Environmental Protection Agency

40 CFR Part 180

[EPA-HQ-OPP-2017-0376; FRL-9978-20]

Acequinocyl; Pesticide Tolerances

Agency: Environmental Protection Agency (EPA).

Action: Final rule.

Summary: This regulation establishes tolerances for residues of acequinocyl in or on guava and the tropical and subtropical, small fruit, inedible peel, subgroup 24A. Inter-regional Research Project Number 4 (IR-4) requested these tolerances under the Federal Food, Drug, and Cosmetic Act (FFDCA).

Dates: This regulation is effective [insert date of publication in the Federal Register].

Objections and requests for hearings must be received on or before [insert date 60 days after date of publication in the Federal Register], and must be filed in accordance with the instructions provided in 40 CFR part 178 (see also Unit I.C. of the Supplementary Information).

Addresses: The docket for this action, identified by docket identification (ID) number EPA-HQ-OPP-2017-0376, is available at http://www.regulations.gov or at the Office of Pesticide
Programs Regulatory Public Docket (OPP Docket) in the Environmental Protection Agency
Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave., NW., Washington, DC 20460-0001. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the OPP Docket is (703) 305-5805. Please review the visitor instructions and additional information about the docket available at http://www.epa.gov/dockets.

FOR FURTHER INFORMATION CONTACT: Michael Goodis, Registration Division (7505P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; main telephone number: (703) 305-7090; email address: RDFRNotices@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

• Crop production (NAICS code 111).

• Animal production (NAICS code 112).
• Food manufacturing (NAICS code 311).

• Pesticide manufacturing (NAICS code 32532).

B. How Can I Get Electronic Access to Other Related Information?


C. How Can I File an Objection or Hearing Request?

Under FFDCA section 408(g), 21 U.S.C. 346a, any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. You must file your objection or request a hearing on this regulation in accordance with the instructions provided in 40 CFR part 178. To ensure proper receipt by EPA, you must identify docket ID number EPA-HQ-OPP-2017-0376 in the subject line on the first page of your submission. All objections and requests for a hearing must be in writing, and must be received by the Hearing Clerk on or before [insert date 60 days after date of publication in the Federal Register]. Addresses for mail and hand delivery of objections and hearing requests are provided in 40 CFR 178.25(b).

In addition to filing an objection or hearing request with the Hearing Clerk as described in 40 CFR part 178, please submit a copy of the filing (excluding any Confidential Business Information (CBI)) for inclusion in the public docket. Information not marked confidential pursuant to 40 CFR part 2 may be disclosed publicly by EPA without prior notice. Submit the non-CBI copy of your objection or hearing request, identified by docket ID number EPA-HQ-OPP-2017-0376, by one of the following methods:
II. Summary of Petitioned-For Tolerance

In the Federal Register of October 23, 2017 (82 FR 49020) (FRL-9967-37), EPA issued a document pursuant to FFDCA section 408(d)(3), 21 U.S.C. 346a(d)(3), announcing the filing of a pesticide petition (PP 7E8579) by IR–4, 500 College Road East, Suite 201 W, Princeton, NJ 08540. The petition requested that 40 CFR part 180 be amended by establishing tolerances for residues of the insecticide acequinocyl, 2-(acetyloxy)-3-dodecyl-1,4-naphthalenedione, and its metabolite, 2-dodecyl-3-hydroxy-1,4-naphthoquinone (acequinocyl-OH), expressed as acequinocyl equivalents in or on guava at 0.9 ppm and the tropical and subtropical, small fruit, inedible peel, subgroup 24A at 2 ppm. That document referenced a summary of the petition prepared by Arysta LifeScience, the registrant, which is available in the docket, http://www.regulations.gov. A comment expressing concern about the effects of wind turbines on bats was received on the notice of filing, but it is not relevant to this action.
EPA is establishing the requested tolerances with additional significant figures in conformity with Agency policy.

III. Aggregate Risk Assessment and Determination of Safety

Section 408(b)(2)(A)(i) of FFDCA allows EPA to establish a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance is “safe.” Section 408(b)(2)(A)(ii) of FFDCA defines “safe” to mean that “there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.” This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) of FFDCA requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to “ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue....”

Consistent with FFDCA section 408(b)(2)(D), and the factors specified in FFDCA section 408(b)(2)(D), EPA has reviewed the available scientific data and other relevant information in support of this action. EPA has sufficient data to assess the hazards of and to make a determination on aggregate exposure for acequinocyl including exposure resulting from the tolerances established by this action. EPA’s assessment of exposures and risks associated with acequinocyl follows.

