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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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PESTICIDES AND TOXIC
SUBSTANCES

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MEMORANDUM

SUBJECT: **Residue Chemistry Chapter for the Methyl Parathion Reregistration Eligibility Decision (RED) Document.**
DP Barcode No.: D239825
Chemical No.: 053501
Reregistration Case No.: 0153

FROM: Bonnie Cropp-Kohlligian, Environmental Scientist Bonnie Cropp-Kohlligian
Reregistration Branch II
Health Effects Division [7509C]

THRU: Alan P. Nielsen, Branch Senior Scientist
Reregistration Branch II
Health Effects Division [7509C]

TO: Diana Locke
Reregistration Branch II
Health Effects Division [7509C]

And

Arnold Layne/Emily Mitchell
Reregistration Branch I
Special Review and Reregistration Division [7508W]

Attached is the Residue Chemistry Chapter for the Methyl Parathion RED Document. This document was prepared by Dynamac Corporation under the supervision of HED and revised by the Branch to reflect Agency policies.

Attachment: Residue Chemistry Chapter for the Methyl Parathion RED Document.

cc: BLCKohlligian (RRB2), Methyl Parathion Reg. Std. File, Methyl Parathion SF, RF.
7509C:RRB2:BLCKohlligian:CM#2:Rm 804E:703-305-7462: 6/10/98.

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METHYL PARATHION

REREGISTRATION ELIGIBILITY DOCUMENT

RESIDUE CHEMISTRY CONSIDERATIONS

PC Code No. 053501; Case 0153

INTRODUCTION

Methyl parathion [*O,O*-dimethyl-*O*-*p*-nitrophenylthiophosphate] is an insecticide/acaricide registered for use on a variety of fruits, vegetables, and field crops (see Table A). Methyl parathion is sold in the U.S. by Cheminova Agro A/S and Elf Atochem North America, the basic producers, under the trade names Methyl Parathion and Penncap-M®. Formulations registered by the basic producers for use on food/feed crops include microencapsulated (Mcap) and emulsifiable concentrate (EC) formulations. Methyl parathion may be applied using aerial and ground equipment via foliar, dormant, and delayed dormant treatments. Multiple Active Ingredient (MAI) formulations of methyl parathion are registered in combination with parathion or endosulfan or malathion.

REGULATORY BACKGROUND

Methyl parathion is a list A reregistration chemical that was the subject of a Reregistration Standard issued on 11/8/95 and a Guidance Document issued on 12/8/86. The Methyl Parathion Reregistration Standard Update issued 11/24/92 reviewed residue chemistry data submitted in response to the 12/86 Guidance Document. Numerous submissions of data have been received since the Update was issued. Recently, a Methyl Parathion Data Call-In (DCI) was issued 4/10/97. The basic producers, Cheminova and Elf Atochem, submitted 90-Day Responses to the 4/10/97 Methyl Parathion DCI, dated 7/14/97 and 7/28/97, respectively. In their 90-Day Responses to the Methyl Parathion DCI issued 4/10/97, the registrants clarified uses of methyl parathion which were being supported under reregistration and committed to generate residue data and amend end-use product (EP) labels, as needed, in support of the reregistration of methyl parathion. The information contained in this document outlines the current Residue Chemistry Science Assessments with respect to the reregistration of methyl parathion and takes into account the 90-Day Responses of Cheminova and Elf Atochem to the Methyl Parathion DCI issued 4/10/97.

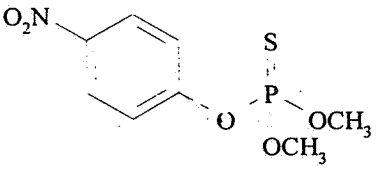
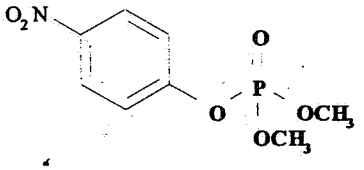
Tolerances for residues of ethyl parathion or its methyl homolog (methyl parathion) in/on raw agricultural commodities (RACs) have been established under 40 CFR §180.121(a) and

§180.319, and tolerances for residues of methyl parathion *per se* have been established under 40 CFR §180.121(b). No tolerances for residues of methyl parathion have been established for animal commodities or processed food/feed commodities.

The HED Metabolism Assessment Review Committee (memo by B. Cropp-Kohlligian dated 5/21/98) has tentatively concluded that methyl parathion residues of concern in plant commodities include methyl parathion, methyl paraoxon, and *p*-nitrophenol and that methyl parathion residues of concern in animal commodities include methyl parathion, methyl paraoxon, *p*-nitrophenol, and amino-paraoxon-methyl. The tolerance expression for plant and animal commodities may be based on methyl parathion only. Methyl parathion residues of concern to be included in the risk assessments based on cholinesterase inhibition for plant and animal commodities will include methyl parathion and methyl paraoxon. Residues of *p*-nitrophenol do not have to be included in the tolerance expression or considered in the aggregate risk assessment for methyl parathion with respect to cholinesterase inhibition, but should be considered in conjunction with the cumulative risk assessment for *p*-nitrophenol. Toxicology deems amino-paraoxon-methyl of concern due to neuropathy of unknown origin and not due to cholinesterase inhibition. Once outstanding livestock feeding studies have been submitted, the Agency will determine how to include amino-paraoxon-methyl in the risk assessment.

The chemical names and structures of methyl parathion and methyl paraoxon are depicted in Figure A.

Figure A. Chemical names and structures of methyl parathion and methyl paraoxon.

Common Name/Chemical Name	Chemical Structure
Methyl parathion *O,O*-dimethyl-*O*-*p*-nitrophenyl thiophosphate	
Methyl paraoxon *O,O*-dimethyl-*O*-*p*-nitrophenyl phosphate	

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SUMMARY OF SCIENCE FINDINGS

OPPTS GLN 860.1200: Directions for Use

A search of the Reference Files System (REFS) conducted 3/23/98 identified 3 methyl parathion end-use products with food/feed uses that are currently registered to Cheminova or Elf Atochem and which the registrants claim to support under reregistration according to their 90-Day Responses to the Methyl Parathion DCI issued 4/10/97. These products are presented below. [Note: As per a December 1996 agreement with the Agency, Cheminova voluntarily canceled the registrations for their end-use products EPA Reg. Nos. 4787-18 and 4718-11. These products are currently pending cancellation and will not be discussed further in this document.]

EPA Reg No.	Label Acceptance Date	Formulation Class	Product Name
4581-292 [a]	5/96	2 lb/gal Mcap	Penncap-M microencapsulated Insecticide
4787-19 [b]	12/96	3 lb/gal EC	Ethyl-Methyl Parathion 6-3 EC
67760-29 [c]	2/97	4 lb/gal EC	Cheminova Methyl Parathion 4 EC

[a] Includes Special Local Needs (SLN) Registration Nos. AL97000300, CA97002400, ID84001000, IN88000200, IN88000700, LA96000100, MN97000100, MO95000100, MS97000600, NM82000400, WA82005400, and WI95000500.

[b] This is a MAI formulation containing 6 lb ai/gal of parathion in addition to 3 lb ai/gal of methyl parathion.

[c] Includes SLN Registration Nos. ID97001300, OR9700200, TX97000600, and WA97003400. In response to the Methyl Parathion DCI issued 4/10/97, Cheminova has submitted an amended end-use product label (9/12/97) which is currently under review in RD.

