

## TEXAS-PM-10 NONATTAINMENT AREAS—Continued

Designated Area	Designation		Classification	
	Date <sup>1</sup>	Type	Date <sup>1</sup>	Type
(Houston 2).				
1 limited area in Harris County ..... (Aldine).		Unclassifiable .....		
1 limited area in Harris County .....		Unclassifiable .....		
1 limited area in Galveston County .....		Unclassifiable .....		
Remainder of AQCR .....		Unclassifiable .....		
AQCR 217:				
1 limited area in Bexar County .....		Unclassifiable .....		
Remainder of AQCR .....		Unclassifiable .....		
AQCR 218 .....		Unclassifiable .....		

<sup>1</sup> This date is November 15, 1990, unless otherwise noted.

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## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 180

[OPP-300528; FRL-5737-1]

RIN 2070-AB78

### Avermectin; Pesticide Tolerances for Emergency Exemptions

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** This regulation establishes time-limited tolerances for the combined residues of avermectin B<sub>1</sub> and its delta-8,9-isomer in or on celeriac and spinach. This action is in response to EPA's granting of emergency exemptions under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of the pesticide on celeriac and spinach. This regulation establishes a maximum permissible level for the combined residues of avermectin B<sub>1</sub> and its delta-8,9-isomer in or on these food commodities pursuant to section 408(l)(6) of the Federal Food, Drug, and Cosmetic Act, as amended by the Food Quality Protection Act of 1996. These tolerances will expire and are revoked on July 31, 1998.

**DATES:** This regulation is effective August 19, 1997. Objections and requests for hearings must be received by EPA on or before October 20, 1997.

**ADDRESSES:** Written objections and hearing requests, identified by the docket control number, [OPP-300528], must be submitted to: Hearing Clerk (1900), Environmental Protection Agency, Rm. M3708, 401 M St., SW., Washington, DC 20460. Fees accompanying objections and hearing

requests shall be labeled "Tolerance Petition Fees" and forwarded to: EPA Headquarters Accounting Operations Branch, OPP (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. A copy of any objections and hearing requests filed with the Hearing Clerk identified by the docket control number, [OPP-300528], must also be submitted to: Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person, bring a copy of objections and hearing requests to Rm. 1132, CM #2, 1921 Jefferson Davis Hwy., Arlington, VA.

A copy of objections and hearing requests filed with the Hearing Clerk may also be submitted electronically by sending electronic mail (e-mail) to: opp-docket@epamail.epa.gov. Copies of objections and hearing requests must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Copies of objections and hearing requests will also be accepted on disks in WordPerfect 5.1 file format or ASCII file format. All copies of objections and hearing requests in electronic form must be identified by the docket control number [OPP-300528]. No Confidential Business Information (CBI) should be submitted through e-mail. Electronic copies of objections and hearing requests on this rule may be filed online at many Federal Depository Libraries.

**FOR FURTHER INFORMATION CONTACT:** By mail: Daniel Rosenblatt, Registration Division 7505C, Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location, telephone number, and e-mail address: Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA, (703) 308-9375, e-mail: rosenblatt.dan@epamail.epa.gov.

**SUPPLEMENTARY INFORMATION:** EPA, on its own initiative, pursuant to section 408(e) and (l)(6) of the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 346a(e) and (l)(6), is establishing tolerances for the miticide avermectin, in or on celeriac at 0.05 parts per million (ppm) and spinach at 0.05 ppm. These tolerances will expire and are revoked on July 31, 1998. EPA will publish a document in the **Federal Register** to remove the revoked tolerances from the Code of Federal Regulations.

### I. Background and Statutory Authority

The Food Quality Protection Act of 1996 (FQPA) (Pub. L. 104-170) was signed into law August 3, 1996. FQPA amends both the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 301 *et seq.*, and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq.* The FQPA amendments went into effect immediately. Among other things, FQPA amends FFDCA to bring all EPA pesticide tolerance-setting activities under a new section 408 with a new safety standard and new procedures. These activities are described below and discussed in greater detail in the final rule establishing the time-limited tolerance associated with the emergency exemption for use of propiconazole on sorghum (61 FR 58135, November 13, 1996)(FRL-5572-9).

New section 408(b)(2)(A)(i) of the 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) 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) 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. . . ."

Section 18 of FIFRA authorizes EPA to exempt any Federal or State agency from any provision of FIFRA, if EPA determines that "emergency conditions exist which require such exemption." This provision was not amended by FQPA. EPA has established regulations governing such emergency exemptions in 40 CFR part 166.

