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Marketing and Regulatory Programs

Animal and Plant Health Inspection Service

Proposed Rule for Movement of Unroasted Coffee into Hawaii and Puerto Rico

Environmental Assessment, September 2005

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I. Introduction and Need for the Proposal

The Foreign Quarantine regulations contained in 7 Code of Federal Regulations (CFR) Part 319 regulate the importation of various commodities 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. The regulations in 7 CFR 319.73 specifically prohibit the importation of green unroasted coffee into Hawaii and Puerto Rico. This prohibition is based upon the potential risks of introducing coffee rust (*Hemileia vastatrix*) and coffee berry borer (*Hypothenemus hampei*) into Hawaii or Puerto Rico.

The State of Hawaii has requested the approval of the Animal and Plant Health Inspection Service (APHIS) for the treatment of imported green unroasted coffee to ensure continued exclusion of pests and diseases to domestically grown coffee and to provide concurrence with Hawaii's State law to allow this importation of treated unroasted coffee. The proposed rule is needed because local production has been shown to be inadequate to meet the current demand, and coffee importation must include efficacious quarantine treatments to protect local coffee plantations from the potential risks of spread of coffee rust and coffee berry borers. Historically, the Commonwealth of Puerto Rico has expressed the need to import green, unroasted coffee following substantial losses to their coffee crop from bad weather. Comparable treatments against potential pest and disease risks were determined to provide an acceptable measure of protection for both Hawaii and Puerto Rico.

In response to the requests and determined need, APHIS has reviewed the issues and will publish a proposed rule in the *Federal Register* to amend the phytosanitary regulations by allowing importation of green unroasted coffee into Hawaii and Puerto Rico under specified conditions. This proposed rule will solicit public comments for at least a 60-day time period. This draft environmental assessment analyzes environmental impacts of the proposed rule and the no action alternative. The public comments submitted regarding this proposed rule and the findings presented in this draft environmental assessment will be reviewed and any substantive issues will be addressed in the final environmental assessment (EA) for the rule.

APHIS' authority for this proposed regulatory program is based upon the Plant Protection Act (7 U.S.C. 7701–7772). In addition, cooperating State and commonwealth agriculture departments have control authorities that permit participation in cooperative pest management programs.

This EA has been designed to satisfy the provisions of the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4327 (NEPA), and its implementing regulations. To the extent that the proposed regulatory change will require treatments of coffee in foreign countries, this EA also fulfills the requirements of Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions." This assessment also considers the potential environmental impacts from the proposed rule as related to compliance with the Sanitary and Phytosaniitary (SPS) regulations established to facilitate trade through the World Trade Organization. In particular, regulations for establishing equivalent mandatory phytosanitary measures, both domestically and internationally, influence selection of acceptable treatment practices and the resulting environmental impacts.

II. Alternatives

Alternatives considered for the program include no Federal action (existing regulations), and enactment of the proposed rule (preferred alternative). Each is discussed briefly below.

A. No Federal Action

Under no Federal action, APHIS would continue to prohibit or otherwise restrict the movement of green unroasted coffee into Hawaii and Puerto Rico as described in 7 CFR Part 319. The State agriculture departments, grower groups, and growers could take whatever further steps they deem necessary to diminish or exclude pest risks from seeds or beans of coffee. The present prohibition of raw or unroasted seeds or beans of coffee, coffee plants and leaves, and empty sacks previously used for unroasted coffee to Hawaii and Puerto Rico ensures that there are no pest risks from coffee berry borer, coffee rust, and Mediterranean fruit fly. The current regulations on transit movement of these coffee products require adequate containment to prevent the escape of any plant pests during transport. The risks from inadequately sealed cargo in transit would continue. The potential changes to these regulations by the proposed rule apply only to the raw or unroasted beans or seeds of coffee and would remove the transit restrictions based upon required treatment for entry of coffee.

Prohibition of unroasted coffee under the no action alternative ensures that the disease and pest risks are eliminated because the commodity containing these organisms is not allowed entry. This limits pest risks based upon the adequacy of the agricultural inspection to regulate coffee cargo at the mainland port or other port of origin to prevent shipments to the islands. However, this alternative does little to alleviate the demand for coffee in

Hawaii and Puerto Rico. Restricting importation of unroasted coffee has not satisfied demand. Hawaii, therefore, has recently made provision for commercial sellers and wholesalers to import unroasted coffee if specific treatments are made. The regulations established by Hawaii for importation of unroasted coffee were determined by APHIS to be sufficiently restrictive to allow importation without increasing pest risks. Based upon this recognition, APHIS acknowledges that the present regulations are unnecessarily restrictive and is considering revision of the coffee regulations to more accurately reflect pest risk and to provide provision for current demand. Other than the pest risk issues, there are no environmental issues of concern related to the no action alternative.

