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Animal and Plant
Health Inspection
Service



Citrus Canker Eradication Program

Environmental Assessment, April 1999

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I. Introduction and Need for the Proposal

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), is proposing an enhanced program in cooperation with the Florida Department of Agriculture and Consumer Services (FDACS) for the eradication of newly discovered citrus canker infestations. The proposed program combines a number of proven control methods with regulatory quarantines. This environmental assessment analyzes the environmental impacts of the proposed program and its alternatives.

Citrus canker is a disease, caused by the bacterium *Xanthomonas axonopodis* pv. *citri* (Hase) Dawson, which can cause extensive damage to twigs, leaves, and fruit of susceptible citrus varieties. The disease often causes fruit to drop prematurely and to be unmarketable because of lesions on the peel. The bacteria that cause citrus canker can survive for extensive periods on citrus branches and bark. The disease is spread by wind, rain splash, mechanical activities (such as pruning, picking, and spraying carried out within and between groves), movement of infected plants or plant parts, and the activities of birds, insects, and/or mammals. Citrus canker threatens the citrus growing areas of the United States because of its rapid spread, high potential for damage, and impact on exports to foreign countries and interstate movement.

The eradication of citrus canker from infected areas of the United States is necessary to prevent damage to commercial and home-grown citrus and further spread of the bacterial disease agent. APHIS' authority for this proposed eradication program is based upon the Incipient and Emergency Control of Pests [Act] (1937), the Organic Act of the Department of Agriculture (1944), the Cooperation with State Agencies in the Administration and Enforcement of Certain Federal Laws Act (1962), and the Food Security Act of 1985. In addition, cooperating State agriculture departments have control authorities that permit participation in cooperative pest management programs.

APHIS has been cooperating with FDACS in a citrus canker eradication program in several counties in Florida. Eradication efforts are continuing in Dade, Broward, Collier, and Manatee Counties. The potential effects of this program were analyzed in APHIS' "Citrus Canker Eradication Program, Dade County, Florida, Environmental Assessment, November 1995" and "Citrus Canker Eradication Program, Environmental Assessment, January 1999." The more recent discovery of infected groves in Hendry County has resulted in the inclusion of regulated program areas there.

Eradication of bacterial citrus canker outbreaks requires intense survey to ensure that all infected trees have been eliminated. The recent introduction

of certain citrus insect pests to Florida has complicated eradication efforts, in that physical damage to citrus caused by these pests contributes to increased susceptibility to bacterial citrus canker infection. In particular, damage from citrus leafminer (*Phyllocnistis citrella* (Stainton)) has been associated with increased spread of citrus canker. This pest can facilitate spread of citrus canker from 1- to 300-fold. A localized outbreak of bacterial citrus canker in Manatee County in 1994 was declared eradicated, but no funding was provided for further survey of the area despite the recommendation from USDA and FDACS to continue surveillance of the high risk areas. Bacterial citrus canker was again detected in Manatee County in 1997 and the genetic profile of the detected bacterium indicated that the presence was most likely the result of low level bacterial citrus canker infection that was not eliminated in the earlier infestation. The copper compounds, which have been used to treat citrus canker symptoms on infected trees, are now known to mask evidence of the disease and may have actually hindered detection. The continuing expansion of the infected area in Dade and Broward Counties indicates that the frequency of survey, removal of infected trees, and treatment of infected citrus has not kept up with the spread of the citrus canker infestation there. Initial surveys of the Collier County infestation indicate that it may be an isolated outbreak, but continuing surveillance is needed to verify that citrus canker is not more widespread and infected trees have been completely eliminated. Recently, a small infestation was detected on Seminole tribal lands in Hendry County. The recent detection of citrus canker in Hendry County and the continuing need to expand the quarantine area has prompted program review of the overall citrus canker eradication effort.

Previous environmental documentation, programs' histories, and anticipated environmental consequences have provided evidence that APHIS' citrus canker eradication programs have been of negligible environmental consequence. Notwithstanding an earlier finding that future citrus canker programs normally qualify for categorical exclusion from further NEPA analysis, the necessity to consider new issues related to environmental justice, cumulative impacts, and program changes justify the preparation of a programmatic environmental assessment that analyzes and addresses alternatives and impacts not considered in previous documentation.

II. Alternatives

Alternatives considered for citrus canker control include No Federal Action, Regulatory Quarantine Only, Existing Citrus Canker Eradication, Enhanced Citrus Canker Eradication (preferred alternative), and Enhanced Eradication through Host-free Buffer Zones. Each is discussed briefly below.