Section 408(l)(6) of the FFDCA requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under section 18 of FIFRA. Such tolerances can be established without providing notice or period for public comment.

Because decisions on section 18-related tolerances must proceed before EPA reaches closure on several policy issues relating to interpretation and implementation of the FQPA, EPA does not intend for its actions on such tolerance to set binding precedents for the application of section 408 and the new safety standard to other tolerances and exemptions.

## II. Emergency Exemption for Avermectin on Celeriac and Spinach and FFDCA Tolerances

Celeriac is similar to celery in appearance and growth habit. It is used in salads and can be cooked. When under pressure from the two-spotted spider mite (*Tetranychus urticae*), celeriac plants become stunted and cosmetically damaged. These problems can render the commodity unmarketable. Based on the information provided by California, EPA concluded that the pressure posed by the two-spotted spider mite on the State's celeriac growers represents an urgent and non-routine situation.

In a separate action, the State of California requested the use of avermectin on spinach to control the leafminer (*Liriomyza spp.*). Spinach is

grown for the fresh market and the processed market. Leafminer has grown increasingly resistant to the registered insecticide alternatives. Leafminer damage renders the spinach disfigured and stunted. Losses would be expected to be as high as 40% without the use of avermectin. EPA's assessment of the resistance problem and the comparative efficacy information submitted by the state is that leafminer poses an urgent and non-routine problem. Therefore, EPA has authorized under FIFRA section 18 the use of avermectin on both celeriac and spinach for control of the two-spotted spider mite and leafminer in California.

As part of its assessment of this emergency exemption, EPA assessed the potential risks presented by residues of avermectin in or on celeriac and spinach. In doing so, EPA considered the new safety standard in FFDCA section 408(b)(2), and EPA decided that the necessary tolerances under FFDCA section 408(l)(6) would be consistent with the new safety standard and with FIFRA section 18. Consistent with the need to move quickly on the emergency exemption in order to address an urgent non-routine situation and to ensure that the resulting food is safe and lawful, EPA is issuing these tolerances without notice and opportunity for public comment under section 408(e), as provided in section 408(l)(6). Although these tolerances will expire and are revoked on July 31, 1998, under FFDCA section 408(l)(5), residues of the pesticide not in excess of the amounts specified in the tolerance remaining in or on celeriac or spinach after that date will not be unlawful, provided the pesticide is applied in a manner that was lawful under FIFRA. EPA will take action to revoke these tolerances earlier if any experience with, scientific data on, or other relevant information on this pesticide indicate that the residues are not safe.

Because these tolerances are being approved under emergency conditions EPA has not made any decisions about whether avermectin meets EPA's registration requirements for use on celeriac or spinach or whether a permanent tolerance for these uses would be appropriate. Under these circumstances, EPA does not believe that these tolerances serve as a basis for registration of avermectin by a State for special local needs under FIFRA section 24(c). Nor do these tolerances serve as the basis for any State other than California to use this pesticide on these crops under section 18 of FIFRA without following all provisions of section 18 as identified in 40 CFR part 166. For additional information

regarding the emergency exemptions for avermectin, contact the Agency's Registration Division at the address provided above.

## III. Risk Assessment and Statutory Findings

EPA performs a number of analyses to determine the risks from aggregate exposure to pesticide residues. First, EPA determines the toxicity of pesticides based primarily on toxicological studies using laboratory animals. These studies address many adverse health effects, including (but not limited to) reproductive effects, developmental toxicity, toxicity to the nervous system, and carcinogenicity. Second, EPA examines exposure to the pesticide through the diet (e.g., food and drinking water) and through exposures that occur as a result of pesticide use in residential settings.

### A. Toxicity

1. *Threshold and non-threshold effects.* For many animal studies, a dose response relationship can be determined, which provides a dose that causes adverse effects (threshold effects) and doses causing no observed effects (the "no-observed effect level" or "NOEL").

Once a study has been evaluated and the observed effects have been determined to be threshold effects, EPA generally divides the NOEL from the study with the lowest NOEL by an uncertainty factor (usually 100 or more) to determine the Reference Dose (RfD). The RfD is a level at or below which daily aggregate exposure over a lifetime will not pose appreciable risks to human health. An uncertainty factor (sometimes called a "safety factor") of 100 is commonly used since it is assumed that people may be up to 10 times more sensitive to pesticides than the test animals, and that one person or subgroup of the population (such as infants and children) could be up to 10 times more sensitive to a pesticide than another. In addition, EPA assesses the potential risks to infants and children based on the weight of the evidence of the toxicology studies and determines whether an additional uncertainty factor is warranted. Thus, an aggregate daily exposure to a pesticide residue at or below the RfD (expressed as 100% or less of the RfD) is generally considered acceptable by EPA. EPA generally uses the RfD to evaluate the chronic risks posed by pesticide exposure. For shorter term risks, EPA calculates a margin of exposure (MOE) by dividing the estimated human exposure into the NOEL from the appropriate animal study. Commonly, EPA finds MOEs

lower than 100 to be unacceptable. This 100-fold MOE is based on the same rationale as the 100-fold uncertainty factor.

