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Mexican Fruit Fly Cooperative Eradication Program

Los Angeles County, California

Environmental Assessment, December 2008

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I. Need for the Proposal

The Mexican fruit fly, *Anastrepha ludens* (Loew), is native to central Mexico and is a major pest of agriculture throughout many parts of the world. Commercial and home grown produce that is attacked by the pest is unfit to eat because the larvae tunnel through the fleshy part of the fruit, damaging the fruit and subjecting it to decay from bacteria and fungi. Because of its wide host range (over 40 species of fruits) and its potential for damage, a permanent infestation of Mexican fruit fly would be disastrous to agricultural production in the United States. In the past, eradication programs have been implemented successfully to prevent the pest from becoming permanently established on the U.S. mainland.

On December 3, 2008 and December 8, 2008, two Mexican fruit flies (one mated female and one mature male) were detected on properties on North Lemon Avenue and South Lemon Avenue in Azusa, California. The finds indicate the presence of a Mexican fruit fly infestation which represents a major threat to the agriculture and environment of California and other U.S. mainland States. The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) and the California Department of Food and Agriculture (CDFA) are proposing a cooperative program to eradicate the Mexican fruit fly infestation and eliminate that threat.

APHIS' authority for cooperation in the program is based upon the Plant Protection Act (Title 4 of the Agricultural Risk Protection Act of 2000), which authorizes the Secretary of Agriculture to carry out operations to eradicate insect pests and to use emergency measures to prevent the dissemination of plant pests new to, or not widely distributed throughout, the United States.

APHIS has cooperated with State departments of agriculture on a number of Mexican fruit fly programs in the past. Examples of such programs include the "Mexican Fruit Fly Cooperative Eradication Program, Laredo, Texas" (USDA, APHIS, 2007a), the "Mexican Fruit Fly Cooperative Management Program, Lower Rio Grande Valley, Texas" (USDA, APHIS, 2008), and the "Mexican Fruit Fly Cooperative Eradication Program, San Diego County, California" (USDA, APHIS, 2007b).

II. Alternatives

Alternatives considered for this proposed program include (1) no action, (2) quarantine and commodity certification, and (3) eradication. APHIS' preferred alternative for the program is eradication using an integrated pest management (IPM) approach. Component techniques include the use of

chemical pesticides to facilitate the timely elimination of the current Mexican fruit fly infestation.

A. No Action

The no action alternative would involve no Federal effort to eradicate the Mexican fruit fly or restrict its expansion from the infested area. In the absence of a Federal effort, quarantine and control would be left to State government, grower groups, and individuals. The infestation's expansion would be influenced by any controls exerted over it, by the proximity of host plants, and by climatic conditions. No action could be the only choice with respect to some sensitive sites; in such cases, lack of action could result in a continuing and expanding infestation. An expansion of the infestation would likely result in substantial economic losses to growers in the United States and losses of U.S. export markets.

B. Quarantine and Commodity Certification

This alternative combines a Federal quarantine with commodity treatment and certification. Regulated commodities harvested within the quarantine area would be restricted to movement within that area, unless treated with prescribed treatments and certified for movement to outside the area. For a large infestation, intensive quarantine enforcement activities could be necessary including safeguarding of local fruit stands, mandatory baggage inspection at airports, and judicious use of road patrols and roadblocks. The quarantine actions of this alternative would result in a reduction of human-mediated movement of Mexican fruit fly in host plant materials outside the quarantined area; however, the infestation could remain established within the quarantine boundaries. Any Mexican fruit fly eradication efforts would be managed by, and wholly under the control of, CDFR.

Interstate movement of regulated commodities would require issuance of a certificate, or limited permit, contingent upon commodity treatment or the grower or shipper complying with specific conditions designed to minimize pest risk and prevent the spread of the Mexican fruit fly. Control methods that may be used in this alternative include: (1) regulatory chemicals, (2) cold treatment, (3) vapor heat treatment, and (4) irradiation treatment. Regulatory chemical treatments include fumigation with methyl bromide, soil treatment with diazinon, and topical bait spray with a mixture of spinosad or malathion and a protein hydrolysate bait. (Refer to the environmental impact statement (EIS) (USDA, APHIS, 2001) for more detailed information about the chemicals and their uses.) Cold treatment, vapor heat treatment, or irradiation treatment of certain produce, as a requirement for certification and shipping, must be done in facilities that are inspected and approved by APHIS.

C. Eradication (Preferred Alternative)

APHIS' preferred alternative for the Mexican fruit fly program is eradication using an IPM approach. This alternative combines quarantine and commodity certification with eradication treatments. Eradication efforts may include any or all of the following: chemical control, sterile insect technique, physical control, cultural control, and regulatory control.