B. Proposed Rule

This alternative allows importation of unroasted coffee into Hawaii and Puerto Rico if the coffee is treated for certain plant pests either on the mainland United States or in the country of export (treatment not permitted in Hawaii or Puerto Rico). The regulations at 7 CFR 319.73 would be amended to permit entry of unroasted coffee following either (1) moist heat treatment at 203 ^{o}F or above and at 90 percent humidity or higher for at least 15 minutes or (2) methyl bromide fumigation according to fumigation treatment schedules for temperatures 40 ^{o}F or higher at application rates of 2.5 or 3 lb methyl bromide per 1000 cu.ft. Coffee receiving the regulatory treatments in the country of export would be required to have a phytosanitary certificate issued by the National Plant Protection Organization (NPPO) of the country of export stating that the treatment of the cargo was conducted in accordance with the regulations. This certification is designed to ensure that the conditions of the regulations are met. This approach eliminates the need for transit requirements for unroasted coffee and associated sample analysis requirements designed to assess pest risk of the cargo in transit.

The effectiveness of this alternative depends primarily upon the degree to which compliance with the phytosanitary treatment requirements can be ensured. Inspection of phytosanitary certificates and spot checks of cargo to ensure accuracy of statements on these documents by agricultural inspectors should be adequate. However, previous inspection of some commodities has revealed occasional lapses in compliance. To the extent that Hawaii already imports some treated, unroasted coffee, the pest risks have been shown to be minimal. The accuracy of certificates and thoroughness of agricultural inspectors must be maintained under this proposed rule to ensure that both coffee rust and coffee berry borer are excluded from Hawaii, and coffee berry borer is excluded from Puerto Rico.

Other than pest risk issues related to the proposed rule, there are some environmental issues related to the proposed treatments that are considered in this EA. Properly conducted moist heat treatments pose no noteworthy environmental concerns, but fumigations with methyl bromide pose several issues that are discussed in more detail in the environmental consequences section of this EA. The primary environmental issue of concern with methyl bromide relates to its potential to damage the atmospheric ozone layer. Proper adherence to APHIS' requirements for conducting fumigations precludes most other potential adverse effects to human health, nontarget species, and environmental quality.

III. Environmental Consequences

A. No Federal Action

The biological history and pest potential suggest that, if allowed to go unchecked, coffee rust and coffee berry borer would cause devastating losses to commercial and private growers in Hawaii and Puerto Rico. Hawaii is currently free of both pests. Puerto Rico does have some coffee rust but has effectively excluded coffee berry borer. The annual cost to the country of Colombia from damage and for control of an infestation with coffee berry borer has been shown to amount to approximately $100 million. The annual worldwide loss is about $500 million. Coffee rust is of even greater concern to growers. Introductions of the coffee rust fungus have been estimated to result in 15 to 20 percent losses in coffee bean production. An infestation of either pest would cause heavy losses in commercial and private production that could greatly reduce the supply of local coffee. The high quality of Kona and Kauai brand coffee products in Hawaii relates partly to the absence of these pests and diseases. The introduction of either of these pests would be expected to result in lower wholesale value of the crop and diminished earnings for growers. In addition, the established presence of these disease and pest agents in Hawaii or Puerto Rico would also be expected to result in lost export markets for some coffee products.

No Federal action would result in a continuation of current regulatory practices that have effectively excluded both coffee rust and coffee berry borer from Hawaii and Puerto Rico. This approach, however, does not make allowance for recent increases in demand for coffee in Hawaii or Puerto Rico, nor does it address APHIS' determination that the present regulations are more restrictive than is necessary to exclude quarantine pests and diseases. The only potential environmental consequences anticipated for the no Federal action alternative relate to the slight possibility that continuing exclusion efforts are unsuccessful.