Lifetime feeding studies in two species of laboratory animals are conducted to screen pesticides for cancer effects. When evidence of increased cancer is noted in these studies, the Agency conducts a weight of the evidence review of all relevant toxicological data including short-term and mutagenicity studies and structure activity relationship. Once a pesticide has been classified as a potential human carcinogen, different types of risk assessments (e.g., linear low dose extrapolations or MOE calculation based on the appropriate NOEL) will be carried out based on the nature of the carcinogenic response and the Agency's knowledge of its mode of action.

2. *Differences in toxic effect due to exposure duration.* The toxicological effects of a pesticide can vary with different exposure durations. EPA considers the entire toxicity data base, and based on the effects seen for different durations and routes of exposure, determines which risk assessments should be done to assure that the public is adequately protected from any pesticide exposure scenario. Both short and long durations of exposure are always considered. Typically, risk assessments include "acute", "short-term", "intermediate term", and "chronic" risks. These assessments are defined by the Agency as follows.

Acute risk, by the Agency's definition, results from 1-day consumption of food and water, and reflects toxicity which could be expressed following a single oral exposure to the pesticide residues. High end exposure to food and water residues are typically assumed.

Short-term risk results from exposure to the pesticide for a period of 1-7 days, and therefore overlaps with the acute risk assessment. Historically, this risk assessment was intended to address primarily dermal and inhalation exposure which could result, for example, from residential pesticide applications. However, since enactment of FQPA, this assessment has been expanded to include both dietary and non-dietary sources of exposure, and will typically consider exposure from food, water, and residential uses when reliable data are available. In this assessment, risks from average food and water exposure, and high-end residential exposure, are aggregated. High-end exposures from all 3 sources are not typically added because of the very low probability of this occurring in most cases, and because the other

conservative assumptions built into the assessment assure adequate protection of public health. However, for cases in which high-end exposure can reasonably be expected from multiple sources (e.g. frequent and widespread homeowner use in a specific geographical area), multiple high-end risks will be aggregated and presented as part of the comprehensive risk assessment/characterization. Since the toxicological endpoint considered in this assessment reflects exposure over a period of at least 7 days, an additional degree of conservatism is built into the assessment; i.e., the risk assessment nominally covers 1-7 days exposure, and the toxicological endpoint/NOEL is selected to be adequate for at least 7 days of exposure. (Toxicity results at lower levels when the dosing duration is increased.)

Intermediate-term risk results from exposure for 7 days to several months. This assessment is handled in a manner similar to the short-term risk assessment.

Chronic risk assessment describes risk which could result from several months to a lifetime of exposure. For this assessment, risks are aggregated considering average exposure from all sources for representative population subgroups including infants and children.

#### *B. Aggregate Exposure*

In examining aggregate exposure, FFDCA section 408 requires that EPA take into account available and reliable information concerning exposure from the pesticide residue in the food in question, residues in other foods for which there are tolerances, residues in groundwater or surface water that is consumed as drinking water, and other non-occupational exposures through pesticide use in gardens, lawns, or buildings (residential and other indoor uses). Dietary exposure to residues of a pesticide in a food commodity are estimated by multiplying the average daily consumption of the food forms of that commodity by the tolerance level or the anticipated pesticide residue level. The Theoretical Maximum Residue Contribution (TMRC) is an estimate of the level of residues consumed daily if each food item contained pesticide residues equal to the tolerance. In evaluating food exposures, EPA takes into account varying consumption patterns of major identifiable subgroups of consumers, including infants and children. The TMRC is a "worst case" estimate since it is based on the assumptions that food contains pesticide residues at the tolerance level and that 100% of the crop is treated by

pesticides that have established tolerances. If the TMRC exceeds the RfD or poses a lifetime cancer risk that is greater than approximately one in a million, EPA attempts to derive a more accurate exposure estimate for the pesticide by evaluating additional types of information (anticipated residue data and/or percent of crop treated data) which show, generally, that pesticide residues in most foods when they are eaten are well below established tolerances.