Note: Three other SLN registrations were issued under products not registered to the basic producers; they are (i) TX9700900 under EPA Reg. No. 2935-528, (ii) NV97000100 under EPA Reg. No. 2935-527, and (iii) WA97001800 under EPA Reg. No. 2935-527. These are also included in Table A.

The Methyl Parathion DCI issued 4/10/97 reviewed the above labels and supporting residue data and concluded that label amendments were required for almost every use pattern. Registrants were required to amend the labels to specify only those crops which would be supported under reregistration and to specify the maximum number of applications per season or a maximum seasonal application rate for each crop. In response to the Methyl Parathion DCI issued 4/10/97, Cheminova submitted (9/12/97) an amended label for their 4 lb/gal EC formulation (EPA Reg. No. 67760-29) which is currently under review in RD. The subject amended EC label addresses many of the label requirements specified in the Methyl Parathion DCI issued 4/10/97 and the use information on the amended label (dated 9/12/97) for the 4 lb/gal EC formulation has been incorporated into the methyl parathion reregistration eligibility decisions presented herein.

Unless registrants intend to submit additional data to support ULV applications of methyl parathion to crops other than the ULV applications to cotton which are being supported, all methyl parathion end-use product labels must be amended to specify a minimum spray volume of 2 gal/A for vegetable crops and 10 gal/A for orchard crops. Other required label amendments for specific crops are listed in Table B under the individual crop listing.

A comprehensive summary of the registered feed/food use patterns of methyl parathion, based on the product labels registered to Elf Atochem N.A. and Cheminova A/S which are being supported under reregistration and existing SLN registrations, is presented in Table A. **[Note: Use information specified in Table A for the Cheminova 4 lb/gal EC formulation (EPA Reg. No. 67760-29) is based on the amended label submitted 9/12/97 which is currently under review in RD.]**

A tabular summary of the residue chemistry science assessments for reregistration of methyl parathion is presented in Table B. The conclusions listed in Table B regarding the reregistration eligibility of methyl parathion food/feed uses are based on the use patterns registered by the basic producers, Elf Atochem and Cheminova and depend on the Agency's acceptance of the amended label for the 4 lb/gal EC formulation registered to Cheminova (EPA Reg. No. 67760-29) submitted 9/12/97 that is currently under review in RD. When end-use product DCIs are developed (e.g., at issuance of the RED), RD should require that: (i) all EC formulation end-use product labels (e.g., MAI labels, SLNs, and products subject to the generic data exemption) be amended such that they are consistent with the EC formulation end-use product labels registered to Cheminova (EPA Reg.Nos. 67760-29 and 4787-19) and (ii) all Mcap formulation end-use product labels (e.g., MAI labels, SLNs, and products subject to the generic data exemption) be amended such that they are consistent with the Mcap formulation end-use product label registered to Elf Atochem (EPA Reg.No. 4581-292).

OPPTS GLN 860.1300: Nature of the Residue in Plants

The qualitative nature of the residue in plants is not adequately understood. Acceptable metabolism studies are available for cotton and potatoes; however, the previously submitted lettuce metabolism study has been deemed inadequate. A new lettuce metabolism study is required.

The HED Metabolism Assessment Review Committee (memo by B. Cropp-Kohlligian dated 5/21/98) has tentatively concluded that based on available plant metabolism and magnitude of the residue data, methyl parathion residues of concern in/on plant commodities are methyl parathion, methyl paraoxon, and *p*-nitrophenol. Methyl parathion residues of concern to be included in the risk assessment for plant commodities based on cholinesterase inhibition will include methyl parathion and methyl paraoxon. The tolerance expression may be based on methyl parathion only since detectable levels of methyl paraoxon have not been found in/on commodities tested by FDA monitoring. Residues of *p*-nitrophenol do not have to be included

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in the tolerance expression or considered in the aggregate risk assessment for methyl parathion with respect to cholinesterase inhibition, but should be considered in conjunction with the cumulative risk assessment for *p*-nitrophenol. The risk assessment for *p*-nitrophenol will be based on its own toxicological endpoints (rather than cholinesterase inhibition) and should include exposure to *p*-nitrophenol from its use as a fungicide on leather. Residues of methyl parathion, methyl paraoxon, and *p*-nitrophenol should be determined in/on plant samples collected in future plant magnitude of the residue studies.

OPPTS GLN 860.1300: Nature of the Residue in Livestock

The qualitative nature of the residue in animals is understood based upon adequate ruminant and poultry metabolism studies. The following additional data are required to validate the experimental methods for the poultry and ruminant metabolism studies: (i) the in-life portion of the study, including total feeds consumed to determine theoretical dietary intake of methyl parathion, as ppm, in the feed; (ii) the storage intervals for goat tissue and milk, and hen tissue and egg samples; and (iii) for the ruminant study only, the specific fraction or matrix used for Soxhlet extraction, acid hydrolysis, and enzyme hydrolysis; flow charts must be provided to indicate at what point these procedures were used.

The HED Metabolism Assessment Review Committee (memo by B. Cropp-Kohlligian dated 5/21/98) has tentatively concluded that based on available animal metabolism data, methyl parathion residues of concern in animal commodities are methyl parathion, methyl paraoxon, *p*-nitrophenol, and amino-paraoxon-methyl. [Note: Livestock feeding studies remain outstanding.] As with plants, methyl parathion residues of concern to be included in the risk assessment for animal commodities based on cholinesterase inhibition will include methyl parathion and methyl paraoxon. The tolerance expression may be based on methyl parathion only. Residues of *p*-nitrophenol do not have to be included in the tolerance expression or considered in the aggregate risk assessment for methyl parathion with respect to cholinesterase inhibition, but should be considered in conjunction with the cumulative risk assessment for *p*-nitrophenol. The risk assessment for *p*-nitrophenol will be based on its own toxicological endpoints (rather than cholinesterase inhibition) and should include exposure to *p*-nitrophenol from its use as a fungicide on leather. Toxicology deems amino-paraoxon-methyl of concern due to neuropathy of unknown origin and not due to cholinesterase inhibition. Once outstanding livestock feeding studies have been submitted, the Agency will determine how to include amino-paraoxon-methyl in the risk assessment. Residues of methyl parathion, methyl paraoxon, *p*-nitrophenol, and amino-paraoxon-methyl should be determined in meat, milk, poultry, and egg tissue samples from the required livestock feeding studies.

OPPTS GLN 860.1340: Residue Analytical Methods

Pesticide Analytical Manual (PAM) Vol. II lists Methods I(a) and I(b) (PAM, Vol. I multiresidue methods for organophosphates), I(c), I(d), and II for parathion. Methyl parathion is also recovered under these methods.

The proposed enforcement method employed to determine methyl parathion and methyl paraoxon in plant commodities must undergo an independent laboratory validation at which time the Agency will perform a method trial on the procedure. If additional metabolites of concern are identified in the outstanding lettuce metabolism study, additional analytical methods may be required.

Residue data on crop and processed commodities were collected using a modification of Elf Atochem Method Number BR-007-00, which was reviewed in the Update. A brief description follows. Residues are extracted with acidic acetone, refluxed for 30 minutes, and filtered. The acetone is removed and the aqueous phase partitioned with ethyl acetate and filtered through glass wool and anhydrous sodium sulfate. The ethyl acetate extract is reduced in volume and cleaned up by gel permeation chromatography (GPC). Methyl parathion and methyl paraoxon are determined by GC equipped with a flame photometric detector (FPD) operating in the phosphorus mode. Following clean up by GPC, an aliquot of the ethyl acetate extract was further cleaned up using a Florisil Sep Pak and then analyzed for *p*-nitrophenol by HPLC. The limit of quantitation was 0.05 ppm for each compound.

