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Proposed Rule for Importation of Citrus Fruits from Chile

Environmental Assessment, March 2004

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I. Need for the Proposed Rule

A. Introduction

The Fruits and Vegetable phytosanitary regulations contained in 7 Code of Federal Regulations (CFR) Part 319 prohibit or regulate the importation of fruits and vegetables into the United States. These regulations are designed to prevent the introduction and dissemination of injurious plant pests and diseases that are new or not widely distributed in the country. Generally, the importation of citrus fruit is prohibited except for particular species and varieties grown, packed, and shipped from specific areas as stated in 7 CFR 319.28 and 56. These restrictions are designed to prevent the introduction of a number of citrus pests including fruit flies in the genera *Anastrepha* and *Ceratitis*, citrus canker bacterium (*Xanthomonas axonopodis* pv. *citri*), citrus black spot fungus (*Guignardia citricarpa*), and sweet orange scab fungus (*Elsinoe australis*).

An official request was submitted in accordance with Sanitary and Phytosanitary (SPS) agreements by the National Plant Protection Organization, Servicio Agrícola y Ganadero (SAG) of the Quarantine Service of the Chilean Ministry of Agriculture to export fresh commercial fruit of mandarin orange (*Citrus reticulata*), clementine (*Citrus reticulata* var. “Clementine”), and tangerine (*Citrus reticulata*) into the United States. Previous requests for entry of citrus fruits from Chile have been denied because of the lack of an efficacious treatment for the grape flat mite (*Brevipalpus chilensis*). A pathway initiated plant pest risk assessment was prepared to analyze the pest risk associated with importation of citrus fruits with and without various mitigation measures (USDA, APHIS, 2002a). More recently, there was an outbreak of Mediterranean fruit fly or Medfly (*Ceratitis capitata*) in Chile. Accordingly, an addendum to the pest risk assessment (USDA, APHIS, 2003a) was prepared to analyze and mitigate the associated pest risk. The findings of these documents are summarized and incorporated by reference into this environmental assessment (EA).

In response to the request from Chile and based upon the findings of the pest risk assessment and addendum, the Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ) is proposing to allow importation of citrus fruit from Chile to the United States under specific conditions of entry. The risk assessment identified the grape flat mite and two leaf folder moths (Lepidoptera: tortricidae) as pests capable of following the unmitigated pathway of the importation of citrus fruits from Chile. The cumulative risk rating for the consequences of introduction was determined to be medium for the grape flat mite and high for the leaf folder

moths. The cumulative risk rating for likelihood of introduction was determined to be high for the grape flat mite and medium for the leaf folder moths. The overall pest risk potential was found to be medium for these quarantine pests of concern. The addendum considered potential Medfly risks. The cumulative risk ratings for the consequences of introduction and for the likelihood of introduction were determined to be high. The overall pest risk potential was found to be high for Medfly.

Several mitigations have been proposed to alleviate these pest risks. The leaf folder moths are external feeders that could be readily detected, and a preclearance inspection in compliance with the permit was determined to mitigate risks from leaf folder moths. The grape flat mite is, however, more difficult to detect and requires specific treatments before entry. The proposed treatments are already required for import of some other commodities (e.g., cherimoya) to the United States (7 CFR 319.56–2z). There are two approved treatments of citrus fruits for these pests. The first is a 2-hour fumigation with methyl bromide at a rate of 1.5 to 3 pounds per 1,000 cubic feet, depending upon ambient air temperature. The second is a soapy water and wax treatment. This treatment is designed to eliminate any pests on the surface of the fruit (such as mites and leaf folder moth caterpillars) and prevent any potential reinfestation from hitchhiking insects. The treatment required for potential Medfly host fruit is listed in T107 of the PPQ Treatment Manual. This cold treatment was recently extended by 2 days as a result of a review of efficacy studies (USDA, APHIS, 2002c; 2002d). The present cold treatment schedule for Medfly in citrus is either at 34ⁿ F or below for 15 days or at 35ⁿ F or below for 17 days (USDA, APHIS, 2003b). The pest risk assessment and addendum further evaluated these mitigations and determined that their application would provide adequate safeguards to ensure low pest risk potential. The risk assessment also analyzed other potential mitigations of pest risk that could be effectively applied using a systems approach.