Percent of crop treated estimates are derived from federal and private market survey data. Typically, a range of estimates are supplied and the upper end of this range is assumed for the exposure assessment. By using this upper end estimate of percent of crop treated, the Agency is reasonably certain that exposure is not understated for any significant subpopulation group. Further, regional consumption information is taken into account through EPA's computer-based model for evaluating the exposure of significant subpopulations including several regional groups, to pesticide residues. For this pesticide, the population subgroup (of highest concern, females 13 years and older,) was not regionally based.

#### **IV. Aggregate Risk Assessment and Determination of Safety**

Consistent with 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 avermectin and to make a determination on aggregate exposure, consistent with section 408(b)(2), for time-limited tolerances for residues of avermectin on celeriac at 0.05 ppm and spinach at 0.05 ppm. EPA's assessment of the dietary exposures and risks associated with establishing the tolerances 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 nature of the toxic effects caused by avermectin are discussed below.

1. *Acute toxicity.* For acute dietary risk assessment, EPA recommends use of a NOEL of 0.06 mg/kg/day from the developmental toxicity study in mice. The effects observed at the Lowest Effect

Level (LEL) of 0.10 mg/kg/day involved cleft palate. For the purposes of this action, an MOE of 300 is considered necessary to be adequately protective for dietary (food only) exposure.

2. *Short- and intermediate-term toxicity.* For short- and intermediate-term MOE calculations, EPA recommends use of the developmental NOEL of 0.2 mg/kg/day from the oral developmental toxicity study in mice. At the LEL of 0.4 mg/kg/day, there was an increased incidence of cleft palate.

3. *Chronic toxicity.* EPA has established the RfD for avermectin at 0.0004 milligrams/kilogram/day (mg/kg/day). This RfD is based on a 2-generation rat reproductive toxicity study with a NOEL of 0.12 mg/kg/day and an uncertainty factor of 300. In addition to the uncertainty factor of 100 for inter- and intra-species variations, a Modifying Factor (MF) of 3 was used. The MF was used because of the severity of the effects (pup deaths) and the steep dose-response curve. At the LEL of 0.40 mg/kg/day, there was decreased pup body weight and viability during lactation as well as an increased incidence of retinal rosettes in F2b weanlings.

4. *Carcinogenicity.* Avermectin has been classified by EPA as a Group E ("evidence of non-carcinogenicity for humans") chemical. Therefore, a cancer risk assessment is not needed.

### B. Exposures and Risks

1. *From food and feed uses.* Tolerances have been established (40 CFR 180.449) for the combined residues of avermectin B<sub>1</sub> and its delta-8,9-isomer, in or on a variety of raw agricultural commodities, ranging from 0.005 ppm in cottonseed to 0.05 ppm in celery. Risk assessments were conducted by EPA to assess dietary exposures and risks from avermectin as follows:

i. *Acute exposure and risk.* Acute dietary 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 one day or single exposure. In a separate and earlier registration action, the Agency required the development of more highly refined residue and exposure information to support the pesticide. In response, in October 1996, EPA received a Monte Carlo analysis for all uses of avermectin at that time. Since that analysis was generated before these section 18 actions were submitted, EPA does not have information on acute exposures for spinach and celeriac. In addition, given the limitations of EPA's dietary analysis system, EPA does not have consumption data on the minor

crop celeriac. Further, the Agency does not have the capability to independently perform Monte Carlo analysis. Therefore, the acute exposure assessment for this action does not include data associated with the consumption of spinach and celeriac. With the above exceptions, data available to EPA suggest a high-end exposure estimate of 0.000078 mg/kg/day for uses of avermectin. This results in a dietary (food only) MOE of 769 for females 13 years and older, the population subgroup of concern. In EPA's judgement, the addition of spinach and celeriac to acute exposure and risk calculations would not produce acute risks (food only) that exceed a level of concern.

ii. *Chronic exposure and risk.* As mentioned above, the commodity celeriac is not uniquely identified in the Agency's food consumption data system. However, EPA reviewed information that establishes chronic dietary exposure estimates for avermectin. This chronic dietary (food only) risk assessment used anticipated residue refinement for commodities with tolerances for avermectin, but did not incorporate any refinement for percent of crop treated (default of 100% was assumed). Therefore, the resulting exposure estimates should be viewed as partially refined; further refinement for percent of crop treated would result in lower dietary exposure estimates. The existing avermectin tolerances plus the proposed tolerances associated with the section 18 use of the chemical result in an Anticipated Residue Contribution that ranges from 5 percent of the RfD for the U.S. population to 12% of the RfD for non-nursing infants less than a year old.