A. No Federal Action

Under No Federal Action, APHIS would take no action to eradicate, control, or otherwise restrict the movement of citrus canker from infected areas of the United States. The State agriculture departments, grower groups, and growers could take whatever steps they deem necessary to eliminate, suppress, and/or contain the infestations.

B. Regulatory Quarantine Only

Under a regulatory quarantine only, APHIS would take actions designed to impede the spread of citrus canker from infected areas. These actions would typically involve designating a quarantine area and regulated items (usually citrus plants, citrus products, or objects that come in contact with infected items and are capable of transmitting the disease), and imposing the necessary restrictions or prohibitions on the movement of the regulated items. APHIS would not participate in eradication efforts or employ any methods to control the disease, but State agriculture departments could take whatever control measures they deemed necessary, concomitant with their own objectives and resources.

C. Existing Citrus Canker Eradication

This alternative is a continuation of the current program. Regulatory quarantines are used in combination with any or a combination of control methods. The effectiveness of this alternative depends primarily upon the ability to eliminate infected hosts in a timely manner to prevent spread of bacterial citrus canker. Following is a table of the control methods that have been approved for citrus canker control. There have been a number of copper compounds previously approved (but now discontinued) as treatments for this program. These included tribasic copper sulfate, bordeaux mixture, copper hydroxide, basic copper chloride, and copper oxychloride. These compounds are known to mask evidence of the disease and may actually hinder complete eradication.

D. Enhanced Citrus Canker Eradication (Proposed Alternative)

This alternative is similar to the existing current program in its use of specific quarantine and control methods. Although copper compounds were used previously in eradication efforts, the enhanced program will discontinue their use because they can mask symptoms of the disease and may actually hinder complete eradication. The enhanced program apportions greater monetary and personnel resources to the eradication effort. This will provide for more frequent and more intensive survey

Table 1. Citrus Canker Control Methods

Treatment type	Method
Mechanical	Tree removal
Burning	Curtain burner Open burning
Chemical	
Copper compounds (antimicrobials)	
Trichlopyr (stump killer)	
Sodium hypochlorite, sodium O-phenyl phenate (fruit treatment)	
Gallex 1027, Hibiclens, Hibistat, Sani Clean (antimicrobial soaps)	
Quaternary ammonia (disinfectant)	

efforts for earlier detection of infected trees. It will allow more rapid removal of infected trees and immediate treatment of infected stumps to more effectively prevent spread of citrus canker to adjacent trees. This expansion of resources is considered critical for successful eradication program effort in the 500-square mile urban quarantine area of Dade and Broward Counties.

As part of APHIS' ongoing effort to seek effective alternative treatments, routine review and consideration of new methods is part of program planning. APHIS cooperates with other government agencies, like the USDA's Agricultural Research Service (ARS), for basic research and also conducts methods development (applied) research in the field. Several methods are not ready for program implementation but show promise for potential future applications. The most likely applications involve a new fruit disinfectant and membrane interactive molecule (MIM) technology.

The fruit disinfectant is marketed under the trade name, Zerotel, and is a mixture of hydrogen peroxide and peracetic acid. It could be used to eliminate citrus canker inoculum on fruit. This mixture is effective against a broad range of microorganisms and their spores. Its advantages include low toxicity at effective concentrations, with components breaking down readily into simple forms of water, oxygen, and acetic acid. A disadvantage is its corrosiveness in concentrations exceeding 5% peracetic acid.

MIM technology involves the use of small, nontoxic peptides that attach themselves to bacterial cell membranes and cause the cells to leak and die. Topical MIM applications have been tested against citrus canker with some success, but the effectiveness appears to be limited because complete control requires contact with all of the disease cells. If applied, however, as

part of an integrated pest management program, it may reduce the disease inoculum substantially in the field, thereby reducing the transport of that inoculum to other areas during hurricanes or other severe weather events.

The same types of peptides used in topical treatments could be delivered systemically to citrus plantings via a genetically engineered virus. The delivery virus could be a weak or disabled virus. If all host vegetation could be located, MIMs could be applied systemically to those hosts with the potential to eradicate citrus canker from infected areas. ARS and a number of companies are currently developing antibacterial disease resistance technology and/or delivery systems. Applications of MIM technology are under investigation for a number of bacterial diseases.