A. Toxicological Profile

EPA has evaluated the available toxicity data and considered its validity, completeness, and reliability as well as the relationship of the results of the studies to human risk. EPA has also
considered available information concerning the variability of the sensitivities of major identifiable subgroups of consumers, including infants and children.

The target organs of acequinocyl are the liver (hepatocyte vacuolization, brown pigmented cells and perivascular inflammatory cells in liver) and hematopoietic system (hemorrhage, increased clotting factor times and increased platelet counts). There was no evidence of neurotoxicity or immunotoxicity. There was no evidence of carcinogenic potential in either the rat or mouse and there was no concern for genotoxicity or mutagenicity.

In rats and rabbits, there was no evidence of increased quantitative or qualitative fetal susceptibility. For both species, maternal effects (clinical signs and gross necropsy findings) were observed at similar or lower doses than those producing fetal effects. In rabbits, there were increased incidences of late resorptions at the highest dose tested. Since it is unknown whether resorptions occurred from toxicity to maternal animals or the fetuses, the resorptions are considered maternal and developmental adverse effects. In the rat two-generation reproduction toxicity study, there was increased quantitative offspring susceptibility. Offspring effects consisted of hemorrhagic effects, swollen body parts (head and extremities), protruding eyes, clinical signs (bloody encrusted nose, cold to touch, red urine, blue colored eyes and extremities, paleness), delays in pupil development, and increased mortality occurring mainly after weaning. The increased incidences of hemorrhagic effects post-weaning indicate toxicity to the hematopoietic system. While there were no parental effects up to the highest dose tested, hematological effects (changes in partial and activated partial thromboplastin times) were observed in adult animals in other studies at the same dose causing the offspring effects, but were not measured in the two-generation reproduction toxicity study. As a result, using a weight-of-evidence approach that considers the findings from the two-generation reproduction
toxicity study in context of the full toxicological database, parental toxicity would be anticipated at the same doses as offspring effects if additional evaluations had been performed, particularly hematological measurements. There were no effects on reproductive parameters.

Specific information on the studies received and the nature of the adverse effects caused by acequinocyl as well as the no-observed-adverse-effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL) from the toxicity studies can be found at http://www.regulations.gov in the document titled “Acequinocyl. Human Health Risk Assessment to Support the Petition for Tolerance for Residues in/on Guava and Tropical and Subtropical, Small Fruit, Inedible Peel, Subgroup 24A” on page numbers 29-31 in docket ID number EPA-HQ-OPP-2017-0376.

B. Toxicological Points of Departure/Levels of Concern

Once a pesticide’s toxicological profile is determined, EPA identifies toxicological points of departure (POD) and levels of concern to use in evaluating the risk posed by human exposure to the pesticide. For hazards that have a threshold below which there is no appreciable risk, the toxicological POD is used as the basis for derivation of reference values for risk assessment. PODs are developed based on a careful analysis of the doses in each toxicological study to determine the dose at which no adverse effects are observed (the NOAEL) and the lowest dose at which adverse effects of concern are identified (the LOAEL). Uncertainty/safety factors are used in conjunction with the POD to calculate a safe exposure level - generally referred to as a population-adjusted dose (PAD) or a reference dose (RfD) - and a safe margin of exposure (MOE). For non-threshold risks, the Agency assumes that any amount of exposure will lead to some degree of risk. Thus, the Agency estimates risk in terms of the probability of an occurrence of the adverse effect expected in a lifetime. For more information on the general

A summary of the toxicological endpoints for acequinocyl used for human risk assessment is discussed in Unit III.B. of the final rule published in the Federal Register of January 18, 2017 (82 FR 5409) (FRL-9956-85).

C. Exposure Assessment

1. Dietary exposure from food and feed uses. In evaluating dietary exposure to acequinocyl, EPA considered exposure under the petitioned-for tolerances as well as all existing acequinocyl tolerances in 40 CFR 180.599. EPA assessed dietary exposures from acequinocyl in food as follows:

   i. Acute exposure. Quantitative acute dietary exposure and risk assessments are performed for a food-use pesticide, if a toxicological study has indicated the possibility of an effect of concern occurring as a result of a 1-day or single exposure.