2. *From drinking water.* In examining aggregate exposure, FQPA directs EPA to consider available information concerning exposures from the pesticide residues in food and all other non-occupational exposures. The primary non-food sources of exposure the Agency looks at include drinking water (whether from ground or surface water), and exposure through pesticide use in gardens, lawns, or buildings (residential and other indoor uses). Based on data available to EPA, avermectin is moderately persistent and not very mobile. It is not likely to be found extensively in ground water, but could be found in surface water. Under anaerobic conditions in the absence of light, avermectin does not degrade. No Health Advisories or Maximum Contaminant Levels for avermectin in drinking water have been established.

Because the Agency lacks sufficient water-related exposure data to complete

a comprehensive drinking water risk assessment for many pesticides, EPA has commenced and nearly completed a process to identify a reasonable yet conservative bounding figure for the potential contribution of water-related exposure to the aggregate risk posed by a pesticide. In developing the bounding figure, EPA estimated residue levels in water for a number of specific pesticides using various data sources. The Agency then applied the estimated residue levels, in conjunction with appropriate toxicological endpoints (RfD's or acute dietary NOEL's) and assumptions about body weight and consumption, to calculate, for each pesticide, the increment of aggregate risk contributed by consumption of contaminated water. While EPA has not yet pinpointed the appropriate bounding figure for exposure from contaminated water, the ranges the Agency is continuing to examine are all below the level that would cause avermectin to exceed the RfD if the tolerance being considered in this document were granted. The Agency has therefore concluded that the potential exposures associated with avermectin in water, even at the higher levels the Agency is considering as a conservative upper bound, would not prevent the Agency from determining that there is a reasonable certainty of no harm if the tolerance is granted.

3. *From non-dietary exposure.* Avermectin is currently registered for use on the following residential non-food sites: ornamental crops (herbaceous and woody), turf, households (indoor and outdoor), and non-food areas of food handling establishments.

i. *Chronic exposure and risk.* Given the uses for avermectin, a chronic non-dietary exposure scenario would not be expected.

ii. *Short- and intermediate-term exposure and risk.* EPA assessed indoor residential risk characterization data to evaluate short- and intermediate-term exposure and risk. Based on the assumptions for exposure total oral, dermal, and respiratory estimated absorbed daily exposure could total .00023 mg/kg/day. This correlates to a total short- and intermediate-term indoor residential MOE of 870 for the U.S. population.

4. *Cumulative exposure to substances with common mechanism of toxicity.* Section 408(b)(2)(D)(v) 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."

The Agency believes that "available information" in this context might include not only toxicity, chemistry, and exposure data, but also scientific policies and methodologies for understanding common mechanisms of toxicity and conducting cumulative risk assessments. For most pesticides, although the Agency has some information in its files that may turn out to be helpful in eventually determining whether a pesticide shares a common mechanism of toxicity with any other substances, EPA does not at this time have the methodologies to resolve the complex scientific issues concerning common mechanism of toxicity in a meaningful way. EPA has begun a pilot process to study this issue further through the examination of particular classes of pesticides. The Agency hopes that the results of this pilot process will increase the Agency's scientific understanding of this question such that EPA will be able to develop and apply scientific principles for better determining which chemicals have a common mechanism of toxicity and evaluating the cumulative effects of such chemicals. The Agency anticipates, however, that even as its understanding of the science of common mechanisms increases, decisions on specific classes of chemicals will be heavily dependent on chemical specific data, much of which may not be presently available.

Although at present the Agency does not know how to apply the information in its files concerning common mechanism issues to most risk assessments, there are pesticides as to which the common mechanism issues can be resolved. These pesticides include pesticides that are toxicologically dissimilar to existing chemical substances (in which case the Agency can conclude that it is unlikely that a pesticide shares a common mechanism of activity with other substances) and pesticides that produce a common toxic metabolite (in which case common mechanism of activity will be assumed).

EPA does not have, at this time, available data to determine whether avermectin has a common mechanism of toxicity with other substances or how to include this pesticide in a cumulative risk assessment. Unlike other pesticides for which EPA has followed a cumulative risk approach based on a common mechanism of toxicity, avermectin does not appear to produce a toxic metabolite produced by other substances. For the purposes of this tolerance action, therefore, EPA has not assumed that avermectin has a common mechanism of toxicity with other substances.