E. Eradication through Citrus-free Buffer Zones

This alternative, under consideration by the program, involves implementation of all efforts being proposed under the enhanced citrus canker eradication alternative as well as creation of a mile-wide, host-free “buffer” between potentially infected areas and non-infected areas. This would involve removal of citrus plants in an effort to stop the spread of citrus canker on the leading edge. The area under proposed for the buffer is a mile-wide strip of land along the southern edge of Palm Beach County to prevent northward progression of the current citrus canker infestation. It is recognized that adverse weather conditions (e.g., tornadoes, hurricanes) can contribute to spread of citrus canker (including infected fruit, leaves, and branches) for distances greater than the proposed buffer. The distance of natural transport of viable citrus canker bacteria was considered to be about 125 feet based upon a study in Argentina in the 1970's. Recent studies in Florida have determined that 90 percent of the newly infected trees occur within 1,200 feet of the tree that serve as the source of the bacterial disease, but wind-borne spread may carry the viable bacteria as far as 3,900 feet. Although adverse weather conditions are known to transport viable citrus canker bacteria greater distances than a mile, the spread of infection would be considerably less likely with this buffer. This buffer would not, however, prevent all human-assisted transport of citrus canker bacteria.

III. Environmental Impacts of the Proposal and Alternatives

A. No Federal Action

The biological history and pest potential of citrus canker suggest that, if allowed to go unchecked, the disease would cause devastating losses to

commercial and private citrus in the United States. A widespread citrus canker infestation would cause heavy losses in commercial and private citrus production that could greatly reduce the supply of agricultural commodities and home produce, and could adversely affect homeowners who depend on backyard plantings to supplement their food supplies. The continued presence of citrus canker in the United States would result in lost export markets for citrus products.

Minimal adverse impacts to human health, the physical environment, or nontarget species would result under the no action alternative. Such impacts could include impacts to human health as a consequence of commercially used fungicide treatments. Although humans would not be impacted by program citrus canker control methods (lacking under this alternative), they could be impacted through health impacts from the use of homeowner-directed chemical treatments or by the loss of a source of backyard fruit important in providing a vitamin supplement to their diets. Impacts to the physical environment and nontarget species would be minimal, related to esthetic damage and diminished productivity of the citrus trees.

B. Regulatory Quarantine Only

Under a regulatory quarantine only, APHIS would not participate in any actions to eradicate or suppress the infestation of citrus canker. The State agriculture departments, however, concomitant with their own resources and quarantine objectives, could undertake actions to eradicate or suppress the infestation. Depending upon their actions then, the result could range from the retardation of citrus canker's spread to other areas of the country to eradication of newly discovered infestations.

Impacts to human health, the physical environment, or nontarget species that are a direct consequence of enacting a regulatory quarantine only would be similar to those anticipated under the no action alternative and are expected to be minimal. The potential indirect impacts associated with this alternative that may be incurred from the implementation of specific control methods by the State agriculture departments would depend upon the control methods selected; they may reasonably be expected to be the same as those discussed under the eradication alternative which follows.

C. Existing Citrus Canker Eradication

The existing citrus canker eradication is characterized by the use of regulatory quarantines and any or a combination of control methods. The environmental impacts resulting from the regulatory quarantines are the same as those discussed under the "Regulatory Quarantine Only" alternative

above, and are minimal. The ongoing environmental impacts that would result from the use of control methods under this alternative are discussed in this section and are also expected to be minimal.

1. Control Methods

a. Mechanical Treatments

The environmental impacts associated with mechanical treatments (tree removal) are related to the loss of citrus plantings and/or their fruit. Some, though not all plantings in the area, will be destroyed as a consequence of this program. Commercial citrus groves and suburban plantings may occur throughout program areas. Any program area expansions in response to detections of new infestations would be expected to have similar environmental impacts. Perceived esthetic values of yard plantings may be diminished because of the loss of esteemed plantings and the unsightly appearance of the old tree stumps. The removal of citrus plant materials may be resented by homeowners who do not understand the reasons for the action or who oppose government intrusion. Loss of fruit that supplements the diet of some residents may have a negative impact. The degree of impact may vary according to the relative dependancy the residents have on their own home produce, but should not exceed minimal.