   Such effects were identified for acequinocyl. In estimating acute dietary exposure, EPA used food consumption information from the United States Department of Agriculture (USDA) 2003-2008 National Health and Nutrition Examination Survey, What We Eat in America, (NHANES/WWEIA). As to residue levels in food, EPA assumed tolerance-level residues and 100 percent crop treated (PCT) for all proposed and registered uses.

   ii. Chronic exposure. In conducting the chronic dietary exposure assessment EPA used the food consumption data from the USDA 2003-2008 NHANES/WWEIA. As to residue levels in food, EPA assumed tolerance-level residues and 100 PCT for all proposed and registered uses.
iii. Cancer. Based on the data summarized in Unit III.A., EPA has concluded that acequinocyl does not pose a cancer risk to humans. Therefore, a dietary exposure assessment for the purpose of assessing cancer risk is unnecessary.

iv. Anticipated residue and PCT information. EPA did not use anticipated residue or PCT information in the dietary assessment for acequinocyl. Tolerance-level residues and 100 PCT were assumed for all food commodities.

2. Dietary exposure from drinking water. The Agency used screening-level water exposure models in the dietary exposure analysis and risk assessment for acequinocyl in drinking water. These simulation models take into account data on the physical, chemical, and fate/transport characteristics of acequinocyl. Further information regarding EPA drinking water models used in pesticide exposure assessment can be found at http://www2.epa.gov/pesticide-science-and-assessing-pesticide-risks/about-water-exposure-models-used-pesticide.

Based on the Pesticide Root Zone Model/Exposure Analysis Modeling System (PRZM/EXAMS), Provisional Cranberry Model, and Screening Concentration in Ground Water (SCI-GROW) Model, the estimated drinking water concentrations (EDWCs) of acequinocyl for acute exposures are estimated to be 6.69 parts per billion (ppb) for surface water and $3.6 \times 10^{-3}$ ppb for ground water, and for chronic exposures are estimated to be 6.69 ppb for surface water and $\leq 3.6 \times 10^{-3}$ ppb for ground water.

Modeled estimates of drinking water concentrations were directly entered into the dietary exposure model. For both the acute and chronic dietary risk assessments, the water concentration value of 6.69 ppb was used to assess the contribution to drinking water.
3. *From non-dietary exposure.* The term “residential exposure” is used in this document to refer to non-occupational, non-dietary exposure (e.g., for lawn and garden pest control, indoor pest control, termiticides, and flea and tick control on pets).

Acequinocyl is currently registered for the following uses that could result in residential exposures: use on ornamentals for landscapes, gardens, and trees. EPA assessed residential exposure using the following assumptions: Residential handler exposures are not expected since all registered acequinocyl product labels with residential use sites (e.g., ornamentals for landscapes, gardens, and trees) require that handlers wear specific clothing (e.g., long-sleeve shirt/long pants) and/or use personal protective equipment (PPE). As a result, a residential handler assessment was not conducted.

Only short-term post-application dermal exposure is anticipated for the registered residential uses. The quantitative exposure/risk assessment for residential post-application exposures assessed dermal exposures to adults for activities associated with gardening, dermal exposures to children (6 to <11 years old) for activities associated with playing in and around gardens and gardening, dermal exposures to adults associated with handling trees and retail plants, and dermal exposures to children (6 to <11 years old) for activities associated with playing in and around trees and retail plants.


4. *Cumulative effects from substances with a common mechanism of toxicity.* Section 408(b)(2)(D)(v) of FFDCA requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider “available information” concerning the cumulative
effects of a particular pesticide's residues and “other substances that have a common mechanism of toxicity.”

EPA has not found acequinocyl to share a common mechanism of toxicity with any other substances, and acequinocyl does not appear to produce a toxic metabolite produced by other substances. For the purposes of this tolerance action, therefore, EPA has assumed that acequinocyl does not have a common mechanism of toxicity with other substances. For information regarding EPA’s efforts to determine which chemicals have a common mechanism of toxicity and to evaluate the cumulative effects of such chemicals, see EPA’s website at http://www2.epa.gov/pesticide-science-and-assessing-pesticide-risks/cumulative-assessment-risk-pesticides.

D. Safety Factor for Infants and Children

1. In general. Section 408(b)(2)(C) of FFDCA provides that EPA shall apply an additional tenfold (10X) margin of safety for infants and children in the case of threshold effects to account for prenatal and postnatal toxicity and the completeness of the database on toxicity and exposure unless EPA determines based on reliable data that a different margin of safety will be safe for infants and children. This additional margin of safety is commonly referred to as the Food Quality Protection Act Safety Factor (FQPA SF). In applying this provision, EPA either retains the default value of 10X, or uses a different additional safety factor when reliable data available to EPA support the choice of a different factor.