### *C. Aggregate Risks and Determination of Safety for U.S. Population*

1. *Acute risk.* The population subgroup of concern is females 13 years and older. The MOE for this subgroup from food exposures is 769. Despite the potential for exposures to avermectin from drinking water and spinach, EPA does not expect the acute aggregate risk to exceed levels of concern.

2. *Chronic risk.* Using the ARC exposure assumptions described above, EPA has concluded that aggregate exposure to avermectin from food will utilize 5 percent of the RfD for the U.S. population. The existing avermectin tolerances plus the tolerances associated with this action result in an Anticipated Residue Contribution that is equivalent to 5% of the RfD. EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to avermectin in drinking water, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result from aggregate exposure to avermectin residues.

3. *Short- and intermediate-term risk.* Short- and intermediate-term aggregate exposure takes into account chronic dietary food and water (considered to be a background exposure level) plus indoor and outdoor residential exposure.

As referenced above, for short- and intermediate-term exposures, EPA assessed information that addresses this topic in relation to human exposure associated with residential use through oral, dermal, and respiratory exposures. The anticipated MOE was 803 for the U.S. population. EPA considers this MOE to be adequately protective.

### *D. Aggregate Cancer Risk for U.S. Population*

Avermectin has been classified as a Group E "evidence of non-carcinogenicity for humans" chemical by EPA. Therefore, a cancer risk assessment is not needed.

### *E. Aggregate Risks and Determination of Safety for Infants and Children*

1. *Safety factor for infants and children — a. In general.* In assessing the potential for additional sensitivity of infants and children to residues of avermectin, EPA considered data from developmental toxicity studies in the mouse, rat and rabbit and a two-generation reproduction study in the rat. The developmental toxicity studies are designed to evaluate adverse effects on

the developing organism resulting from maternal pesticide exposure during gestation. Reproduction studies provide information relating to effects from exposure to the pesticide on the reproductive capability of mating animals and data on systemic toxicity.

FFDCA section 408 provides that EPA shall apply an additional tenfold margin of safety for infants and children in the case of threshold effects to account for pre- and post-natal toxicity and the completeness of the database unless EPA determines that a different margin of safety will be safe for infants and children. Margins of safety are incorporated into EPA risk assessments either directly through use of a MOE analysis or through using uncertainty (safety) factors in calculating a dose level that poses no appreciable risk to humans. EPA believes that reliable data support using the standard factor (usually 100 for combined inter- and intra-species variability) and not the additional tenfold factor when EPA has a complete data base under existing guidelines and when the severity of the effect in infants or children or the potency or unusual toxic properties of a compound do not raise concerns regarding the adequacy of the standard safety factor.

b. *Developmental toxicity studies.* In the mouse developmental toxicity analysis, the maternal (systemic) NOEL was 0.05 mg/kg/day based on mortality at the lowest observed effect level (LOEL) of 0.075 mg/kg/day. The developmental (fetal) NOEL was 0.2 mg/kg/day based on cleft palate at the LOEL of 0.4 mg/kg/day. The Delta-8,9-Isomer was also tested for developmental toxicity in the mouse. In the mouse developmental study for the isomer, the maternal (systemic) NOEL was 0.10 mg/kg/day, based on mortality at the LOEL of 0.20 mg/kg/day. The developmental (fetal) NOEL was 0.06 mg/kg/day, based on cleft palate at the LOEL of 0.10 mg/kg/day.

In the rat developmental study, the maternal (systemic) NOEL was greater than or equal to 1.6 mg/kg/day. The developmental (fetal) NOEL was 1.6 mg/kg/day. In the rabbit developmental study, the maternal (systemic) NOEL was 1.0 mg/kg/day, based on decreased body weight and decreased food and water consumption at the LOEL of 2.0 mg/kg/day. The developmental (fetal) NOEL was 1.0 mg/kg/day, based on clubbed foot, and delayed ossification of sternebrae, metacarpals, and phalanges at the LOEL of 2.0 mg/kg/day.

c. *Reproductive toxicity study.* In the 2-generation rat reproductive toxicity study, the maternal (systemic) NOEL was 0.4 mg/kg/day (HDT). The

developmental (pup) NOEL was 1.2 mg/kg/day, based on decreased viability indices, decreased pup body weight, and retinal fold in weanlings at the LOEL of 0.4 mg/kg/day. The reproductive (pup) NOEL was 0.4 mg/kg/day (HDT).

d. *Pre- and post-natal sensitivity.* Both the delta-8,9-isomer of avermectin and avermectin per se exhibit cleft palate in CF1 mouse developmental studies. The NOEL for cleft palate for the delta-8,9-isomer is 0.06 mg/kg/day with the LOEL at 0.10 mg/kg/day. For avermectin per se, the NOEL for cleft palate is 0.2 mg/kg/day with the LOEL at 0.4 mg/kg/day. Therefore, pre-natal sensitivity to the regulated residue for avermectin is demonstrated when considering these developmental findings in the CF1 Mouse. An additional 3-fold uncertainty factor has been added to account for these developmental findings.