b. Burning and Landfill

Destruction of the disease organisms present on removed trees and limbs is best achieved through burning of the infected plant materials or burial in a landfill. Although open burning will destroy the bacterial agent responsible for disease, there is potential for considerable smoke and atmospheric emissions from this method. For commercial groves, the removed plant materials may be burned or buried on site, or placed in municipal landfills. For residential plantings, the removed plant materials may be burned in municipal waste incinerators or placed in the municipal landfill. The municipal incinerators are efficient at eliminating biological materials with minimal emissions (some water vapor and carbon dioxide) to the atmosphere. This incineration system is, therefore, acceptable from an environmental standpoint and preferred over open burning. The emissions from the burning of plant materials pose minimal environmental impacts.

c. Chemical Treatments

Triclopyr is a commonly used, registered herbicide. Treatments with trichlopyr are applied by direct spraying or painting the stumps after the infected trees have been removed. The chemical dries and is readily absorbed by the stump. The environmental degradation of trichlopyr occurs readily through photodegradation and microbial decomposition.

Although trichlopyr is not applied to soil by the program, any trichlopyr residues landing on soil are not strongly adsorbed by the soil particles and readily photodegrade. Trichlopyr is mobile in soil, but the applications directed at stumps are not expected to result in any leaching. The herbicide kills the tree in a way that minimizes exposure to people, pets, and other nontarget species. The formulations of trichlopyr used in citrus canker eradication treatments are slightly to very slightly toxic to humans and other mammals. Trichlopyr is slightly toxic to birds. There is greater toxicity to fish and other aquatic organisms, but program applications to stumps would not be expected to result in any contamination of water. Trichlopyr is a slight eye irritant and slight to moderate skin irritant. There is no evidence of carcinogenicity in chronic studies. The potential exposure to program pesticide applicators and the general public are well below any concentrations that could be expected to result in any acute or chronic toxicity.

The antimicrobial soaps are used for washing the hands and clothing of citrus canker program personnel. These surfactants are considered safe for human use as a cleansing agent. No adverse environmental impacts are associated with their use.

The fruit treatments are wash solutions used to reduce the risk of spreading citrus canker that may be on the fruit surface. The wash solutions for treating fruit from restricted areas are considered safe for human use. No adverse environmental impacts are associated with their use.

Quaternary ammonium compounds are used to disinfect equipment and tools. Equipment is normally misted with hand-held or vehicle-mounted sprayers, using small quantities of the material that is allowed to run off onto the ground or into a sewer system. Exposures to work personnel are minimized by applicator-protective gear and no adverse effects to workers would be anticipated. The small amounts used, the manner of use, and the adsorptive characteristics of the compounds would result in only minimal environmental impact.

Antimicrobial copper compounds were previously applied to citrus plantings to treat citrus canker symptoms. These compounds have now been discontinued because they are known to mask evidence of the disease and may actually hinder complete eradication. Copper is found in trace amounts in all plant and animal life, and is considered essential for nutrition. Copper compounds are exempt from the requirement for a tolerance when applied to crops in the field (40 Code of Federal Regulations 180.1001).

2. Additional Considerations

The potential impacts from the proposed action's component control methods (mechanical treatments, burning, landfill, and chemical treatments) are all expected to be minimal. It is difficult to quantify precisely the potential cumulative impacts, which are dependent upon the nature of other unknown control methods (and/or impacts) in conjunction with program controls. However, for the chemical control methods which are of principal concern, the combination of minimal impact, the constrained manner of application, and routine program safety procedures, suggests that any potential cumulative impacts would be minimal also. The minimal impacts from the short-term containment of the infestation and eradication efforts preclude the greater potential for cumulative impacts from an extended regulatory or suppression effort. The existing program has had limited Federal involvement and the lack of funding has restricted the program's ability to ensure timely surveillance of citrus for signs or symptoms of canker bacteria. The frequency of inspection of trees and the early elimination of infected trees are critical to a successful eradication effort. Although the current program has eliminated more than 100,000 trees in Dade and Broward Counties, those efforts have not been successful at containing the spread. The efforts in Manatee County have been more successful, but eradication is not complete. The limited resources for this work under existing funding are not expected to be adequate to contain or eradicate the citrus canker in a timely manner. The lack of ability to contain the outbreak in Dade and Broward Counties under the existing program indicates that continuation of this program would be expected to require gradual expansion of the quarantine area and continuing treatments. As a result of expansion of quarantine areas and increasing need for treatments, the potential adverse environmental impacts of this action would be expected to exceed those of the enhanced citrus canker eradication alternative, which is designed to more effectively contain and eradicate the current citrus canker outbreak.

