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Plum Pox Cooperative Eradication Program

Environmental Assessment, March 2000

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I. Introduction and Need for the Proposal

Plum pox (or Sharka) is an extremely serious virally-transmitted disease that can infect many species of the genus *Prunus*, including but not limited to plum, peach, apricot, almond, nectarine, and sweet and sour cherries. Several wild and ornamental *Prunus* species can also be infected. Infected trees produce fruit that is usually unmarketable because of a degradation of quality and the presence of blemishes. Infected trees eventually suffer a severe reduction in the amount of fruit that is produced. The presence of the plum pox virus in host trees also exacerbates the effect of other common viruses that infect various *Prunus* species. In Europe, where the disease is prevalent, it is considered the most serious disease affecting stone fruit production. The plum pox virus has not previously been reported in the United States which has exterior quarantines in place to prevent the importation of the virus.

In October 1999, the plum pox virus was found in trees of a peach orchard in Adams County, Pennsylvania. Delimiting surveys have now confirmed a distribution in 18 properties within an 218-acre area that is approximately 4 miles in diameter. Emergency action notifications which prohibited the movement of all plant material except fruit from the areas were issued, and later State or Federal destruction orders were issued that required all or significant portions of the orchards to be destroyed by April 1, 2000. The Commonwealth of Pennsylvania has established a quarantine which includes the infested properties plus a buffer zone around the properties, because the disease may be spread through aphid vectors and because there was not adequate time to do further delimiting surveys in the vicinity. The quarantine (for parts of Latimore and Huntington Townships in Adams County) prohibits the movement of host fruit trees and budwood within the quarantine area or to any place outside the quarantine area.

The Animal and Plant Health Inspection Service (APHIS) is proposing an emergency eradication program embodied in a Federal quarantine that is parallel to Pennsylvania's quarantine that will (1) require the destruction of infected host material, (2) support Pennsylvania's efforts to prevent intrastate movement of infected host material, and (3) prevent interstate and international movement of infected host material. APHIS' authority to take action to eradicate and prevent the dissemination of plum pox disease is based upon the Organic Act (7 United States Code (U.S.C.) 147a), which authorizes the Secretary of Agriculture to carry out operations to eradicate insect pests; and the Federal Plant Pest Act (7 U.S.C. 150aa - 150jj) and the Plant Quarantine Act (7 U.S.C. 151 - 167), which authorize the Secretary of Agriculture to use emergency measures to

prevent dissemination of plant pests new to or not widely distributed throughout the United States.

II. Alternatives

Two alternatives were considered for this emergency program—no action or eradication. Each is discussed briefly below.

A. No Action

Under the no action alternative, APHIS would take no action, either unilaterally or in cooperation with the Commonwealth of Pennsylvania, to eradicate or prevent the dissemination of plum pox. The environmental impact of no action would be shaped by the Commonwealth's ability to react to the presence of the disease, successfully delimit its locations, destroy infected host material, and prevent dissemination. If the disease is confined to the presently delimited area, the outlook for eradication by the State would be favorable, and environmental and economic impacts would be expected to be insubstantial. However, if the disease is found to be quite widespread, Pennsylvania might not have the capability to control it, and the environmental and economic impacts from the disease could be substantial.

B. Plum Pox Eradication (Preferred Alternative)

The preferred alternative, an eradication program, would be characterized by parallel Federal and State quarantines and cooperative Federal/State actions involving the removal and destruction of infected trees, the prohibition of intrastate movement of potentially infected host material, and the prohibition of interstate and international movement of potentially infected host material. APHIS' cooperation with Pennsylvania on the program would enhance the ability to eradicate plum pox while the area is still small, thereby resulting in minimal economic and environmental impact from the disease.

III. Environmental Consequences

A. No Action

The biological history and pest potential of plum pox suggest that, if allowed to go unchecked, the disease would cause devastating losses to commercial and private stone fruit trees in the United States. Plum pox is characterized by round spots (pox) on the fruit, leaves, stems, and seeds. Although plum pox does not kill trees, it would make the fruit trees more susceptible to secondary infections that could ultimately kill the trees. The disease does make the fruit unmarketable and drastically reduces yield. A widespread plum pox infestation would cause heavy losses in commercial and private fruit 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 plum pox in the United States could result in lost export markets for stone fruit products. Based upon the recent detection of plum pox in Pennsylvania, Canada has already placed restrictions on movement of stone fruit cultivars from the United States.

Adverse impacts to human health, the physical environment, or nontarget species could be substantial under the no action alternative if the plum pox infestation is not contained. Although humans would not be directly impacted by the program's plum pox eradication methods (lacking under this alternative), they could be impacted through 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 affected by the loss of a percentage of fruit trees to the disease. Those trees would otherwise have esthetic value or provide cover and habitat for wildlife. The fruit trees infected by plum pox virus include plums, peaches, nectarines, apricots, almonds, and cherries. The plum pox virus detected in Pennsylvania is of the D strain. This strain is not known to be seed-transmitted and is less efficiently aphid-vectored than other strains. Therefore, success in an eradication program of this strain of plum pox is more likely than from introduction of some other strains. In addition to fruiting trees, the virus may infect ornamental and wild *Prunus* tree species. Plum pox virus has also been shown to infect some common weeds (clover and lamb's quarters) as well as some garden plants (tomatoes, petunias, and zinnias). Infection of these weeds and garden plants could serve as a reservoir for survival of the virus and a medium for spread and transmission of the disease; early indications suggest little risk of this, but the potential for this route of disease transmission is still being investigated. Although the strain of plum pox in the present infestation is less efficiently spread by aphids

than other strains, one of the most efficient vectors is the green peach aphid (*Myzus persicae*), a species known to colonize peaches and other stone fruits in Pennsylvania.