In conjunction with the ruminant and poultry feeding studies, the registrants must provide data validating the analytical method(s) used for determining methyl parathion, methyl paraoxon, *p*-nitrophenol, and amino-paraoxon-methyl in meat, milk, poultry, and eggs. If the feeding studies indicate that tolerances are necessary for residues in animal commodities, then the registrants must propose an enforcement method for determining the residues of concern in animal commodities which must be regulated.

OPPTS GLN 860.1360: Multiresidue Method Testing

The FDA PESTDATA database indicates that methyl parathion is completely recovered using FDA Multiresidue Protocols D and E (fatty and nonfatty), PAM I Sections 232.4, 211.1 and 212.1, and that its oxygen analog (methyl paraoxon) is not recovered by Protocol E (fatty and nonfatty).

OPPTS GLN 860.1380: Storage Stability Data

Pending submission of an acceptable storage stability study on residues in peaches, the requirements for storage stability data on plant commodities are satisfied for the purposes of reregistration. [Note: Peach storage stability data (MRID 44413301) and grape storage stability data (MRID 44413403) are currently under review (D245124).] Data depicting the storage stability of methyl parathion residues of concern in animal commodities are required in conjunction with the ruminant and poultry feeding studies.

Acceptable storage stability data are available indicating that methyl parathion *per se* is stable at -20 C for up to 24 months in turnip roots and tops, green onions, lettuce, cabbage, mustard greens, celery, soybeans, beans (snap and dry), peas (dry seed and succulent pods), pea forage and straw, corn grain, forage and fodder, wheat grain, forage and straw, grass hay, and clover forage; for up to 18 months in sunflower seeds; for up to 14 months in canola seed, oil, meal, and processing waste; for up to 12 months in walnuts; and for up to 6 months in tomato wet pomace, puree, juice, and catsup.

Data are also available indicating that the metabolite, methyl paraoxon, is stable at -20 C for up to 24 months in turnip roots and tops, mustard greens, cabbage, celery, beans (snap and dry), peas (dry seed), pea forage and straw, corn grain, forage and fodder, wheat grain, forage and straw, grass hay, and clover forage; for up to 18 months in green onions and sunflower seeds; for up to 14 months in canola oil and processing waste; for up to 6 months in lettuce and canola meal; and for up to 1 month in soybeans, succulent pea pods, canola seeds, and walnuts.

In addition, Elf Atochem has indicated that based on an uncompleted storage stability study using peaches, residues of methyl parathion and methyl paraoxon are stable at -20 C in/on peaches for up to 12 months.

With the exceptions of residues of methyl paraoxon in lettuce, soybeans, succulent pea pods, canola seeds, and nuts, the storage stability data indicate that residues of methyl parathion and methyl paraoxon are stable in plant commodities for the intervals and under the conditions that test samples were stored in the residue studies. Although methyl paraoxon is unstable in selected plant matrices, additional field trial data will not be required to replace the available residue data on these commodities as methyl paraoxon did not comprise a sizable portion of the terminal residue in the plant metabolism studies and was only observed at detectable/significant levels in a limited number of crops.

OPPTS GLN 860.1500: Magnitude of the Residue in Crop Plants

Residue data are not required on the following crop/commodities as the basic producers have indicated in their 90-Day Responses to the Methyl Parathion DCI issued 4/10/97 that they do not intend to support the use of methyl parathion on the following crops under reregistration: apricots, avocados, birdsfoot trefoil, blackberries, blueberries (huckleberries), boysenberries, citrus fruits, clover, cranberries, cucumbers, currants, dates, dewberries, eggplant, endive (escarole), figs, filberts, garden beets, garlic, gooseberries, guar beans, guavas, Loganberries, mangoes, melons, mustard seed, okra, olives, parsley, parsnips, peppers, pineapples, pumpkins, quinces, radishes, raspberries, rutabagas, safflower seed, squash, strawberries, sugarcane, Swiss chard, tobacco, vetch, and Youngberries.

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Although not supported by the basic producers, IR-4 plans to support the use of methyl parathion on hops. Field trial data depicting methyl parathion residues of concern in/on mature dried hop cones reflecting the proposed maximum use rate of methyl parathion (unknown at this time) on hops are required. [Note: Hops field trial data (MRID 44501201) are currently under review (D244404).]

Pending Agency acceptance of the amended 4 lb/gal EC label (EPA Reg. No. 67760-29) submitted by Cheminova 9/12/97 and provided the registrants make the additional label amendments required herein, reregistration requirements for magnitude of the residue in plants are fulfilled for the following crops/commodities: artichokes, broccoli, cabbage, carrots, celery, corn, grapes, lentils, lettuce, mustard greens, peaches, peas (succulent and dried seed), rape seed (canola), rice grain, spinach, sugarbeet roots, sunflower seeds, tomatoes, turnip roots, and walnuts. Adequate field trial data depicting methyl parathion residues of concern following applications made according to the maximum or proposed federally registered use patterns have been submitted for these commodities. Geographical representation is adequate and a sufficient number of trials reflecting representative formulation classes were conducted.

For purposes of reregistration, residue data are required on the following crop/commodities: aspirated grain fractions, alfalfa, almonds, apples, beans (succulent and dried), cherries, cottonseed, cotton gin byproducts, grass, onions, peanuts, pears, pecans, plums, potatoes, rice straw, rape forage, sorghum, soybeans, sweet potatoes, sugar beet tops, turnip greens, and wheat.

Residue data on wheat will be translated to barley, oats, and rye commodities, and residue data on the representative commodities broccoli, mustard greens and cabbage will be used to support the *Brassica* (Cole) Vegetables crop group.

OPPTS GLN 860.1520: Magnitude of the Residue in Processed Food/Feed

Pending Agency acceptance of the amended 4 lb/gal EC label (EPA Reg. No. 67760-29) submitted by Cheminova 9/12/97 and provided the registrants make the additional label amendments required herein, reregistration requirements for magnitude of the residue in processed food/feed commodities are fulfilled for apple, canola (rapeseed), corn, cottonseed, grape, potato, rice, soybean, sugar beet, tomato, and wheat. Data from the processing study on wheat grain will be used to determine the need for tolerances on barley grain, oat grain, and rye grain processed commodities. Processing studies on citrus, figs, olives, pineapple, safflower seed, and sugarcane are not required as the basic producers are not supporting uses on these crops. In addition, the requirements for a processing study on sweet sorghum will be waived provided the registrants amend their labels to allow use only on forage and grain type

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sorghums. Processing studies on peanuts, plums/prunes, and sunflower seeds remains outstanding.

Based on the available processing studies, tolerances are not required for residues in processed commodities of canola (rapeseed), corn grain, cottonseed, grapes, potatoes, sugar beets, and tomatoes. Residues did not concentrate in commodities processed from corn grain, cottonseed, grapes, and tomatoes bearing detectable residues. Residues were nondetectable in potatoes and sugar beets treated at 5x the maximum label rate and in the commodities processed from these crops.