Minimal adverse impacts to human health, the physical environment, or nontarget species would result under the no Federal action alternative. If the rust pathogen or borer were to get introduced, potential impacts could include impacts to human health as a consequence of commercially used pesticide treatments by growers to minimize their losses. Although the public would not be directly impacted by program control methods (lacking under this alternative), they could be impacted through health impacts from any use of homeowner-directed chemical treatments or commercially-applied chemical treatments if exclusion was not successful. Direct impacts to the physical environment and nontarget species from an introduction would be minimal due to limited host range and would relate primarily to esthetic damage and diminished productivity of the affected plants. Indirect impacts to nontarget species and environmental quality could result if commercial treatments were applied following a failure to exclude the borer or rust fungus. None of the known host plants or their congeneric species are recognized as endangered or threatened species or habitat to those species.

B. Proposed Rule

The proposed rule is characterized by the use of regulatory treatments of coffee designed to eliminate and exclude potential pest and disease risks. The potential environmental risks from inability of the program to exclude the borer or rust fungus were described in the no Federal action alternative and will not be repeated here. Instead, this section will focus on potential environmental impacts from the proposed regulatory treatments and related trade issue requirements. Potential impacts to human health, the physical environment, and nontarget species that are a consequence of those regulatory quarantines are described. Special consideration is given to the potential for cumulative effects on ozone depletion when program use of methyl bromide is combined with other anticipated anthropogenic sources of methyl bromide and other recognized ozone-depleting compounds. Consideration is also given to the influence of trade issues on the phytosanitary regulations being addressed and the environmental consequences related to this.

1. Regulatory Treatments

The proposed rule alternative is characterized by enhancement of phytosanitary regulation of unroasted coffee to allow importation into Hawaii and Puerto Rico to meet current demand. The use of the proposed regulatory treatments to facilitate this importation does eliminate any potential pest risk from the treated coffee, but does pose certain other environmental effects. The intensity and duration of the adverse environmental impacts from a regulatory treatment program are expected to be considerably less than the current program (no action alternative) because

the proposed phytosanitary requirements and treatment documentation are designed to ensure that all unroasted coffee beans are effectively treated prior to importation.

a. Moist Heat Treatments

The proposed moist heat treatments of unroasted coffee require the core treatment temperature to equal or exceed 203 ºC for at least 15 minutes. APHIS has specific requirements for facilities that conduct moist heat treatments. Adherence to these requirements prevents the entry of humans and nontarget species into the treatment chambers during heating. This restricts treatment effects to the coffee and any pests present on or in the coffee packaging. The heating source for the facility may be from electric heating or from combustible fuels. The latter can contribute to local hydrocarbon emissions, but the quantities of hydrocarbon gases emitted from such heat treatment facilities are minimal and would not be anticipated to substantially affect current air quality criteria at any treatment locations. The proposed rule allows these treatments to occur anywhere on the mainland United States or in the country of export, so any emissions from these treatments would be expected to occur at scattered locations where effects on air quality would be indistinguishable from background levels. The primary limitation to this treatment method is the lack of facilities certified to conduct moist heat treatment and the initial costs to set up a new facility. These logistical issues are expected to make the other treatment methods more appealing to most shippers due to the lower treatment costs of fumigation.

b. Methyl Bromide Fumigations

The proposed phytosanitary fumigation treatments of unroasted coffee with methyl bromide would adhere to specific treatment schedules at or above a temperature of 40 ºF. The treatment schedules allow an application rate of 2.5 lb per 1000 cubic feet for 24 hours or an application rate of 3 lb per 1000 cubic feet for 16 hours. APHIS has specific requirements for facilities that conduct fumigation treatments. Adherence to the requirements for proper fumigation by the applicator precludes adverse effects to nontarget species and human health. The restricting of access to the fumigation tarp area (within 10-meter distance) or fumigation chamber area during treatment and aeration to only approved individuals wearing self-contained breathing apparatus is designed to ensure that humans will not receive acute exposures above the threshold limit value. The dispersion of methyl bromide residues following aeration occurs readily in the atmosphere. The aeration vent from the fumigation stack after fumigation releases quantities of methyl bromide to the atmosphere and the only other nontarget organisms that could

potentially be affected are those species directly below this vent. This area has restricted access and this is unlikely to be an issue of concern at most fumigation sites.