B. Need

In response to the official request from the Chilean Ministry of Agriculture in accordance with SPS agreements to facilitate importation of citrus fruits to the United States, APHIS has reviewed the issues related to this importation and is proposing to amend the phytosanitary regulations (7 CFR 319.56) by allowing this importation under specific conditions. The preparation of an EA was prompted by the anticipated public concern about the potential pest risk from importation of these citrus fruits and the need to address environmental issues related to this pest risk. The issue of potential environmental risks of an outbreak in the United States of Mediterranean fruit fly (*Ceratitidis capitata*), grape flat mite (*Brevipalpus*

chilensis) and the fruit leaf folders (*Proeulia auraria* and *Proeulia chrysopteris*) resulting from imported citrus fruits is of great concern to APHIS. Characterization of the pest risk potential and adequate mitigation measures are critical to excluding these quarantine pests from the United States.

This EA analyzes the potential environmental impacts resulting from approval of this proposed rule and from its change in the current regulations. Imports into the United States of citrus fruits from Chile resulting from this amendment are projected to amount to 250,000 boxes relative to current exports of 1,157,000 boxes sent to markets in Canada, Europe, the Middle East, and the Far East (USDA, APHIS, 2002a). The proposed importations would largely compete with existing imports of citrus fruits due to time of year rather than domestic production. This would provide U.S. consumers with an additional source of fresh citrus fruits in the summer months when supplies are lower and demand for fresh citrus remains constant.

This environmental assessment is designed to satisfy the provisions of the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4327 (NEPA)), its implementing regulations, and Executive Order 12114, “Environmental Effects Abroad of Major Federal Actions.”

II. Alternatives

This environmental assessment analyzes potential environmental consequences of a proposal to amend the regulations governing importation of fruits and vegetables into the United States (7 CFR Part 319). The amendment would allow the importation of citrus fruits grown at approved locations in Chile under certain conditions (7 CFR 319.28 and 56). It would specifically require a combination of cold treatment and either fumigation treatment or adherence to a systems approach to mitigate against the potential pest risks. This EA considers two possible alternatives – regulation under the Proposed Rule (preferred alternative) and the current regulation of citrus fruits from Chile (no action).

A. No Action

The no action alternative is defined as continuation of the current phytosanitary regulation of fresh citrus fruits from Chile. This alternative would continue to prohibit the importation of citrus fruits from Chile. The lack of any changes in conditions for entry of commercial shipments of citrus fruits from Chile maintains overall pest risks at the present low

levels which are acceptable. Selection of this alternative may not, however, satisfy international trade regulations requiring justification of the more rigorous phytosanitary requirements of maintaining current regulations over alternate approaches. In compliance with the International Plant Protection Convention (IPPC) standards for SPS measures, as stipulated by the World Trade Organization, APHIS is obligated to consider less restrictive phytosanitary measures that provide comparable plant protection against pest risks and that are technically justified. The issues of potential environmental impacts associated with the pest risks of each alternative are discussed in chapter 3, Environmental Consequences of the Alternatives.

B. Proposed Rule

The description of this alternative is defined by the proposed rule and would result in enforcement of the amended phytosanitary regulations of citrus fruits from Chile. This rule would allow importation of citrus fruits grown in Chile under specific conditions of entry. The proposed rule involves the implementation of mitigations to maintain phytosanitary security. This approach has been used effectively for establishing conditions of importation for cherimoyas, which have comparable pest risks. All shipments of citrus fruits would be required to have an approved permit from APHIS, a phytosanitary certificate indicating that the fruits were handled in accordance with the phytosanitary requirements, and a statement of pest-free status of the shipment based upon inspection.