Residues of methyl parathion did not concentrate in canola meal, but concentrated by 2x in refined canola oil processed from seed treated at 5x. Residues of methyl parathion were below the LOQ (0.05 ppm) in/on canola seed from all field trials. When residues in oil are adjusted for the degree of exaggeration, the maximum expected residues in oil would be <0.2 ppm. As the Agency is not proposing to lower the current 0.2 ppm tolerance for residues in/on canola (rapeseed), residues in oil would be covered by the current tolerance. Therefore, a separate tolerance is not required for canola oil.

In rice, residues of methyl parathion did not concentrate in brown rice, polished rice, or rice bran, but concentrated by 4.7x in rice hulls. Based upon the highest average field trial (HAFT) value for residues of methyl parathion (2.35 ppm) in/on rice grain, a tolerance of 12 ppm for residues of methyl parathion in rice hulls should be established.

In apples, residues of methyl parathion did not concentrated in apple juice, but concentrated by 5.3x in wet apple pomace. Apple field trial data (including those under review (MRIDs 44413501 and 44413502; DP Barcode D241912) indicate that the currently established tolerance for residues of methyl parathion in/on apples (1 ppm) is just adequate to cover residues likely to occur in/on apples resulting from the maximum use rate of the Mcap formulation of methyl parathion on apples. Hence, a tolerance of 5 ppm should be established for residues of methyl parathion in apple, wet pomace.

In soybeans, residues of methyl parathion did not concentrate significantly in hulls and meal, but concentrated by 3x in refined oil. Once adequate residue data are available for soybeans, a tolerance for residues of methyl parathion in refined soybean oil should be established based upon the HAFT value for residues of methyl parathion in/on soybeans and the 3x concentration factor.

In wheat, residues of methyl parathion did not concentrate in flour, but concentrated by ca 2x in wheat bran, shorts, and germ. Available wheat grain field trial data (reflecting use rates which are slightly higher than the currently registered maximum use rate of the EC formulation of methyl parathion on wheat) indicate that the currently established tolerance for residues of methyl parathion in/on wheat grain should be increased from 1 ppm to 4 ppm. Tolerances for residues of methyl parathion should be established in wheat bran, shorts and germ at 8 ppm

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based upon the reassessed tolerance on wheat grain (4 ppm) and the concentration factor of 2x. In addition, these data should be used to establish tolerances for residues of methyl parathion in barley bran and rye bran. Once new wheat grain data are submitted, the need/level for tolerances for residues of methyl parathion in wheat bran, wheat shorts, wheat germ, barley bran, and rye bran should be readdressed.

OPPTS GLN 860.1480: Magnitude of the Residue in Meat, Milk, Poultry, and Eggs

Reregistration requirements for magnitude of the residue in meat, milk, poultry, and eggs remain outstanding. No tolerances have been established for residues of methyl parathion in animal commodities, although tolerances have been established on numerous animal feed items.

For the required feeding studies, ruminants and poultry should be dosed orally at 1x, 3x, and 10x the maximum expected dietary burden for a minimum of 28 days or until residues plateau in milk and eggs if they have not done so by 28 days. Animals should be sacrificed within 24 hours of receiving the final dose. Milk and eggs should be collected through the study, and samples of muscle, fat, liver, and kidney (ruminants only) should be collected at sacrifice for analysis. Samples should be analyzed for residues of methyl parathion, methyl paraoxon, *p*-nitrophenol, and amino-paraoxon-methyl. In addition, these studies must be supported by data depicting the storage stability of methyl parathion residues of concern in animal commodities. For additional guidance, the registrants should refer to OPPTS GLN. 860.1480.

Based upon the established or reassessed tolerances for residues of methyl parathion in/on animal feed items excluding field pea vines and hay (inclusion of which would lead to substantially higher dietary burden calculations for cattle; registrants have been given the option to prohibit use of methyl parathion on field peas), the calculated maximum theoretical dietary burdens for livestock are presented below:

Feed Commodity	% Dry Matter [a]	% Diet [a]	Tolerance (ppm) [b]	Dietary Contribution (ppm) [c]
Beef Cattle				
corn stover	83	25	30	9.0
corn forage	40	40	20	20.0
wheat grain	89	35	4	1.6
TOTAL BURDEN		100		**30.6**
Dairy Cattle				
corn stover	83	15	30	5.4
corn forage	40	50	20	25.0
wheat grain	89	35	4	1.6
TOTAL BURDEN		100		**32.0**
Poultry				
wheat grain	NA	80	4	3.2
rice hulls	NA	15	12	1.8
sunflower seed meal	NA	5	0.2	0.01
TOTAL BURDEN		100		**5.0**

[a] Table 1, OPPTS GLN 860.1000.
[b] Established or reassessed tolerances from Table C.
[c] Contribution = [tolerance / %DM (if cattle)] X % diet).

OPPTS GLN 860.1400: Magnitude of the Residue in Water, Fish, and Irrigated Crops

Methyl parathion is not being support under reregistration for direct use on potable water or aquatic food and feed crops; therefore, no residue chemistry data are required under these guideline topics.

OPPTS GLN 860.1460: Magnitude of the Residue in Food-Handling Establishments

Methyl parathion is not being support under reregistration for use in food-handling establishments; therefore, no residue chemistry data are required under this guideline topic.

OPPTS GLN 860.1850: Confined Accumulation in Rotational Crops

A new confined rotational crop study is required. A confined rotational crop study (MRID 43127609) is currently under review (D199712).

OPPTS GLN 860.1900: Field Accumulation in Rotational Crops

The need for field rotational crop data will be determined once the new confined rotational crop data (MRID 43127609) are reviewed (D199712).

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TABLE A. FOOD/FEED USE PATTERNS SUBJECT TO REREGISTRATION FOR METHYL PARATHION (CASE 0153).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Alfalfa					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29] 5 lb/gal EC [NV97000100][c]	1 lb/A	2 per cutting	Not Specified (NS)	A 15-day PHI and PGI are specified. Maximum application rate of 0.38 lb ai/A/application is specified for CA and NV only (except SLN NV97000100). Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Broadcast application Aerial equipment only	3 lb/gal EC [4787-19]	0.25 lb/A	2	7	A 15-day PHI is specified. Do not apply more than 0.5 lb ai/A/cutting. Do not apply more than 0.14 lb ai/A/cutting in CA and NV. Apply in a minimum of 2 gal/A of water.
Alfalfa grown for seed only					
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	1 lb/A	NS	NS	A 15-day PHI is specified. Apply in a minimum of 2 gal/A of water using aerial equipment.
Apples and pears					
Broadcast application Ground equipment	2 lb/gal Mcap [4581-292]	2 lb/A	5	7	For applications < 1.0 lb ai/A/application, a 14-day PHI is specified; a 21-day PHI is specified for application rates of 1.0 to 2.0 lb ai/A/application. A 30-day PHI is specified in CA. Apply in a minimum of 2 gal/A of water using aerial equipment.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Barley					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.75 lb/A	6	NS	A 15-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
	2 lb/gal Mcap [4581-292]	0.75 lb/A	NS	NS	A 15-day PHI is specified. A maximum seasonal application rate is not specified. Apply in a minimum of 2 gal/A of water using aerial equipment.
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.25 lb/A	6	7	A 15-day PHI is specified. Apply in a minimum of 2 gal/A of water.
Beans (dry and green)					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 15-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Beans, dry, southern peas					
Broadcast application Ground equipment	2 lb/gal Mcap [4581-292]	1 lb/A	NS	3	A 15-day PHI is specified. Apply in a minimum of 2 gal/A of water using aerial equipment.
Beans, succulent					
Broadcast application Ground equipment	2 lb/gal Mcap [4581-292]	1 lb/A	3	7	A 3-day PHI is specified. A 15-day PHI is specified in CA. Apply in a minimum of 2 gal/A of water using aerial equipment.
	2 lb/gal Mcap [MN97000100] [WI95000500]	0.75 lb/A	4	4	For applications <0.5 lb ai/A/application, a 3-day PHI is specified; a 7-day PHI is specified for rates of 0.5-0.75 lb ai/A/application.
	2 lb/gal Mcap [MO95000100]	0.5 lb/A	6	4	