An acute dietary risk assessment is needed based on the results of the developmental study in mice with the delta-8,9-isomer. This risk assessment will evaluate acute dietary risk to females 13 years and older. For the purpose of the section 18, an MOE of 300 is considered necessary to be adequately protective for dietary (food only) exposure.

To evaluate the pre-natal risks, the acute dietary MOE calculations for females 13 years and older has been conducted using the lowest NOEL for all developmental studies for cleft palate (0.06 mg/kg/day).

The results of the rat reproduction study required that a Modifying Factor of 3 be added to the usual uncertainty factor of 100 used for the RfD. EPA used this Modifying Factor in developing this analysis. Typically, the Agency uses a modifying factor of 10 when no study is available and uses a modifying factor of 3 when a study exists which shows effects in the fetus before they appear in the parent.

2. *Acute risk.* The acute dietary MOE for females 13 years and older (accounts for both maternal and fetal exposure) is 769. This MOE calculation is based on the developmental NOEL in mice of 0.06 mg/kg/day. This estimate is based on Monte Carlo modeling incorporating anticipated residue and percent of crop treated refinement. In EPA's judgement, the large acute dietary MOE provides assurance that there is a reasonable certainty of no harm for females 13 years and older and the pre-natal development of infants.

3. *Chronic risk.* Using the conservative exposure assumptions described above, EPA has concluded that aggregate exposure to avermectin from food will utilize 12% of the RfD for

non-nursing infants less than a year old and 8% of the RfD for children 1-6 years old. EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to avermectin in drinking water, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to avermectin residues.

4. *Short- or intermediate-term risk.* The anticipated MOEs for short- and intermediate-term exposures for infants and children do not pose a level of concern. The calculated MOEs range from 716 for non-nursing infants to 787 for children 7-12 years old.

## V. Other Considerations

### A. Metabolism In Plants and Animals

The nature of the residue in plants and animals is adequately understood. As cited at 40 CFR 180.449, the regulable residues are avermectin B<sub>1</sub> and its delta-8,9-isomer.

### B. Analytical Enforcement Methodology

Merck Method 10001, rev. 2, an HPLC-fluorescence method, may be used to enforce the tolerance expression. This method has been submitted to FDA for publication in PAM Volume II.

### C. Magnitude of Residues

Residues of avermectin B<sub>1</sub> and its delta-8,9-isomer are not expected to exceed 0.05 ppm on celeriac or spinach as a result of these section 18 requests. Secondary residues are not expected in animal commodities as no feed items are associated with these section 18 uses.

### D. International Residue Limits

No Codex MRLs have been established for avermectin residues on celeriac or spinach.

## VI. Conclusion

Therefore, the tolerances are established for avermectin B<sub>1</sub> and its delta-8,9-isomer in celeriac at 0.05 ppm and spinach at 0.05 ppm.

## VII. Objections and Hearing Requests

The new FFDCA section 408(g) provides essentially the same process for persons to "object" to a tolerance regulation issued by EPA under new section 408(e) and (l)(6) as was provided in the old section 408 and in section 409. However, the period for filing

objections is 60 days, rather than 30 days. EPA currently has procedural regulations which govern the submission of objections and hearing requests. These regulations will require some modification to reflect the new law. However, until those modifications can be made, EPA will continue to use those procedural regulations with appropriate adjustments to reflect the new law.

Any person may, by October 20, 1997 file written objections to any aspect of this regulation and may also request a hearing on those objections. Objections and hearing requests must be filed with the Hearing Clerk, at the address given above (40 CFR 178.20). A copy of the objections and/or hearing requests filed with the Hearing Clerk should be submitted to the OPP docket for this rulemaking. The objections submitted must specify the provisions of the regulation deemed objectionable and the grounds for the objections (40 CFR 178.25). Each objection must be accompanied by the fee prescribed by 40 CFR 180.33(i). If a hearing is requested, the objections must include a statement of the factual issues on which a hearing is requested, the requestor's contentions on such issues, and a summary of any evidence relied upon by the requestor (40 CFR 178.27). A request for a hearing will be granted if the Administrator determines that the material submitted shows the following: There is genuine and substantial issue of fact; there is a reasonable possibility that available evidence identified by the requestor would, if established, resolve one or more of such issues in favor of the requestor, taking into account uncontested claims or facts to the contrary; and resolution of the factual issues in the manner sought by the requestor would be adequate to justify the action requested (40 CFR 178.32). Information submitted in connection with an objection or hearing request may be claimed confidential by marking any part or all of that information as Confidential Business Information (CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the information that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice.