D. Enhanced Citrus Canker Eradication

1. Control and Regulatory Methods

The enhanced citrus canker eradication alternative is characterized by the expanded use of regulatory quarantines and any or a combination of control methods to eradicate the current infestation. The adverse environmental impacts resulting from the regulatory quarantines and control methods are similar to those discussed under the existing citrus canker eradication, and are minimal. This alternative does not include the use of copper compounds as antimicrobial agents, and no impacts associated with such usage would occur. The intensity and duration of the adverse environmental impacts from an enhanced program is expected to be considerably less because the citrus canker should be more effectively contained and infected sites more thoroughly eradicated. Although environmental impacts from this alternative are expected to be

minimal, two additional program considerations (environmental justice and endangered species) are described further in this section.

2. Additional Considerations

a. Environmental Justice and the Proposed Action

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires each Federal agency to make achieving environmental justice part of its mission. Agencies must identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions.

Citrus canker detection, regulatory, and eradication efforts (as necessary) are targeted at diseased citrus plantings, wherever they may be located. Citrus canker infestations have been detected in some minority or low-income communities. When program operations occur in those communities, some residents may consider themselves to be victims of discrimination (particularly if citrus canker was not detected in other surrounding communities and those surrounding communities are not subjected to program activities).

Although citrus canker would result in drastically reduced fruit production and potential loss of the trees within a few years, the condemnation and seizure of citrus plantings and fruit represents an adverse action that may be misinterpreted by minority or low-income residents as government actions that discriminate against their people and their community. The citrus fruit and plantings may be holdings that are commercially, esthetically, or culturally valuable to the community as a whole or to individuals within the community.

Although program impacts are considered minimal in nature (because of the lower marketability of the diseased fruit and the progressive deterioration of the citrus plantings), it is important to communicate with and be responsive to impacted communities. Program managers should become aware of ethnic sensitivities and respond in an appropriate, responsible manner. New infestations or expansions of the program areas should address the need for good communication with residents. Meetings, public notices, and official forms of communication should be bilingual for communities where residents are not fluent in English.

(1) Big Cypress Seminole Indian Reservation

Citrus canker was discovered in a block of grapefruit in a commercial citrus grove on the Big Cypress Seminole Indian Reservation. The

Seminoles manage approximately 2,000 acres of citrus there as a tribal enterprise, in which the profits and losses are shared equally by all members of the tribe. In discussions and a field trip with a tribal representative and her grove managers, it was learned that the Seminoles are actively pursuing citrus canker eradication and have condemned approximately 21 acres of citrus trees. The Seminoles are acute business managers, and although they do not perceive any environmental health or ecological concerns over the citrus canker eradication efforts they are undertaking, they are very concerned about economic impacts that will be felt by their enterprise. They understand that the citrus eradication program is necessary to protect their business and do not perceive it to be a discriminatory action on the part of the government. There was some concern about a lack of communication with regard to government regulatory actions and meetings, and they hope to be prominently in attendance at future meetings.

(2) Hispanic and Black Communities

Citrus canker has also been found in a number of communities that are predominantly Hispanic or black. Inquiries to a number of Hispanic and black community groups revealed no organized or particular interest in the citrus canker eradication efforts by any subgroup of their communities' residents.

The presence of residential plantings of citrus in these communities varies considerably, with the greatest diversity of species thought to occur in low- to middle-income neighborhoods. Condemnation and seizure of citrus plantings in these neighborhoods have resulted in complaints from a number of individuals, but those complaints have been similar to those from individuals in communities which are not minority communities. In general, the residents have regretted the loss of their citrus and frequently have demanded that the government pay them for the loss or replace the plantings, but they have not perceived the eradication efforts to be discriminatory in nature.

Review of program activities and products (especially those of the Florida Department of Agriculture and Consumer Services) reveals a special sensitivity to the needs of Hispanic communities. Many of the program personnel are bilingual and are especially suited to work in Hispanic communities. Program literature is also bilingual, with English and Spanish texts incorporated equally in documents such as citrus canker pamphlets, letters, survey sheets, appointments, and notifications.

b. Endangered and Threatened Species and the Proposed Action

Section 7 of the Endangered Species Act (ESA) and the ESA's implementing regulations require Federal agencies to consult with the U.S. Fish and Wildlife Service (FWS) and/or the National Marine Fisheries Service to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat.