The importation requirements for citrus from areas potentially infested with Medfly are listed in the PPQ Treatment Manual Schedule T107-a-1. This requires cold treatments for fruits at either 34^N F or below for 15 days or 35^N F or below for 17 days. In addition, there is an emergency plan in Chile to deal with any outbreaks of Medfly. This includes trapping procedures, fruit sampling, and intensive monitoring for at least two fly life cycles based upon the degree/day formula. Multiple captures within a given area and life cycle will trigger eradication actions there.

There are two proposed options for meeting the importation regulations designed to preclude potential pest risks to the citrus from grape flat mite and leaf folder moth larvae. The pathway pest risk assessment prepared by APHIS (USDA, APHIS, 2002a) evaluated these pest mitigations and determined that their application would provide adequate safeguards to ensure low pest risk potential. One treatment option is a 2-hour fumigation of the citrus fruits with methyl bromide to eliminate any pests in the fruit. The application rate of methyl bromide for fumigation of citrus fruits ranges from 1.5 to 3 pounds per 1,000 cubic feet of fumigation chamber or tarp space, depending upon the ambient air temperature. This methyl bromide

treatment could be completed either within Chile or upon arrival in the United States. Treatment regulations and safeguarding practices for these fumigations are stipulated in the PPQ Treatment Manual (USDA, APHIS, 1998). These regulations are designed to eliminate pest risk and to preclude any potential exposures that could result in adverse human health effects.

The other proposed phytosanitary option involves preclearance of citrus fruit using a systems approach to mitigate any potential pest risks present. This includes orchard control, orchard registration, low prevalence orchard certification, harvest timing, post-harvest mitigation treatments (such as the soapy water and wax treatment), and joint Servicio Agrícola y Ganadero and APHIS phytosanitary inspection. The potential environmental impacts from this approach are negligible and serve to ensure exclusion of potential pest risks. Each of the mitigation measures, of which some efforts are redundant, are designed to exclude the quarantine pests present in Chilean citrus fruits from the United States. Previous implementation of similar mitigations for other commodities with comparable pest risks has provided acceptable protection against those pests.

III. Environmental Consequences

A. No Action

The biological history and pest potential suggest that continuation of the current regulations of citrus fruits (no entry) from Chile would result in no potential for increased pest risk. The required treatments under the proposed rule would provide a means of export to Chilean growers. The efficacy of those combined treatments has been shown to be effective against all quarantine pests of concern in citrus fruits. Although demand for citrus fruits in the United States may be considered to be greater at the time of year when those fruits ripen in Chile, the future demand is not expected to increase sufficiently to create any pressing need to change the current limited exports to the United States if the current regulations are maintained.

The lack of importation of citrus fruits from Chile has maintained low pest risks and negligible environmental effects. As with most commodities, there is always some risk of smuggling, but the frequency is low due to the high punitive costs from noncompliance. The high potential risks from damaging pests associated with noncompliance made it APHIS' policy to provide a strong deterrent. Therefore, APHIS keeps importers and

shippers informed of their import regulations and of the penalties for inadequate compliance. The importer or shipper could be subject to civil penalties, criminal fines, jail sentences, and loss of revenue due to APHIS' rejection of commodities, permit applications, and/or compliance agreements. A major tool for APHIS is the option to refuse entry, require treatment, or require destruction of infested or potentially infested cargo. All of these options are costly to the shipping line and exporter, who must assume all costs for the delays and any treatments. This offers strong incentive for their full compliance with import regulations. Monitoring of the rates of compliance with a phytosanitary rule promulgated in 1998 found that proper compliance with those import requirements was achieved approximately 98 percent of the time. Comparable compliance could be expected for any citrus fruit regulations.

