the Editor are evaluated by the Editor-in-Chief of Phytopathology. Research papers are evaluated by Senior Editors of specific journal sections. Both are peer-reviewed.
2. Letters to the Editor are not considered primary research papers. Although there may include original research, they may also include summaries, analyses, and interpretations of data that are beyond the scope of primary research papers. They may include opinions of the authors that are not appropriate for primary research papers.
3. Letters to the Editor differ in form from primary research papers. They do not contain subsections for Abstract, Introduction, Materials and Methods, Results, and Discussion.

Other Criteria for Acceptance of Scientific Studies

Mr. Richard Gaskalla wrote on December 22, 2000 in reply to letters sent to the Department:

The results of the study have been presented several times to scientific audiences:

- The annual meeting of the American Phytopathological Society²
- Risk assessment groups
- Interested parties
- International Citrus Canker Workshop held in Fort Pierce this past June.

He concludes, “the feedback received from prominent scientists around the world indicates the study is sound and the conclusions valid.” In a letter dated February 26, 2001, Mr. Gaskalla stated, “The study was designed and implemented by plant pathologists associated with ... University of Edinburgh, Institute of Ecology and Resource Management, Scotland.” He copies the Commissioner of Agriculture, Mr. Craig Meyers on this letter.

This is a reference to Dr. Gareth Hughes, a highly respected epidemiologist, who was a co-author on the January 2001 Letter to the Editor, but not a co-author on the April 2002 article. Mr. Gaskalla states the Letter³ lacks details, “does not have a full description of methodology, results and discussion of analysis as will occur in subsequent peer-reviewed scientific articles.”

Mr. Gaskalla did not include the presentation to the Task Force in May 14, 1999 on the 1900-ft study. There is nearly nothing in the minutes of the meeting on what Dr. Gottwald had presented. The APS annual meeting was held in Montreal, Canada in August 1999.² Prior to the implementation of the 1900-ft rule, there was really nothing for the “scientific community” to review or give feedback at any of these meetings, as there was no formal paper on the study.

The only real means of validating a study, is first determine what was concluded from the data analyses and then conduct a “bottoms up” review of the data. The collected raw data must be carefully examined, to determine that reliability of the conclusions. Critical review of statistical studies with months of data, would require a third party investigation. The investigation would examine how the data collected was collected, any subsequent changes to the data and all procedures and programs used in the study.

A good example where faulty scientific analysis was revealed, occurred in the Florida panther studies. The scientists selectively used only day time data in determining the roaming range of the panthers, to bias their results. It took years to uncover the fatal flaws in the research.⁵

Concluding Remarks

What should be acceptable as “sound science” in the court rulings, where bright line determination are at issue, is likely to continue to be controversial.

The Fourth DCA took a short cut to the critical issue, as it appears they simply cut and pasted what was in the appeal brief submitted by the Department. Unfortunately, it was pure nonsense.

The Department was engaging in “cover letter” antics. A study is completed without a firm recommendation. The cover letter from an official not associated with the study, adds what they would like people to conclude from the research. Mr. Gaskalla letters are cover letter antics as were the briefs submitted to the appellate court.

At a minimum, the courts should have identified what these two articles actually concluded from the field study. The articles conclusions are at best, not particularly remarkable— the 125-ft rule would not capture all of the subsequently infected trees. Since the 125-ft circle area cover only 1.1 acres, there are still many citrus trees which could become infected. A 1900-ft circle destroys all citrus trees in 260 acres, so there is a higher chance of eradicating subsequently infected tree as there are fewer surviving trees.

References

The website www.apsnet.org should be referred to in respect to acceptance of manuscripts. Each journal has its own rules on manuscript acceptance.

1. Discussion of bright lines is summarized in Wikipedia: https://en.wikipedia.org/wiki/Bright-line_rule
2. Gottwald, T. R., Sun, X., Riley, T., Graham, J., 1999. Estimating the Spread of Citrus Canker in Urban Miami via GPS, Annual APS Meeting Abstract, Phytopathology, 89:S29. Publication no. P-1999-0202-AMA (1999 meeting, Montreal).
3. Gottwald, T. R., Hughes, G., Graham, J. H., Sun, X., Riley, T., 2001, The Scientific Basis of Regulatory Eradication Policy for an Invasive Species, Phytopathology, 91:30-34.
4. Gottwald, T.R., X. Sun, Riley, T. Graham, J. H., Ferrandino, F. and Taylor, E., 2002, Geo-Referenced Spatiotemporal Analysis of the Urban Citrus Canker Epidemic in Florida, Phytopathology, Vol 92, No. 4.
5. Gross, L. , 2005. Why not the best, How science failed the Florida Panther, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1188244/>

Notes from Wikipedia

A bright-line rule (or bright-line test) is a clearly defined rule or standard, composed of objective factors, which leaves little or no room for varying interpretation. The purpose of a bright-line rule is to produce predictable and consistent results in its application. The term "bright-line" in this sense generally occurs in a legal context.

Bright-line rules are usually standards established by courts in legal precedent or by legislatures in statutory provisions. The United States Supreme Court often contrasts bright-line rules with their

opposite: balancing tests (or "fine line testing"), where a result depends on weighing several factors—which could lead to inconsistent application of law or reduce objectivity.