The primary environmental concern with methyl bromide fumigations relates to the potential ability of the released gas to contribute to stratospheric ozone depletion. The United Nations Environmental Program (UNEP) Methyl Bromide Technical Options Committee (MBTOC) estimates that between 69 and 79 percent of the methyl bromide used in quarantine and preshipment (QPS) is released into the atmosphere (UNEP, MBTOC, 1998). The ozone layer in the stratosphere limits the amount of ultraviolet (UV) radiation that reaches the Earth's surface. The diminished ozone layer in 1998 was determined by researchers to result in an estimated 8 to 15 percent increase in UV radiation reaching the surface of the Earth (Bell *et al.*, 1996). Their research indicated potential for several adverse effects from this increased level of radiation to humans, wildlife, and the physical environment. A sustained 1 percent decrease in stratospheric ozone is associated with a 2 percent increase in the incidence of non-melanoma skin cancer in the general population, increased potential for immune system suppression and an 0.6 to 0.8 percent increase in eye cataracts. Impacts to plants and animals would include increased disease frequencies in livestock and wild animals, selection for increased levels of UV-tolerant plants and seeds, and diminished fish stocks and other aquatic organisms. Increased UV radiation is also known to increase atmospheric production and destruction of air pollutants with negative effects on human health, building surfaces, and plants (Bell *et al.*, 1996). These potential adverse effects from depletion of the ozone layer are not consistent globally, but generally increase with higher altitudes and greater distance from the equator.

To assess any potential impacts from the proposed rule, one must consider the capacity of methyl bromide to deplete ozone. Presently, the primary source of stratospheric ozone depletion results from the use and release of chlorofluorocarbons. The ozone depletion potential of methyl bromide has been determined to be 0.4 (NOAA *et al.*, 1998). Title VI of the Clean Air Act (42 U.S.C.7401 *et seq.*) requires that all compounds with an ozone depletion level of 0.2 or greater be phased out in the United States by the year 2005 except for quarantine and preshipment (QPS) uses. The U.S. Environmental Protection Agency (EPA) defines these compounds as "Class I" ozone-depleting substances in section 602 of the Clean Air Act. Class I ozone-depleting substances have the potential to cause significant damage to the Earth's protective ozone layer. EPA regulations are designed to be consistent with the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer. The Montreal Protocol lists methyl bromide as a regulated ozone-depleting substance under Article 2H. Methyl bromide use for

quarantine treatment purposes is minor compared with most uses. The Protocol maintains an exemption for quarantine uses of methyl bromide, but the intent of this Protocol and EPA is to phase out all use patterns and promote the development of effective alternative quarantine treatments wherever possible.

Regulations under the proposed rule are also subject to compliance with several trade agreements and international trade administrative bodies. In particular, regulations enforced by the World Trade Organization (WTO) through mediation of trade-related disputes and through efforts to promote international harmonization must be considered. The 1995 signing of the WTO's Agreement on the Application of Sanitary and Phytosanitary (SPS) Measures placed more rigorous requirements on international phytosanitary regulations. Phytosanitary regulations are those rules designed to protect plant health for imported and exported commodities.

The SPS agreement established that all countries should base their phytosanitary measures on relevant standards, guidelines, and recommendations developed under the auspices of the International Plant Protection Convention (IPPC). The IPPC has determined that phytosanitary measures against regulated pests are acceptable if such measures are (1) transparent (clear to all signatory nations), (2) technically justified, and (3) no more restrictive than measures imposed domestically. The pest risks from unroasted coffee are subject to more restrictive regulation under the current rules (no Federal action alternative) due to the absence of coffee berry borer and coffee rust in Hawaii and the absence of coffee berry borer in Puerto Rico. The current prohibition of unroasted coffee is based upon these regulated pest and disease risks.

The recent determination that effective phytosanitary treatments (moist heat treatment and fumigation) are available to eliminate this pest risk made it necessary to review this issue and consider a rule change. The General Agreement on Trade and Tariffs (GATT) is an international agreement designed to reduce and eliminate barriers to trade, investment, and services among its signatory nations. The provisions of GATT are administered by the WTO. Compliance with the third requirement for phytosanitary measures under the IPPC described above is clarified in the sixth paragraph of chapter 5 of the GATT Agreement on the Application of Sanitary and Phytosanitary Measures. This paragraph footnote stipulates that an acceptable phytosanitary measure be "not more trade-restrictive than required unless there is another measure, reasonably available taking into account technical and economic feasibility, that achieves the appropriate level of sanitary or phytosanitary protection and is significantly less restrictive to trade." The proposed rule provides for importation of coffee to

Hawaii and Puerto Rico in a manner that meets the required phytosanitary protection and that is less restrictive to trade than the current regulations (prohibition). The more limited availability and higher cost of moist heat treatments make fumigation with methyl bromide less restrictive to trade than the heat treatments due to logistics of treatment facilities and lower treatment costs. Providing the treatment options that are less restrictive to trade meets these trade provisions. However, fumigation with methyl bromide does pose greater potential for environmental consequences as a result of ozone depletion issues.