A pathway-initiated pest risk assessment (USDA, APHIS, 2002a) of fresh citrus fruits from Chile into the continental United States was prepared to ascertain the phytosanitary concerns related to fulfilling the request from the Chilean Ministry of Agriculture. An addendum to this assessment was prepared to analyze potential pest risks from an outbreak of Medfly in Chile in 1993 (USDA, APHIS, 2003). These documents assessed the likelihood of introduction of quarantine pests in the absence of risk mitigation measures and cited the efficacy of the measures suggested for quarantine pest risk management provided by Chile and the Fruit Development Foundation. The issue of potential environmental risks of an outbreak in the United States of Medfly or the grape flat mite (resulting from imported fresh citrus fruits) is of great concern to APHIS. Characterization of the pest risk potential and adequate mitigation measures are critical to excluding these quarantine pests from the United States. The pest risk assessment found that the ratings for consequences of introduction were high for all of these species. The cumulative risk rating for the consequences of introduction was determined to be medium for the grape flat mite and high for the leaf folder moths and Medfly. The cumulative risk rating for likelihood of introduction was determined to be high for Medfly and the grape flat mite, but medium for the leaf folder moths. The baseline pest risk potential was determined to be medium for the mite and moth species, but high for Medfly. Current regulations eliminate these pest risks by prohibition.

B. Proposed Rule

The proposed rule is characterized by the use of mitigations to maintain phytosanitary security. Similar approaches have been used effectively for establishing conditions of importation for another commodity (e.g., cherimoya) with comparable pest risks (7 CFR 319.56–2z). The

implementation of these similar mitigations for cherimoya has provided acceptable protection against comparable pest risks.

An important part of the proposed rule involves documentation of the approved permit and of adherence to requirements for entry into the United States. All shipments of citrus fruits would be required to have an approved permit from APHIS and have a phytosanitary certificate indicating that the citrus fruits were produced and handled in accordance with all the phytosanitary requirements and a statement of pest-free status of the shipment based upon inspection. This documentation poses no adverse environmental impacts per se, but the accuracy of the information provided in these documents is critical to exclusion of the potential pest risks.

The pest risk assessment (USDA, APHIS, 2002a) indicated that mitigations were needed to provide adequate phytosanitary protection against introduction and pest risks of fresh citrus fruits from Chile. The proposed mitigations for fresh citrus fruits are designed to provide redundant inspection and safeguarding requirements to ensure that any potential pest risks are not overlooked. Based upon the findings of the pest risk assessment, the proposed phytosanitary regulations should be adequate to exclude the quarantine pest risks of greatest concern to APHIS.

The required soapy water and wax treatments required as part of a systems approach (post-harvest mitigation treatments) are generally covered under a categorical exclusion. The environmental consequences of this type of treatment are negligible. Washing and waxing fruits are considered normal citrus fruit packaging processes in Chile.

The required fumigations under the other importation option involve the use of methyl bromide, a substance classified by the Environmental Protection Agency under the Clean Air Act as a Class I ozone-depleting chemical. This ozone depletion is the primary issue of environmental concern related to fumigations with methyl bromide. The proposed use of methyl bromide in fumigations of citrus fruits is well below any levels that could contribute substantially to ozone depletion. A thorough review of the potential effects of methyl bromide uses in fumigations on ozone depletion was presented in the environmental impact statement regarding the rule for importation of unmanufactured wood articles from Mexico (USDA, APHIS, 2002b), and information from that document is incorporated by reference and summarized in this EA. That document determined that the cumulative impact of methyl bromide from routine commodity treatments (such as citrus fruits from Chile) on ozone depletion is not expected to be consequential. The limited future demand for citrus fruits from Chile under this alternative, therefore, is not expected to change this assessment.

Methyl bromide is one of the oldest and most widely used fumigants for phytosanitary purposes. It is produced naturally by processes in the ocean. The mechanism of intoxication from methyl bromide exposure targets several organs including liver, kidneys, adrenals, lungs, thymus, heart, and brain. Methyl bromide is a substance that deactivates enzymes and disrupts nucleic acid synthesis. The central nervous system is the primary focus of toxic effects of methyl bromide. Regulations for treatments by fumigation require specific safety precautions and proper protective clothing as stipulated in the PPQ Treatment Manual (USDA, APHIS, 1998) to preclude excess exposures and any potential adverse health effects.