2. Prenatal and postnatal sensitivity. There is no evidence of an increased quantitative or qualitative fetal susceptibility in rats or rabbits. In isolation, there was evidence of increased quantitative offspring susceptibility in the two-generation reproductive study; however, the concern is low since:
i. The effects in pups are well characterized with a clear NOAEL and

ii. The effects are protected for by the selected endpoints.

Therefore, there are no residual uncertainties for pre-/post-natal toxicity. Additionally, hematological parameters were not measured for the parental animals in the two-generation reproductive study; however, hematological effects were observed in adult animals in other oral rat studies at the same doses eliciting offspring effects. Therefore, considering the offspring findings in the two-generation reproductive toxicity study in context with the full toxicological database, there is no concern for offspring susceptibility since parental toxicity would be anticipated at the same dose as offspring effects.

3. Conclusion. EPA has determined that reliable data show the safety of infants and children would be adequately protected if the FQPA SF were reduced to 1x. That decision is based on the following findings:

   i. The toxicity database for acequinocyl is complete.

   ii. There is no indication that acequinocyl is a neurotoxic chemical and there is no need for a developmental neurotoxicity study or additional UF to account for neurotoxicity.

   iii. There is no evidence of an increased quantitative or qualitative fetal susceptibility in rats or rabbits, but in isolation there was evidence of increased quantitative offspring susceptibility in the two-generation reproductive study. However, the concern is low for the reasons outlined above in section III.D.2.

   iv. There are no residual uncertainties identified in the exposure databases. The dietary food exposure assessments were performed based on 100 PCT and tolerance-level residues. EPA made conservative (protective) assumptions in the ground and surface water modeling.
used to assess exposure to acequinocyl in drinking water. EPA used similarly conservative assumptions to assess post-application exposure of children. These assessments will not underestimate the exposure and risks posed by acequinocyl.

E. Aggregate Risks and Determination of Safety

EPA determines whether acute and chronic dietary pesticide exposures are safe by comparing aggregate exposure estimates to the acute PAD (aPAD) and chronic PAD (cPAD). For linear cancer risks, EPA calculates the lifetime probability of acquiring cancer given the estimated aggregate exposure. Short-, intermediate-, and chronic-term risks are evaluated by comparing the estimated aggregate food, water, and residential exposure to the appropriate PODs to ensure that an adequate MOE exists.

1. **Acute risk.** Using the exposure assumptions discussed in this unit for acute exposure, the acute dietary exposure from food and water to acequinocyl will occupy 71% of the aPAD for children 1-2 years old, the population group receiving the greatest exposure.

2. **Chronic risk.** Using the exposure assumptions described in this unit for chronic exposure, EPA has concluded that chronic exposure to acequinocyl from food and water will utilize 71% of the cPAD for children 1-2 years old, the population group receiving the greatest exposure. Based on the explanation in Unit III.C.3., regarding residential use patterns, chronic residential exposure to residues of acequinocyl is not expected.

3. **Short-term risk.** Short-term aggregate exposure takes into account short-term residential exposure plus chronic exposure to food and water (considered to be a background exposure level). Acequinocyl is currently registered for uses that could result in short-term
residential exposure, and the Agency has determined that it is appropriate to aggregate chronic exposure through food and water with short-term residential exposures to acequinocyl.

Using the exposure assumptions described in this unit for short-term exposures, EPA has concluded the combined short-term food, water, and residential exposures result in aggregate MOEs of 1140 for adults and 910 for children 6-11 years old. Because EPA’s level of concern for acequinocyl is a MOE of 100 or below, these MOEs are not of concern.

4. Intermediate-term risk. Intermediate-term aggregate exposure takes into account intermediate-term residential exposure plus chronic exposure to food and water (considered to be a background exposure level).

An intermediate-term adverse effect was identified; however, acequinocyl is not registered for any use patterns that would result in intermediate-term residential exposure. Intermediate-term risk is assessed based on intermediate-term residential exposure plus chronic dietary exposure. Because there is no intermediate-term residential exposure and chronic dietary exposure has already been assessed under the appropriately protective cPAD (which is at least as protective as the POD used to assess intermediate-term risk), no further assessment of intermediate-term risk is necessary, and EPA relies on the chronic dietary risk assessment for evaluating intermediate-term risk for acequinocyl.