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Broccoli					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 7-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Brussels sprouts					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 7-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Cabbage					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 10-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Canola (rapeseed)					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29] 5 lb/gal EC [WA97001800][c]	0.5 lb/A	2	NS	A 28-day PHI is specified. Do not graze treated fields or feed treated forage or threshings to livestock. Apply in a minimum of 3 gal/A of water using ground or aerial equipment.
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.25 lb/A	NS	NS	A 28-day PHI is specified. Do not graze treated fields or feed treated forage or threshings to livestock. Apply in a minimum of 3 gal/A of water.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Carrots					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1 lb/A	6	NS	A 15-day PHI is specified. Do not feed tops. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Cauliflower					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 7-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Celery					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1 lb/A	2	NS	A 15-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Cherries					
Broadcast applications Ground and aerial equipment	2 lb/gal Mcap [4581-292]	1.5 lb/A	6	7	A 14-day PHI is specified. Do not use in CA or in areas where annual rainfall is <25 inches. Do not apply from bloom to petal fall. Do not graze or feed cover crops from treated orchards to livestock. Apply in a minimum of 2 gal/A of water using aerial equipment.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Collards					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 10-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Corn					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.5 lb/A	NS	NS	A 12-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.2 lb/A	6	5	A 12-day PHI is specified. Apply in a minimum of 2 gal/A of water.
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	1 lb/A	NS	10	A 3-day PHI is specified for sweet corn. A 12-day PHI is specified for field corn and for grazing. Apply aerially in a minimum of 1 gal/A.
	2 lb/gal Mcap [IN880002]	0.75		NS	A PHI and maximum seasonal use rate are not specified.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Cotton					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	3 lb/A	NS	4-5	A 1-day PHI is specified if using a mechanical picker. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
ULV aerial application	4 lb/gal EC [TX97000600]	3 lb/A	NS	4-5	A 1-day PHI is specified if using a mechanical picker. A maximum seasonal application rate is not specified. Dilute in 1 quart of refined vegetable oil (such as cottonseed).
ULV aerial application	4 lb/gal EC [TX97000900][d]	1 lb/A	NS	3-7	A PHI is not specified. A maximum seasonal application rate is not specified. Dilute in 1 quart of refined vegetable oil (such as cottonseed).
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.6 lb/A	6	7	A 7-day PHI is specified. Apply in a minimum of 2 gal/A of water.
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	1.0 lb/A	NS	NS	A 7-day PHI is specified. Apply in a minimum of 2 gal/A of water using aerial equipment.
ULV aerial application		0.5 lb/A	NS	NS	Cotton may be machine-harvested any time after application.
Grapes					
Post-harvest, dormant, delayed dormant, broadcast foliar Ground and aerial equipment	2 lb/gal Mcap [4581-292]	3 lb/A	4	7	A 40-day PHI is specified. A maximum of 2 applications may be made between bloom and harvest. Apply in a minimum of 2 gal/A of water using aerial equipment.
Grass (forage)					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.75 lb/A	6	NS	A 15-day PHI and PGI are specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Kale					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 10-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Lettuce					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1 lb/A	6	NS	A 21-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Lentils					
Broadcast application Aerial equipment	2 lb/gal Mcap [ID84001000] [WA82005400]	0.5 lb/A	NS	NS	A 15-day PHI is specified. A maximum seasonal application rate is not specified. Do not harvest for forage or graze treated areas. Apply in a minimum of 5 gal/A of water using aerial equipment.
Mustard Greens					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 10-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1.5 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.

(continued; footnotes follow)

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Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Nectarines, Peaches, Plums, and Prunes					
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	1.5 lb/A	6	7	PHIs: 21 days in CA 14 days in areas with <25 inches of rain/year. In areas with >25 inches of rain/year: 21 days for rates 0.5-0.75 lb ai/A/application 28 days for rates >0.75 lb ai/A/application Do not apply between bloom and petal fall. Do not exceed 4 application between petal fall and harvest, or 6 applications/year. Do not graze or feed cover crops from treated orchards to livestock. Apply in a minimum of 2 gal/A of water using aerial equipment.
Oats					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.75 lb/A	6	NS	A 15-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
	2 lb/gal Mcap [4581-292]	0.75 lb/A	NS	NS	A 15-day PHI is specified. Apply in a minimum of 2 gal/A of water using aerial equipment.
Onions					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.5 lb/A	6	NS	A 15-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	0.5 lb/A	NS	NS	A 15-day PHI is specified. Apply in minimum of 2 gal/A of water using aerial equipment.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Peas					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 10-day PHI is specified; a 15-day PHI is specified for applications rates of 0.5-1 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
	4 lb/gal EC [ID97001300] [OR97002000] [WA97003400]	1 lb/A	NS	NS	For applications <0.5 lb ai/A/application, a 10-day PHI is specified; a 15-day PHI is specified for applications of 0.5-1.0 lb ai/A/application.
	2 lb/gal Mcap [4581-292]	0.5 lb/A	2	NS	A 15-day PHI is specified. A 10-day PHI is specified for pods. Apply in a minimum of 2 gal/A of water using aerial equipment.
Pecans					
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	2 lb/A	8	14	A PHI is <u>not</u> specified. Do not apply after shuck split. Do not apply more than 64 lb ai/A/season. Do not graze or feed cover crops within 15 days after application. Apply in minimum of 2 gal/A of water using aerial equipment.
Potatoes					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1.5 lb/A	6	NS	A 6-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	1.5 lb/A	NS	NS	A 5-day PHI is specified. Apply in a minimum of 2 gal/A of water using aerial equipment.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Rice					
Broadcast application Aerial equipment only	4 lb/gal EC [67760-29]	0.75 lb/A	6	NS	A 15-day PHI is specified. Do not use where shrimp, crabs, or crayfish are important resources. Apply in minimum of 2 gal/A of water using aerial equipment.
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	0.75 lb/A	NS	NS	A 15-day PHI is specified. Apply in minimum of 2 gal/A of water using aerial equipment.
Rye					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.75 lb/A	6	NS	A 15-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Sorghum					
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.20 lb/A	6	7	A 21-day PHI is specified. Apply in a minimum of 2 gal/A of water.
Soybeans					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1 lb/A	2	NS	A 14-day PHI and 20-day PGI are specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
	2 lb/gal Mcap [4581-292]	1 lb/A	2	NS	A 20-day PHI is specified. Apply in a minimum of 2 gal/A of water using aerial equipment.
	2 lb/gal Mcap [IN88000700]	0.5	2	7	A 20-day PHI is specified.
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.20 lb/A	2	7	A 20-day PHI is specified. Apply in a minimum of 2 gal/A of water.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Spinach					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1 lb/A	6	NS	For applications <0.5 lb ai/A/application, a 15-day PHI is specified; a 21-day PHI is specified for applications rates of 0.5-1 lb ai/A/application. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Sugar Beets					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.38 lb/A	6	NS	A 20-day PHI is specified; if tops are to be fed to animals, a 60-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Sunflowers					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	1	3	5	A 30-day PHI is specified. Do not feed seeds to birds. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.33 lb/A	3	5	A 30-day PHI is specified. Do not feed seed to birds. Apply in a minimum of 2 gal/A of water.
Sweet potatoes					
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [AL97000300] [LA96000100] [MS97000600]	0.75 lb/A	8	NS	A 5-day PHI is specified.
Tomatoes					
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [4581-292]	1 lb/A	NS	NS	A 15-day PHI is specified. Apply in minimum of 2 gal/A of water using aerial equipment.