APHIS has considered the potential effects on endangered and threatened species and their habitats. Generally, the contained nature of the citrus canker infestations and the program treatments preclude any effects on those species and their habitats. However, APHIS will consider each program increment on a site-specific basis and consult with the U.S. Department of the Interior, Fish and Wildlife Service (FWS). APHIS will adhere to any specific protection measures mutually agreed on with FWS.

c. Potential Cumulative Impacts

The potential impacts from the proposed action's component control methods (mechanical treatments, burning, and chemical treatments) are all expected to be minimal. It is difficult to precisely quantify the potential cumulative impacts, which are dependent upon the nature of other unknown control methods (and/or impacts) in conjunction with program controls. However, for the chemical control methods which are of principal concern, the combination of minimal impact, the constrained manner of application, and routine program safety procedures suggest that any potential cumulative impacts would be minimal also. The minimal impacts from the short-term containment of the infestation and eradication efforts preclude the greater potential for cumulative impacts from an extended regulatory or suppression effort.

E. Eradication through Citrus-Free Buffer Zones

Citrus canker eradication would be characterized by the implementation of all efforts being proposed under the enhanced citrus canker eradication alternative as well as creation of a mile-wide, host-free "buffer" between potentially infected areas and non-infected areas. This would involve considerable removal of citrus plants in an effort to stop the spread of citrus canker on the leading edge. The ability of viable citrus canker bacteria to spread distances in excess of a mile has raised the issue of whether the creation of this buffer would be any more effective at containing the spread of citrus canker than the enhanced citrus canker eradication alternative. The impacts from cutting trees to create a large buffer could be considerably greater than surveillance, cutting, and

treatment under the enhanced citrus canker eradication alternative. On the other hand, the buffer might be more effective at preventing further spread of the bacterial disease. There is ongoing review of this alternative and the use of similar buffers to increase effectiveness. The cost effectiveness and potential impacts of this alternative make it unacceptable at present, but this alternative may be reconsidered if circumstances indicate the need for more intensive efforts.

IV. Listing of Agencies, Organizations, and Individuals Consulted

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**Finding of No Significant Impact
for
Citrus Canker Eradication Program
Environmental Assessment,
April 1999**

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), has prepared an environmental assessment (EA) that analyzes alternatives for the eradication of infestations of citrus canker, *Xanthomonas axonopodis* pv. *citri* (Hasse) Dawson. The USDA is mandated under the Federal Plant Pest Act of 1957 (7 United States Code (U.S.C.) 150) and the Plant Quarantine Act of 1967 (7 U.S.C. 164) to protect U.S. agriculture by preventing the entrance and spread of foreign plant pests and to establish quarantines and regulate movement of potentially infested materials. The EA, incorporated by reference in this document, is available from the following address:

USDA, APHIS, PPQ
Program Support
4700 River Road, Unit 134
Riverdale, MD 20737-1236

The EA for this program analyzed alternatives of (1) no Federal action, (2) regulatory quarantine only, (3) existing citrus canker eradication, (4) enhanced citrus canker eradication, and (5) enhanced eradication through host-free buffer zones. Each of those alternatives was determined to have potential environmental consequences. APHIS selected enhanced citrus canker eradication, which relies on regulatory quarantines and selected control methods, because of its capability to meet disease eradication and containment objectives while resulting in negligible environmental impact.

APHIS has considered the potential effects on endangered and threatened species and their habitats. In general, the contained nature of the citrus canker infestations and the program treatments preclude any effects on those species or their habitats. Nevertheless, APHIS considers each program increment on a site-specific basis and consults, as necessary, with the U.S. Department of the Interior, Fish and Wildlife Service.

I find that implementation of the proposed program will not significantly impact the quality of the human environment. I have considered and based my finding of no significant impact on the anticipated environmental consequences of the proposed program, as discussed in the associated environmental assessment.

In addition, I find that the environmental process undertaken for this program is entirely consistent with the principles of "environmental justice," as expressed in Executive Order 12898. Issues of concern to the minority and low income communities of the program area and to the Seminole Indian tribe regarding program actions were considered carefully and no disproportionate effects to these residents are anticipated as a result of this program.

Because I have not found evidence of significant environmental impact associated with this proposed program, I further find that an environmental impact statement does not need to be prepared and that the program may proceed.

/S/

Michael J. Shannon
State Plant Health Director
Plant Protection and Quarantine
Animal and Plant Health Inspection Service

4/19/99

Date