The eradication program would include ground applications of either malathion or spinosad bait. Where Mexican fruit fly larvae are found, eradication treatments may also employ foliar sprays and soil drenches. Foliar applications, which are applied up to a 200-meter radius around an infested property, may consist of spinosad or malathion protein bait formulations which are applied with hydraulic spray or hand-spray equipment. The applications will be repeated at 6- to 14-day intervals. Soil drenches with a diazinon formulation may be applied to the drip line of hosts with fruit known or suspected to be infested with Mexican fruit fly eggs or larvae. (For more detailed information on the alternatives for Mexican fruit fly control and the component methods, refer to the earlier fruit fly risk assessments (USDA, APHIS, 2003, 1999a, 1999b, 1998a, and 1998b)).

III. Potential Environmental Consequences

This environmental assessment (EA) analyzes the potential environmental consequences of alternatives which have been considered for Mexican fruit fly control, and considers, from a site-specific perspective, environmental issues that are relevant to this particular program. The preferred alternative, eradication, would involve an IPM approach that uses any or a combination of the following: (1) no action, (2) quarantine, (3) regulatory chemical application (fumigation, soil treatment, and bait spray application), (4) eradication chemical applications (protein bait spray and soil treatment), (5) cold treatment, (6) vapor heat treatment, and (7) irradiation treatment.

Alternatives for Mexican fruit fly control have been discussed and analyzed comprehensively within the "Fruit Fly Cooperative Control Program, Final Environmental Impact Statement—2001" (EIS), which is incorporated by reference and summarized within this EA. The control measures being considered for this program have been analyzed comprehensively within the fruit fly chemical risk assessments (USDA, APHIS, 1998a, and 1998b) and risk assessments for spinosad (USDA, APHIS, 1999a, 1999b, and 2003). Those documents are also incorporated by reference and summarized within this EA.

This area's site-specific characteristics were considered with respect to the program's potential to effect (1) human health, (2) nontarget species

(including threatened and endangered species), and (3) environmental quality. In addition, potentially sensitive areas have been identified, considered, and accommodated through special selection of control methods and use of specific mitigation measures.

The eradication program's location is on the north side of the Los Angeles Basin just south of the Angeles National Forest and southeast of the San Gabriel River. Based on established protocols, an eradication zone of approximately 28.6-square miles has been established surrounding the Mexican fruit fly detections. The zone is in a residential area which includes residential plantings of host material. Some schools are found within the area but are not known to provide habitat for any known listed threatened or endangered species.

A. Human Health

The principal concerns for human health are related to the program use of chemical pesticides: malathion bait, spinosad bait, diazinon (a soil drench), and methyl bromide (a fumigant). Three major factors influence the human health risk associated with pesticide use: fate of the pesticides in the environment, their toxicity to humans, and their exposure to humans. Each of the program pesticides is known to be toxic to humans. Exposure to program pesticides can vary, depending upon the pesticide and the use pattern. Potential exposure is low for all applications except malathion and spinosad bait. The limited program use of malathion and spinosad bait is for regulatory treatments only, and these applications are mainly applied to commercial groves where exposure to the general public is unlikely. The analyses and data of the EIS and human health risk assessments indicate that exposures to pesticides from normal program operations are not likely to result in substantial adverse human health effects. (Refer to the EIS (USDA, APHIS, 2001) and the human health risk assessments (USDA, APHIS, 1999a, and 1998a) for more detailed information relative to human health risk.)

In general, a well-coordinated eradication program using IPM technologies would result in the least usage of chemical pesticides overall, and the least potential to adversely affect human health. The no action alternative or quarantine and commodity certification alternative would not eliminate Mexican fruit fly as readily or as effectively as the eradication alternative. Over a protracted time period, there would likely be broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact.

Some executive orders, such as Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks, and

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, as well as departmental and/or agency directives call for special environmental reviews in certain circumstances. No circumstance that would trigger the need for special environmental reviews is involved in implementing the preferred alternative considered in this document.

B. Nontarget Species

The principal concerns for nontarget species, including threatened and endangered species, also involve the use of program pesticides. Paralleling human health risk, the risk to nontarget species is related to the pesticides' fate in the environment, their toxicity to the nontarget species, and their exposure to nontarget species. All of the pesticides are highly toxic to invertebrates, although the likelihood of exposure (and thus, impact) varies a great deal from pesticide to pesticide and with the use pattern. In general, a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall, with minimal adverse impact to nontarget species. The no action alternative and the quarantine and commodity certification alternative would be expected to result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact. (Refer to the EIS (USDA, APHIS, 2001) and its nontarget risk assessments (USDA, APHIS, 2003, 1999b, and 1998b) for more information on risks to all classes of nontarget species.)