Fumigations are conducted in enclosures with a protective zone that is not accessible to wildlife or any stray animals. Entry is restricted to personnel with proper protective clothing that are conducting or supervising the fumigation. The methyl bromide is generally vented from the fumigation chamber or stack to the atmosphere at the completion of a treatment. The venting of gas may affect those organisms immediately below the point of release, but the methyl bromide gas is anticipated to disperse quickly with few organisms in close enough proximity to be affected. Most fumigation facilities are placed on physically disturbed sites that are not preferred habitat for wildlife. Some facilities have gas recapture systems to collect the methyl bromide following a fumigation and very little is released to the atmosphere. These recapture systems prevent exposure to humans and wildlife as well as eliminate most potential for ozone depletion. There are, however, logistical and cost limitations that make it unlikely that this mitigation to the environmental effects of fumigation will be applied universally to treatments with methyl bromide.

The orchard control in the systems approach involves applications of detergent or oil to citrus to lower mite populations. These applications have been shown to have efficacy of 92 to 97.3 percent against grape flat mite. These applications would also affect other surface feeding invertebrates, but the effects of these applications would primarily affect pest species present on the citrus trees. Residual oil or detergent is not expected to pose any substantial hazards to human or the environmental components of the orchards.

Other systems approaches used to mitigate pest risks involve little, if any, environmental consequences. Orchard registration serves to identify the origin of fruit and poses no potential for adverse impacts. It does, however, provide some accountability for adherence to the regulations.

The low prevalence orchard certification involves analysis of random fruit samples for prevalence of grape flat mite from each registered orchard prior to harvest. This is achieved by a “dragging by washing” procedure

that has proven to effectively detect these mites. This procedure involves no adverse environmental impacts and assists in assessing potential pest risks from the pending harvest.

Harvest timing has been shown to substantially reduce pest risk from grape flat mite. The highest mite populations are observed to occur from December through March. Harvesting occurs between April and September to minimize potential pest damage. This also serves to mitigate potential pest risks.

The cold treatment required for citrus are designed to preclude survival of any larval Medfly potentially present in the fruit. A thorough review of the effectiveness of this treatment was conducted recently (USDA, APHIS, 2002c; 2002d). This resulted in the present cold treatment schedule for Medfly host fruit, and this required longer treatment has been shown to meet the efficacy requirements for importation of citrus from potentially infested locations. The additional emergency protocols established by Chile (trapping, fruit sampling, and eradication measures as needed) are designed to ensure that most fruit will be free of Medfly larvae prior to cold treatments. This further reduces potential risk of introduction of viable fly larvae.

Each of these program mitigation measures, of which some efforts are redundant, are designed to mitigate the risk of pest presence in the citrus fruits that are to be exported to the United States. All procedures are subject to inspection and certification processes. To the extent that producers comply with all requirements, the pest risks should be negligible and environmental risks insubstantial.

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 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 proposed rule allows for the importation of fresh citrus fruits to the United States. This action serves to benefit the consumer by providing another source of citrus in seasons when the limited availability of citrus increases the costs. Importation is not expected to affect citrus growers in the United States in that production of citrus fruits from Chile occurs at the time of the year when fruit grown in the United States is no longer in season, and consumption of fresh citrus comes primarily from imported

fruits. Most of the modest impact-generating compliance actions under the proposed rule occur outside of the United States (in Chile) and none have any disproportionate adverse effects on minority or low-income populations.

b. Protection of Children and the Proposed Action

Executive Order 13045, “Protection of Children From Environmental Health Risks and Safety Factors,” requires each Federal agency to address disproportionate environmental health risks or safety risks to children from implementation of proposed policies, programs, activities, and standards. The proposed rule changes do not pose greater risks to children than to other parts of the affected populations. The risks from importation depend primarily upon adherence to the phytosanitary requirements for entry, and this adherence precludes potential for adverse effects to humans.