## VIII. Public Docket

EPA has established a record for this rulemaking under docket control number [OPP-300528] (including any

comments and data submitted electronically). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The public record is located in Room 1132 of the Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA.

Electronic comments may be sent directly to EPA at:  
 opp-docket@epamail.epa.gov.

Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption.

The official record for this rulemaking, as well as the public version, as described above will be kept in paper form. Accordingly, EPA will transfer any copies of objections and hearing requests received electronically into printed, paper form as they are received and will place the paper copies in the official rulemaking record which will also include all comments submitted directly in writing. The official rulemaking record is the paper record maintained at the Virginia address in "ADDRESSES" at the beginning of this document.

#### IX. Regulatory Assessment Requirements

This final rule establishes tolerances under FFDCA section 408(1)(6). 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). This final rule does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq.*, or impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104-4). Nor does it require any prior consultation as specified by Executive Order 12875, entitled Enhancing the Intergovernmental Partnership (58 FR 58093, October 28, 1993), or special considerations as required by Executive Order 12898, entitled Federal Actions to

Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629, February 16, 1994), or require OMB review in accordance with Executive Order 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997).

In addition, since these tolerances and exemptions that are established under FFDCA section 408 (d), such as the tolerances 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. Nevertheless, the Agency has previously assessed whether establishing tolerances, exemptions from tolerances, raising tolerance levels or expanding exemptions might adversely impact small entities and concluded, as a generic matter, that there is no adverse economic impact. The factual basis for the Agency's generic certification for tolerance actions published on May 4, 1981 (46 FR 24950), and was provided to the Chief Counsel for Advocacy of the Small Business Administration.

#### X. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, the Agency has submitted 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 General Accounting Office prior to publication of this rule in today's **Federal Register**. This 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.

Dated: August 11, 1997.

**James Jones,**

*Acting 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:

**Authority:** 21 U.S.C. 3 46a and 371.

2. Section 180.449 is revised to read as follows:

#### § 180.449 Avermectin B<sub>1</sub> and its delta-8,9-isomer; tolerances for residues.

(a) *General.* Tolerances are established for the combined residues of the insecticide avermectin (a mixture of avermectins containing greater than or equal to 80% avermectin B<sub>1a</sub> (5-*O*-demethyl avermectin A<sub>1</sub>) and less than or equal to 20% avermectin B<sub>1b</sub> (5-*O*-demethyl-25-de(1-methylpropyl)-25-(1-methylethyl) avermectin A<sub>1</sub>)) and its delta-8,9-isomer in or on the following commodities:

Commodity	Parts per million	Expiration/revocation date
Almonds .....	0.005	None
Apples .....	0.020	None
Cattle, fat .....	0.015	9/1/99
Cattle, mby .....	0.02	9/1/99
Cattle, meat .....	0.02	9/1/99
Celery .....	0.05	None
Citrus, dried pulp .....	0.10	9/1/99
Citrus, oil .....	0.10	9/1/99
Citrus whole fruit .....	0.02	9/1/99
Cottonseed .....	0.005	9/1/99
Cucurbits (cucumbers, mellons, and squashes) .....	0.005	None
Hops, dried .....	0.2	9/1/99
Lettuce, head .....	0.05	None
Milk .....	0.005	9/1/99
Pears .....	0.02	None
Peppers, bell .....	0.01	None
Potatoes .....	0.005	9/1/99
Strawberry .....	0.02	None
Tomatoes, fresh .....	0.01	None
Walnuts .....	0.005	None

(b) *Section 18 emergency exemptions.* Time-limited tolerances are established for residues of the miticide avermectin B<sub>1</sub> and its delta-8,9-isomer in connection with use of the pesticide under section 18 emergency exemptions granted by EPA. These tolerances will expire and are revoked on the dates specified in the following table:

Commodity	Parts per million	Expiration/revocation date
Celery .....	0.05	7/31/98
Spinach .....	0.05	7/31/98

(c) *Tolerances with regional registrations.* [Reserved]

(d) *Indirect or inadvertent residues.* [Reserved]

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