5. Aggregate cancer risk for U.S. population. Based on the lack of evidence of carcinogenicity in two adequate rodent carcinogenicity studies, acequinocyl is not expected to pose a cancer risk to humans.
6. **Determination of safety.** Based on these risk assessments, EPA concludes that there is a reasonable certainty that no harm will result to the general population, or to infants and children from aggregate exposure to acequinocyl residues.

**IV. Other Considerations**

**A. Analytical Enforcement Methodology**

Adequate enforcement methodology (two high-performance liquid chromatography methods with tandem mass-spectroscopy detection (HPLC/MS/MS) for determining residues in/on fruit and nut commodities (Morse Methods Meth-133, Revision #4 and Meth-135, Revision #3)) is available to enforce the tolerance expression.

The method may be requested from: Chief, Analytical Chemistry Branch, Environmental Science Center, 701 Mapes Rd., Ft. Meade, MD 20755-5350; telephone number: (410) 305-2905; email address: residuemethods@epa.gov.

**B. International Residue Limits**

In making its tolerance decisions, EPA seeks to harmonize U.S. tolerances with international standards whenever possible, consistent with U.S. food safety standards and agricultural practices. EPA considers the international maximum residue limits (MRLs) established by the Codex Alimentarius Commission (Codex), as required by FFDCA section 408(b)(4). The Codex Alimentarius is a joint United Nations Food and Agriculture Organization/World Health Organization food standards program, and it is recognized as an international food safety standards-setting organization in trade agreements to which the United States is a party. EPA may establish a tolerance that is different from a Codex MRL;
however, FFDCA section 408(b)(4) requires that EPA explain the reasons for departing from the Codex level.

The Codex has not established any MRLs for acequinocyl on the crops cited in this document.

V. Conclusion

Therefore, tolerances are established for residues of acequinocyl, including its metabolites and degradates, in or on guava at 0.90 ppm and the tropical and subtropical, small fruit, inedible peel, subgroup 24A at 2.0 ppm.

VI. Statutory and Executive Order Reviews

This action establishes tolerances under FFDCA section 408(d) in response to a petition submitted to the Agency. The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled “Regulatory Planning and Review” (58 FR 51735, October 4, 1993). Because this action has been exempted from review under Executive Order 12866, this action is not subject to Executive Order 13211, entitled “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use” (66 FR 28355, May 22, 2001) or Executive Order 13045, entitled “Protection of Children from Environmental Health Risks and Safety Risks” (62 FR 19885, April 23, 1997), nor is it considered a regulatory action under Executive Order 13771, entitled “Reducing Regulations and Controlling Regulatory Costs” (82 FR 9339, February 3, 2017). This action does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA) (44 U.S.C. 3501 et seq.), nor does it require any special considerations under Executive Order 12898, entitled
“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (59 FR 7629, February 16, 1994).

Since tolerances and exemptions that are established on the basis of a petition under FFDCA section 408(d), such as the tolerance in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 et seq.), do not apply.

This action directly regulates growers, food processors, food handlers, and food retailers, not States or tribes, nor does this action alter the relationships or distribution of power and responsibilities established by Congress in the preemption provisions of FFDCA section 408(n)(4). As such, the Agency has determined that this action will not have a substantial direct effect on States or tribal governments, on the relationship between the national government and the States or tribal governments, or on the distribution of power and responsibilities among the various levels of government or between the Federal Government and Indian tribes. Thus, the Agency has determined that Executive Order 13132, entitled “Federalism” (64 FR 43255, August 10, 1999) and Executive Order 13175, entitled “Consultation and Coordination with Indian Tribal Governments” (65 FR 67249, November 9, 2000) do not apply to this action. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act (UMRA) (2 U.S.C. 1501 et seq.).

This action does not involve any technical standards that would require Agency consideration of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) (15 U.S.C. 272 note).

VII. Congressional Review Act
Pursuant to the Congressional Review Act (5 U.S.C. 801 et seq.), EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. This action is not a “major rule” as defined by 5 U.S.C. 804(2).
List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.


Michael Goodis,
Director, Registration Division, Office of Pesticide Programs.
Therefore, 40 CFR chapter I is amended as follows:

PART 180--[AMENDED]

1. The authority citation for part 180 continues to read as follows:


2. In § 180.599, add alphabetically the entries “Guava” and “Tropical and subtropical, small fruit, inedible peel, subgroup 24A” to the table in paragraph (a) to read as follows:

§ 180.599 Acequinocyl; tolerances for residues.

(a) * * *

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[FR Doc. 2018-12297 Filed: 6/6/2018 8:45 am; Publication Date: 6/7/2018]