The effects of methyl bromide use as a phytosanitary treatment were analyzed thoroughly in an environmental impact statement (USDA, APHIS, 2002). The primary source of stratospheric ozone depletion was determined to be the use and release of chlorofluorocarbons. The annual worldwide contribution to ozone depletion from all uses of methyl bromide based upon the current annual consumption of 63,960 metric tons (MT) was determined to be 1 percent (NOAA *et al.*, 1998). The potential use of methyl bromide under the proposed rule (assuming 100 percent fumigation and no heat treatment of unroasted coffee) based upon the proposed application rate and anticipated demand for unroasted coffee in Hawaii and Puerto Rico could range as high as from 0.0013 to 0.0018 MT. This amounts to less than one ten-millionth of the current usage of methyl bromide and would be expected to contribute less than one ten-millionth of 1 percent to current annual worldwide ozone depletion from all sources. This very low potential use of methyl bromide under the proposed rule and low potential to contribute to adverse effects to the stratospheric ozone layer is, therefore, not anticipated to substantially affect the ozone depletion rate.

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 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. Exclusion efforts and quarantine treatments, as proposed in this program, are targeted at only the potentially infected/infested coffee being considered for import into Hawaii or Puerto Rico. These efforts and treatments occur at port locations where facilities are available for treatment and at locations not close to minority or low-income communities. The fact that the rule will increase supplies of coffee (help to meet demand) and lower prices in Hawaii and Puerto Rico will benefit the low-income residents with more affordable coffee. It is,

therefore, clear that the program as a whole does not pose any disproportionate adverse effects on any particular 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 changes to the regulations do not pose greater risks to children than to other parts of the affected populations. Required safety precautions and standard operating procedures at treatment facilities preclude access of children to any potential risk.

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 (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. The contained nature of the program heat treatments and fumigations preclude any exposure or effects to those species and their habitats. Elimination of the pest risks associated with green unroasted coffee by the regulatory treatments ensures that adherence to the proposed regulations would exclude any pest or disease risks to coffee or other host plants.

d. Potential Cumulative Impacts

The issue of cumulative effect of methyl bromide use was analyzed thoroughly in an environmental impact statement (USDA, APHIS, 2002). The primary source of stratospheric ozone depletion was determined to be the use and release of chlorofluorocarbons. The annual worldwide contribution to ozone depletion from all uses of methyl bromide based upon the current annual 63,960 MT rate of consumption was determined to be 1 percent (NOAA *et al.*, 1998). The potential use of methyl bromide under the proposed rule (assuming 100 percent fumigation) based upon the proposed application rate and anticipated demand for unroasted coffee in Hawaii and Puerto Rico could range as high as from 0.0013 to 0.0018 MT.

This amounts to less than one ten-millionth of the current usage of methyl bromide and would be expected to contribute less than one ten-millionth of 1 percent to current annual worldwide ozone depletion from all sources. The cumulative effects of these type of low-quantity use patterns for methyl bromide were considered in the EIS (USDA, APHIS, 2002) and determined to pose no measurable impact to ozone depletion. Although chlorofluorocarbons and non-QPS uses of methyl bromide are being phased out, the restoration of the ozone layer is delayed by presence of all substances with high ozone depletion potential. However, the very low potential use of methyl bromide (a low contributor to overall ozone depletion relative to the chlorofluorocarbons) under the proposed rule is neither anticipated to affect substantially the ozone depletion rate nor the rate of restoration of the ozone layer. Therefore, the cumulative impacts to the ozone layer from this proposed rule are minimal and not detectable relative to the contribution of other ozone depleting substances.

IV. Listing of Agencies, Organizations, and Individuals Consulted

Environmental Services
Policy and Program Development
Animal and Plant Health Inspection Service
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Commodity Import Analysis and Operations
Plant Protection and Quarantine
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