c. 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 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. Part of the pest risk assessment (USDA, APHIS, 2002a) analyzed the potential for environmental impacts to endangered and threatened species. None of the reported host species for the grape flat mite or the leaf folder moths appear on the list of threatened and endangered plants. Potential hosts may include threatened or endangered plants that are growing within the climatically suitable range of these pests. Examples of such species are the endangered *Prunus geniculata* and the threatened *Ribes echinellum* of Florida. This assessment found that the quarantine pest risks in the absence of adequate mitigations poses impacts that may affect several endangered and threatened species, but those risks are adequately mitigated by the proposed program mitigations. Based upon the ability of the proposed rule to eliminate pest risks from citrus fruit shipments, implementation of the proposed mitigations was determined to pose no effect to any endangered and threatened species or their habitats.

d. Potential Cumulative Impacts

The potential impacts from the proposed rule's systems approach is not expected to pose any substantial cumulative impacts. Although it will

increase the cumulative impacts of methyl bromide use in fumigations, the limited quantities of citrus fruits are not substantial and are within the negligible treatments anticipated under previous cumulative analyses (USDA, APHIS, 2002b). It is difficult to quantify precisely the potential cumulative impacts which are dependent upon growing conditions in Chile. The nature of pest mitigation in the citrus fruit shipments is of principal concern, but the constrained manner of chemical application (consistent with pesticide tolerances set by the U.S. Environmental Protection Agency) and routine program safety procedures suggest that any potential cumulative impacts would be minimal also.

IV. Listing of Agencies, Organizations, and Individuals Consulted

Environmental Services
Policy and Program Development
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
4700 River Road, Unit 149
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Phytosanitary Issues Management
Import and Interstate Services
Plant Protection and Quarantine
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
4700 River Road, Unit 134
Riverdale, MD 20737-1228

V. References

USDA, APHIS—See U.S. Department of Agriculture, Animal and Plant Health Inspection Service

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2002a. Importation of fresh commercial citrus fruit: clementine (*Citrus reticulata* var. ‘Clementine’), mandarin (*Citrus reticulata* Blanco), and tangerine (*Citrus reticulata* Blanco) from Chile into the United States. A pathway-initiated plant pest risk assessment. USDA, APHIS, Plant Protection and Quarantine, Riverdale, MD, and Departamento Proteccion Agricola Servicio Agricola y Ganadero, Santiago, Chile.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2002b. Rule for the importation of unmanufactured wood articles from Mexico, with consideration for cumulative impact of methyl bromide use. Final environmental impact statement—September 2002. Riverdale, MD.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2002c. [Risk mitigation for Mediterranean fruit flies with special emphasis on risk reduction for commercial imports of clementines (several varieties of *Citrus reticulata*) from Spain]. Plant Protection and Quarantine, Center for Plant Health Science and Technology Raleigh, NC.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2002d. Evaluation of cold storage treatment against Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann) (Diptera: tephritidae)[web page]. Last accessed 2003 April 24. Available at: <http://www.aphis.usda.gov/lpa/issues/clementine/10-17-02/ctr5-2-02.pdf>. Plant Protection and Quarantine, Riverdale, MD.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2003. Importation of fresh commercial citrus fruit: clementine (*Citrus reticulata* var. ‘Clementine’); grapefruit (*C. x paradisi* Macfad.); key lime (*C. aurantifolia* [Christm..] Swingle); mandarin orange (*Citrus reticulata* Blanco); navel orange (*C. sinensis* [L.] Osbeck) var. ‘Washington’; tangelo (*Citrus x tangelo* J.W. Ingram & H.E. Moore); unshu orange (*Citrus reticulata* Blanco var. ‘Unshu’ Swingle) from Peru into the United States. Addendum: Emergency outbreak of *Ceratitis capitata* (Medfly) risk assessment, emergency eradication, and Treatment. Plant Protection and Quarantine, Riverdale, MD.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 1998. Plant Protection and Quarantine Treatment Manual, Interim Edition. PPQ 04/98-01. PPQ, Frederick, MD. July 1998.