The area was considered with respect to special characteristics that could influence the effects of program operations. Section 7 of the Endangered Species Act and its implementing regulations govern consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service to ensure that 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 researched the existence of threatened and endangered species within the designated program area, and has determined that no such species and/or their critical habitats will be affected by program operations. Should the program area expand in the future, any potentially sensitive areas will be identified, considered, and accommodated through special selection of control methods and use of specific protective measures.

C. Environmental Quality

The principal environmental quality concerns are for the preservation of clean air, pure water, and a pollution-free environment. Program pesticides remain the major concern for the public and the program, in relation to preserving environmental quality. Although program pesticide use is

limited, especially in comparison to other agricultural pesticide use, the proposed action would result in a controlled release of chemicals into the environment. The fate of those chemicals varies with respect to the environmental component (air, water, or other substrate) and its characteristics (temperature, pH, dilution, etc.). The half-life of malathion in soil or on foliage ranges from 1 to 6 days; in water, from 6 to 18 days. The half-life of spinosad ranges from 8 to 15 days; in water, residues persist for only a few hours. The half-life of diazinon in soil ranges from 1.5 to 10 weeks; in water, at neutral pH, from 8 to 9 days. Methyl bromide's half-life is 3 to 7 days, however, the small quantities used disperse when fumigation chambers are vented. (Refer to the EIS (USDA, APHIS, 2001) for a more detailed consideration of the pesticides' environmental fates.)

The alternatives were compared with respect to their potential to affect environmental quality. Risk to environmental quality is considered minimal. Again, a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall, with minimal adverse impact on environmental quality. The no action alternative and the quarantine and commodity certification alternative would result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact.

The proposed program area was examined to identify characteristics that would tend to influence the effects of program operations. Potentially sensitive areas were identified, considered, and accommodated, as necessary, through special selection of control methods and use of specific mitigation measures. Allowances were made for the special site-specific characteristics that would require a departure from the standard operating procedures. The approaches used to mitigate for adverse impacts to bodies of water are described in the EIS (USDA, APHIS, 2001).

Finally the program was considered with respect to its potential to cause cumulative impacts. No significant cumulative impacts are anticipated as a consequence of the program or its use of component treatment measures.

IV. Agencies, Organizations, and Individuals Consulted

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine
Invasive Species and Pest Management
4700 River Road, Unit 134
Riverdale, Maryland 20737-1236

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Policy and Program Development
Environmental Services
4700 River Road, Unit 149
Riverdale, Maryland 20737-1238

V. References Cited

USDA—See United States Department of Agriculture

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 2008. Mexican fruit fly cooperative management program, Lower Rio Grande Valley, Texas, environmental assessment—May 2008. USDA, APHIS, Riverdale, MD.

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U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 1998a. Human health risk assessment for fruit fly cooperative control programs. USDA, APHIS, Riverdale, MD.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, 1998b. Nontarget species risk assessment for fruit fly cooperative control programs. USDA, APHIS, Riverdale, MD.

**Finding of No Significant Impact
For
Mexican Fruit Fly Cooperative Eradication Program
Los Angeles County, California
Environmental Assessment
December 2008**

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) has prepared an environmental assessment (EA) which analyzes alternatives for control of the Mexican fruit fly, *Anastrepha ludens* (Loew), an exotic agricultural pest that has been found in an area of Los Angeles County, California. The EA, incorporated by reference in this document, is available from:

USDA, APHIS, PPQ
State Plant Health Director
650 Capital Mall, Suite 6-400
Sacramento, CA 95814


or

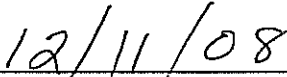
USDA, APHIS, PPQ
Fruit Fly Exclusion and Detection Program
4700 River Road, Unit 137
Riverdale, MD 20737-1234

The EA for this program analyzed alternatives of (1) no action, (2) quarantine and commodity certification, and (3) eradication. Each of those alternatives was determined to have potential environmental consequences. APHIS selected eradication using an integrated pest management approach for the proposed program because of its capability to achieve eradication in a way that also reduces the magnitude of those potential environmental consequences.

APHIS has determined that this program will have no effects on threatened and endangered species, based upon its review of proposed program operations and upon review of information provided by 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 quantitative and qualitative risk assessments of the proposed pesticides, and on my review of the program's operational characteristics. 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, and the protection of children, as expressed in Executive Order 13045. Lastly, 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.


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Animal and Plant Health Inspection Service
Sacramento, California


Date