(continued; footnotes follow)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Turnips					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.75 lb/A	6	NS	A 15-day PHI is specified; if tops are to be used for food or feed, a 21-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
Walnuts					
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [CA97002400]	2 lb/A	4	21	PHI is 14-days. Aerial applications must be made in a minimum of 10 gal of spray volume/A.
Wheat					
Broadcast application Ground and aerial equipment	4 lb/gal EC [67760-29]	0.75 lb/A	6	NS	A 15-day PHI is specified. Apply in a minimum of 3 gal/A of water using ground equipment or 1 gal/A of water using aerial equipment.
	2 lb/gal Mcap [4581-292]	0.75 lb/A	NS	NS	A 15-day PHI is specified. Apply in minimum of 2 gal/A of water using aerial equipment.
	2 lb/gal Mcap [NM820004]	0.5 lb/A	NS	NS	A 15-day PHI/PGI is specified. A maximum seasonal application rate is not specified.
Broadcast application Aerial equipment	3 lb/gal EC [4787-19]	0.25 lb/A	6	7	A 15-day PHI is specified. Apply in a minimum of 2 gal/A of water.
Yams					
Broadcast application Ground and aerial equipment	2 lb/gal Mcap [AL97000300] [LA96000100] [MS97000600]	0.75 lb/A	8	NS	A 5-day PHI is specified.

[a] Maximum number of applications at the maximum single application rate. [b] All Labels, except 4581-292, prohibit applications through any type of irrigation system. The labels for EPA Reg. No. 4787-19 specifies a 3-day reentry interval (REI) for all crops except corn, where the REI is 6 days. The labels for EPA Reg. Nos. 4581-292, and 67760-29 specify REIs of 48 hours. [c] Under EPA Reg. No. 2935-527. [d] Under EPA Reg. No. 2935-528.

Table B. Residue Chemistry Science Assessments for Reregistration of Methyl Parathion.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
860.1200: Directions for Use	N/A	Yes[2]	See Table A.
860.1300: Plant Metabolism	N/A	Yes[3]	41001401 41001403 41001404 42914601[4]
860.1300: Animal Metabolism	N/A	Yes[5]	**00128039** 41001405 41001406
860.1340: Residue Analytical Methods			
- Plant commodities	N/A	Yes[6]	**00003724 00035330 00073196 00080018 00085260 00085261 00085262 00101100 00101122 00101124 00101213 00102312 00102367 00102376 00102414 00113173 05004211** 42241601[7] 42281001[7] 42307901[7] 42307902[7] 42690001[8] 42717601[9] 42717602[9] 42844601[10] 42844602[10] 42844603[10] 42844604[10]
- Animal commodities	N/A	Yes[11]	**00047726 00105217**
860.1360: Multiresidue Methods	N/A	No	
860.1380: Storage Stability Data	N/A	Yes[12]	**00102314** 42230901[7] 42291901[7] 42307001[7] 43685601[13] 43758801[14] 44159702[14]
860.1500: Crop Field Trials			
Root and Tuber Vegetables Group			
- Beets, garden, roots	1 [§180.121(a)]	No[15]	
- Carrots	1 [§180.121(a)]	No	41395105
- Parsnips	1 [§180.121(a)]	No[15]	**00101095 00102356**
- Potatoes	0.1 (N) [§180.121(a)]	Yes[16]	**00101095 00102356** 41438102

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Radishes	1 [§180.121(a)]	No[15]	**00101095 00102356**
- Rutabagas	1 [§180.121(a)]	No[15]	
- Sugar beet roots	0.1 (N) [§180.121(a)]	No[17]	**00101095 00102418** 41379306
- Sweet potatoes	0.1 (N) [§180.121(a)]	Yes[18]	**00031669**
- Turnips roots	1 [§180.121(a)]	No[19]	**00102418** 41717806
- Yams	None	No[20]	
Leaves of Root and Tuber Vegetables Group			
- Beets garden greens	1 [§180.121(a)]	No[15]	
- Parsnip greens	1 [§180.121(a)]	No[15]	
- Radish tops	1 [§180.121(a)]	No[15]	
- Rutabaga tops	1 [§180.121(a)]	No[15]	
- Sugar beet tops	0.1 (N) [§180.121(a)]	Yes[21]	**00101095 00102418** 41379306
- Turnip greens	1 [§180.121(a)]	Yes[22]	**00102418** 41717806
Bulb Vegetables (*Allium spp.*) Group			
- Garlic	1 [§180.121(a)]	No[15]	
- Onions	1 [§180.121(a)]	Yes[23]	**00102356** 41395104 41596203

(continued; footnotes follow)

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Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Leafy Vegetables (Except Brassica Vegetables) Group			
- Celery	1 [§180.121(a)]	No[24]	41717802
- Endive	1 [§180.121(a)]	No[15]	
- Lettuce	1 [§180.121(a)]	No[25]	41379302 41596204
- Parsley	1 [§180.121(b)]	No[15]	
- Spinach	1 [§180.121(a)]	No[26]	41359906
- Swiss Chard	1 [§180.121(a)]	No[15]	
Brassica (Cole) Leafy Vegetables Group	1.0 [§180.121(b)]	No[27]	
- Broccoli	1 [§180.121(a)]	No	41379305
- Brussels Sprouts	1 [§180.121(a)]	No	
- Cabbage	1 [§180.121(a)]	No	**00061199** 41379304 42844602[10]
- Cauliflower	1 [§180.121(a)]	No	**00102356**
- Collards	1 [§180.121(a)]	No	
- Kale	1 [§180.121(a)]	No	
- Kohlrabi	1 [§180.121(a)]	No	
- Mustard Greens	1 [§180.121(a)]	No	41359901

(continued; footnotes follow)

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Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Legume Vegetables (Succulent or Dried) Group			
- Beans succulent and dried	1 [§180.121(a)]	Yes[28]	**00009821 00009822 00031669 00102417 00102370 00137986** 41438101 41457901 41517102 41560005 41596206
- Guar beans	0.2 [§180.121(b)]	No[15]	**00161146 00161188**
- Lentils	1 [§180.121(b)]	No[29]	42307902[7]
- Peas succulent and dried	1 [§180.121(a)]	No[30]	**00102417** 41596207 42241601[7]
- Soybeans	0.1 [§180.121(a)]	Yes[31]	**00101100 00102314 00102367** 41379303
Foliage of Legume Vegetables Group			
- Beans forage and hay	None	Yes[32]	41517102
- Peas vines and hay	1 (forage) [§180.121(a)]	No[33]	41596207 42241601[7]
- Soybeans forage and hay	1 (hay) [§180.121(a)]	Yes[34]	**00101100 00102356 00102367** 41560003
Fruiting Vegetables (Except Cucurbits) Group			
- Eggplant	1 [§180.121(a)]	No[15]	
- Peppers	1 [§180.121(a)]	No[15]	**00102418**
- Tomatoes	1 [§180.121(a)]	No[35]	**00102292 00102415 00102417** 42844604[10]
Cucurbit Vegetables Group			
- Cucumbers	1 [§180.121(a)]	No[15]	**00102356**
- Melons	1 [§180.121(a)]	No[15]	**00102356**
- Pumpkins	1 [§180.121(a)]	No[15]	
- Squash (summer/winter)	1 [§180.121(a)]	No[15]	**00102356**