B. Plum Pox Eradication

Plum pox eradication would be characterized by the use of regulatory quarantines and elimination of any infected host material. The Federal regulatory quarantines would enhance the quarantines enforced by the Commonwealth of Pennsylvania and could help to minimize infection and spread of the virus. The environmental consequences of the regulatory quarantines relate to the extent to which these measures successfully prevent damage by the plum pox virus. Although there are no direct impacts of the regulatory quarantines, the ability of this action to prevent further adverse effects from the virus contributes substantially to protection of the environment. The removal and destruction of infected trees and host materials eliminates a potential source of inoculum for spread of the disease. This should help to minimize damage from the present infestation in Pennsylvania and to prevent spread of the virus. The environmental impacts that would result from this action are discussed in this section and are also expected to be minimal.

The environmental impacts associated with mechanical removal of infected trees relate to the loss of fruit tree plantings and/or their fruit. The virus is not spread mechanically by tree removal equipment, so there is no need for disinfection of this equipment. Some, though not all, plantings in the area will be destroyed as a consequence of this program. Present surveillance has determined that the initial infected trees are in commercial fruit groves in two rural townships in Adams County, Pennsylvania. Those areas identified as infected cover a total of 218 acres. There is some potential for local soil erosion following removal of infected trees, but this effect is expected to be temporary and planting on those sites is expected to occur shortly after complete removal of infected host materials. Surveillance of the surrounding area has not been completed and it will include inspections of additional commercial groves and suburban plantings. Any program area expansions in response to detections of new infestations would be expected to have similar environmental impacts. Perceived esthetic values of grove and yard trees may be diminished because of the loss of esteemed plantings, but the unsightly appearance of the diseased trees (as would occur with no action) would be undesirable to local residents. The condemnation and seizure of plantings 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 dependency the residents have on their own home produce, but the

present infestation is restricted to commercial groves and containment of the virus would preclude the need to destroy backyard fruit trees.

Elimination of the plum pox virus is achieved through destruction of the infected trees and limbs. Sucker shoots developing from infected root stocks are good sources of plum pox virus and must be destroyed to eliminate disease risk. The elimination of virus is best achieved through burning of the infected plant materials. Although open burning will destroy the viral agent responsible for disease, there is some potential for smoke and atmospheric emissions from this method. All infected plant materials may be burned either on site in rural areas or in infested groves. If infected plant materials are detected in urban or suburban areas, the infected wood may be burned in municipal waste incinerators. The municipal incinerators are efficient at eliminating infected biological materials with minimal emissions (some water vapor and carbon dioxide) to the atmosphere. Municipal incinerators are therefore preferred over open burning from an environmental standpoint. The emissions from the burning of infected plant materials pose negligible environmental impacts.

Although the environmental impacts are expected to be minimal, site-specific issues regarding potential disproportionate impacts were identified for consideration. 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 by identifying and addressing, 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. The populations in the present program area are not low-income or minority and any expansion of the infected area would not be expected to disproportionately affect the low-income or minority populations. Consideration was also given to potential for adverse effects to children as required under Executive Order 13045, "Protection of Children From Environmental Health Risks and Safety Risks." The present infected groves are located where children would not be expected to be present. The workers involved in destruction of infected trees are trained in safety procedures to prevent injury from removal and burning processes and no adverse effects to children are anticipated from agency actions.

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 of the proposed action in Adams County, Pennsylvania, and determined that there would be no effect on endangered and threatened species and their habitats. APHIS will consider any new program location on a site-specific basis and consult as necessary with FWS.

The potential impacts from the proposed action's component control methods (mechanical removal and burning) are all expected to be minimal. It is difficult to quantify precisely the potential cumulative impacts, which are dependent upon the nature of other unquantified local conditions and factors in conjunction with program controls. The rural area has generally good air quality and the limited burning of infected trees should not affect this appreciably. The local ground cover prevents erosion and the temporary erosion from the removal of infected vegetation is not expected to pose adverse cumulative effects. The negligible 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.

IV. Listing of Persons and Agencies Consulted

Environmental Analysis and Documentation
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**Finding of No Significant Impact
for
Plum Pox Cooperative Eradication Program
Environmental Assessment, March 2000**

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 an infestation of plum pox *potyvirus*. 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 action and (2) plum pox eradication. Each of the alternatives was determined to have potential environmental consequences. APHIS selected plum pox 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, and determined no effect on them for the proposed program in Adams County, Pennsylvania. APHIS will consider each program increment on a site-specific basis and consult, 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. I find that the environmental process undertaken for this program is entirely consistent with the principles expressed in Executive Orders 12898 and 13045 and that no disproportionate adverse effects will occur to low-income populations, minority populations, or children from the proposed program action.

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/

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State Plant Health Director
Plant Protection and Quarantine
Animal and Plant Health Inspection Service

5/25/00

Date