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Citrus Fruits Group	1 [§180.121(a)]	No[15]	
Pome Fruits Group			
- Apples	1 [§180.121(a)]	Yes[36]	**00047726 00051649 00086695 00102355** 42844601[10]
- Pears	1 [§180.121(a)]	Yes[37]	**00051649**
- Quince	1 [§180.121(a)]	No[15]	
Stone Fruits Group			
- Apricots	1 [§180.121(a)]	No[15]	**00102356**
- Cherries	1 [§180.121(a)]	Yes[38]	**00102356**
- Nectarines	1 [§180.121(a)]	No[39]	
- Peaches	1 [§180.121(a)]	No[40]	**00047726 00102356** 44159901[14]
- Plums (fresh prunes)	1 [§180.121(a)]	Yes[41]	**00102356**
Berries Group			
- Blackberries	1 [§180.121(a)]	No[15]	
- Blueberries (huckleberries)	1 [§180.121(a)]	No[15]	
- Boysenberries	1 [§180.121(a)]	No[15]	
- Currants	1 [§180.121(a)]	No[15]	
- Dewberries	1 [§180.121(a)]	No[15]	
- Gooseberries	1 [§180.121(a)]	No[15]	
- Loganberries	1 [§180.121(a)]	No[15]	

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Raspberries	1 [§180.121(a)]	No[15]	
- Youngberries	1 [§180.121(a)]	No[15]	
Tree Nuts Group			
- Almonds	0.1 (N) [§180.121(a)]	Yes[42]	**00102418**
- Filberts	0.1 (N) [§180.121(a)]	No[15]	
- Pecans	0.1 (N) [§180.121(a)]	Yes[43]	
- Walnuts	0.1 (N) [§180.121(a)]	No[44]	44159701[14]
Cereal Grains Group			
- Barley	1 [§180.121(a)]	No[45]	**00051649 00072376 00086695**
- Corn	1 [§180.121(a)]	No[46]	**00051649 00085259 00085260 00085261** 41560002 41717803 41717804 41717805
- Oats	1 [§180.121(a)]	No[45]	**00051649 00072376 00086695**
- Rice	1 [§180.121(a)]	No[47]	**00051649** 41379307 41560004
- Rye	0.5 [§180.319]	No[45]	**00101096**
- Sorghum	0.1 (N) [§180.121(a)]	Yes[48]	**00053436 00081419 00101098 00101213** 41517103
- Wheat	1 [§180.121(a)]	Yes[49]	**00051649 00072376 00086695** 41560001 41596209

(continued; footnotes follow)

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Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Forage Fodder and Straw of Cereal Grains			
- Barley hay and straw	None	No[45, 52]	
- Corn forage and stover	1 (forage) [§180.121(a)]	No[50]	**00051649 00085261** 41717803 41717805 42307901[7]
- Oat forage, hay and straw	None	No[45, 52]	
- Rice straw	None	Yes[51]	41379307
- Rye forage and straw	None	No[45, 52]	
- Sorghum forage and stover	3 (forage and fodder) [§180.121(a)]	Yes[48]	**00053436 00081419 00101098 00101213** 41517103
- Wheat forage, hay and straw	None	Yes[52]	**00051649 00072376** 41596209
Grass Forage Fodder and Hay Group			
- Grass forage and hay	1 (forage) [§180.121(a)]	Yes[53]	**00102417** 41359902 41359903 41359905 43479501[14]
Non-grass Animal Feeds			
- Alfalfa (fresh)	1.25 [§180.121(a)]	Yes[54]	**00035330 00035332 00035890 00047726 00072376 00101221 00102356 00104198** 41517101
- Alfalfa hay	5 [§180.121(a)]	Yes[54]	**00035330 00035332 00035890 00047726 00072376 00101221 00102356 00104198** 41517101
- Clover	1 [§180.121(a)]	No[15]	**00102356 00104198** 41439601
- Trefoil forage	1.25 [§180.121(b)]	No[15]	
- Trefoil hay	5 [§180.121(b)]	No[15]	
- Vetch forage and hay	1 [§180.121(a)]	No[15]	

(continued; footnotes follow)

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Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Miscellaneous Commodities			
- Artichokes	1 [§180.121(a)]	No[55]	**00102415** 41717801
- Aspirated Grain Fractions	None	Yes[56]	
- Avocados	1 [§180.121(a)]	No[15]	
- Cottonseed	0.75 [§180.121(a)]	Yes[57]	**00008516 00080018 00086695 00099011 00101100 00101122 00101226 00101489 00102291 00102314 00102362 00102376 00105217 00113173** 41395103 41457904
- Cotton, gin byproducts	None	Yes[55]	
- Cranberries	1 [§180.121(a)]	No[15]	
- Dates	1 [§180.121(a)]	No[15]	
- Figs	1 [§180.121(a)]	No[15]	
- Grapes	1 [§180.121(a)]	No[58]	**00102417** 41457902 42844603[10]
- Guavas	1 [§180.121(a)]	No[15]	
- Hops	1 [§180.121(a)]	Yes[59]	
- Mangoes	1 [§180.121(a)]	No[15]	
- Mustard seed	0.2 [§180.121(a)]	No[15]	**00003724**
- Okra	1 [§180.121(a)]	No[15]	
- Olives	1 [§180.121(a)]	No[15]	
- Peanuts	1 [§180.121(a)]	Yes[60]	**00102418**

(continued; footnotes follow)

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Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Pineapples	1 [§180.121(a)]	No[15]	
- Rape seed	0.2 [§180.121(a)]	Yes[61]	**00003724** 42717601[62]
- Safflower seed	0.1 (N) [§180.121(a)]	No[15]	
- Strawberries	1 [§180.121(a)]	No[15]	**00102418**
- Sugarcane	0.1 (N) [§180.121(a)]	No[15]	
- Sunflower seed	0.2 [§180.121(a)]	No	**00031669 00102312** 41359904
- Tobacco	None	No[15]	**00102356**
860.1520: Processed Food/Feed			
- Apples	None	No	42479101[63]
- Barley	None	No[64]	
- Citrus	None	No[15]	
- Corn (field)	None	No	41717804
- Cottonseed	None	No	**00101122 00102362** 41596201
- Figs	None	No[15]	
- Grapes	None	No	41457903
- Oats	None	No[64]	
- Olives	None	No[15]	
- Peanuts	None	Yes[60]	
- Pineapple	None	No[15]	
- Plums/prunes	None	Yes[65]	
- Potato	None	No	41438102
- Rapeseed	None	No	42717602[62]
- Rice	None	No	**00051649** 41596205
- Rye	None	No[64]	
- Safflower seed	None	No[15]	
- Sorghum	None	No[66]	

(continued; footnotes follow)

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Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Soybeans	None	No	41517104 42690001[8]
- Sugar beets	None	No	41379306
- Sugarcane	None	No[15]	
- Sunflower seed	None	Yes[67]	
- Tomatoes	None	No	42281001[7]
- Wheat	None	No	41596209
860.1480: Meat Milk Poultry Eggs			
- Milk and the Fat Meat and Meat Byproducts of Cattle Goats Hogs Horses and Sheep	None	Yes[68]	
- Eggs and the Fat Meat and Meat Byproducts of Poultry	None	Yes[68]	
860.1400: Water Fish and Irrigated Crops	None	N/A	
860.1460: Food Handling	None	N/A	
860.1850: Confined Rotational Crops	N/A	Yes[69]	41596301
860.1900: Field Rotational Crops	None	N/A[69]	

1. **Bolded** references were reviewed in the Residue Chemistry Chapter of the Methyl Parathion Reregistration Standard dated 11/8/85; non-bolded references were reviewed in the Residue Chemistry Chapter of the Methyl Parathion Reregistration Standard Update dated 11/24/92. All other references were reviewed as noted.

2. *General Directions for Use Requirements:* Registrants must amend all end-use product labels to specify a minimum spray volume of 2 gal/A for vegetable crops and 10 gal/A for orchard crops unless they specifically wish to support ULV applications of methyl parathion to crops (other than cotton).

   Specific Directions for Use Requirements: Numerous crop-specific and/or formulation-specific label amendments are required to support the reregistration of methyl parathion. These specific label amendments are detailed in this table (Table B) under individual crop listings.

3. A new lettuce metabolism study is required.

4. CBRS No. 12731, DP Barcode D195379, 5/6/94, R. Perfetti.

5. The following additional data are required to validate the experimental methods for the poultry and ruminant metabolism studies: (i) the in-life portion of the study, including total feeds consumed to determine theoretical dietary intake of methyl parathion, as ppm, in the feed; (ii) the storage intervals for

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goat tissue, milk, hen tissue, and egg samples; and (iii) for the ruminant study only, the specific fraction or matrix used for Soxhlet extraction, acid hydrolysis, and enzyme hydrolysis; flow charts must be provided to indicate at what point these procedures were used.

6. The proposed enforcement method employed to determine methyl parathion and methyl paraoxon in plant commodities must undergo an independent laboratory validation at which time the Agency will perform a method trial on the procedure (CBTS No. 16714, DP Barcode D221796, F. Griffith, 2/29/96). If additional metabolites of concern are identified in the outstanding lettuce metabolism study, additional analytical methods may be required.

7. CBRS Nos. 9854, 9856, 9857, 9958, 9967, and 10,074; DP Barcodes D177993, D177987, D177985, D178858, D178854, and D179067; 12/18/92; R. Perfetti.

8. CBRS No. 11616, DP Barcode D189381, 9/10/93, R. Perfetti.

9. CBRS No. 12024, DP Barcode D192316, 9/7/93, S. Knizner.

10. CBRS No. 12454, DP Barcode D194342, 1/4/94, R. Perfetti.

11. In conjunction with the ruminant and poultry feeding studies, the registrants must provide data validating the analytical method(s) used for determining methyl parathion, methyl paraoxon, *p*-nitrophenol, and amino-paraoxon-methyl in meat, milk, poultry, and eggs. If the feeding studies indicate that tolerances are necessary for residues in animal commodities, then the registrants must propose an enforcement method for determining residues of methyl parathion in animal commodities.

12. Data depicting the storage stability of methyl parathion residues of concern in/on a representative fruit are required. [Note: Peach storage stability data (MRID 44413301) and grape storage stability data (MRID 44413403) are currently under review (D245124). A preliminary assessment of these data indicates that it is unlikely that a thorough review of these data will precipitate the need to increase exposure estimates used in the dietary risk assessment for methyl parathion.]

    Data depicting the storage stability of methyl parathion residues of concern in animal commodities are required in conjunction with the ruminant and poultry feeding studies.

13. DP Barcode D216966, 9/24/97, B. Cropp-Kohlligian.

14. DP Barcodes D225636, D225672, D235833, D235837; 9/19/97, B. Cropp-Kohlligian.

15. According to the 90-Day Responses submitted by the basic producers to the most recently issued Methyl Parathion DCI (4/10/97), the use of methyl parathion on this commodity is not being supported under reregistration. Hence, no residue data are required and the associated tolerance(s) should be revoked.

16. The available data are adequate to support the use of the EC formulation of methyl parathion on potatoes and indicate that the currently established tolerance for residues of methyl parathion in/on potatoes should be lowered from 0.1 ppm to 0.05 ppm.

    No data are available to support the use of the Mcap formulation of methyl parathion on potatoes. Data are

required depicting methyl parathion residues of concern in/on potatoes harvested 5 days following the last of multiple foliar applications of the Mcap formulation of methyl parathion at 1.5 lb ai/A/application. Data must reflect maximum use rates and the registrant must amend the Mcap product label to specify a maximum seasonal use rate supported by the residue data. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required. [Note: In their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4//10/97), the registrant (Elf Atochem) committed to submit data to support the use of the Mcap formulation of methyl parathion on potatoes. The proposed maximum label use rate is 6 applications/season at 1.5 lb ai/A/application with a 5-day PHI.]

17. The available data are adequate and support lowering the tolerance for residues of methyl parathion in/on sugar beet roots from 0.1 ppm to 0.05 ppm.

18. Data are required depicting methyl parathion residues of concern in/on sweet potatoes harvested 5 days following the last of eight foliar applications of the Mcap formulation of methyl parathion at 0.75 lb ai/A/application. Data must reflect maximum use rates and the registrant must amend the Mcap product label to specify a maximum seasonal use rate supported by the residue data. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required.

    Alternatively, potato field trial data generated using the Mcap formulation of methyl parathion may be translated to sweet potatoes. Available potato field trial data generated with an EC formulation of methyl parathion indicate that the tolerance for residues of methyl parathion in/on sweet potatoes should be lowered from 0.1 ppm to 0.05 ppm.

19. The available data are adequate and support lowering the tolerance for residues of methyl parathion in/on turnip roots from 1 ppm to 0.05 ppm.

20. No residue data are required. Furthermore, since a tolerance for residues of methyl parathion is currently established in/on sweet potatoes, a tolerance for residues of methyl parathion in/on yams is not required. [Separate tolerances are not required for sweet potatoes and yams as specified under 40 CFR §180.1(h).]

21. It is not practically enforceable to establish a 60-day PHI on sugar beet tops when a 20-day PHI is established on sugar beet roots. Residue data depicting methyl parathion residues of concern in/on sugar beet tops harvested 20 days following the last of 6 foliar applications of an EC formulation of methyl parathion at 0.38 lb ai/A/application are required. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required.

    NOTE: Based on available turnip top data, residues of methyl parathion in/on sugar beet tops are likely to exceed the currently established tolerance in/on sugar beet tops (0.1 ppm) resulting from the currently registered maximum use rate of methyl parathion on sugar beets. Residues of methyl parathion in/on turnip tops harvested 21 days following the last of 6 foliar applications of methyl parathion at 0.8 lb ai/A/application were 0.05 ppm - 1.82 ppm and 0.05 ppm - 3.83 ppm in/on turnip tops harvested 7 days following 4 foliar applications of methyl parathion at 0.8 lb ai/A/application plus 2 foliar applications at 0.5 lb ai/A/application. Based on the translation of the turnip top data to sugar beet tops, the currently established tolerance for residues of methyl parathion in/on sugar beet tops should be increased from 0.1 ppm to 2 ppm.

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22. It is not practically enforceable to establish a 21-day PHI on turnip tops when a 15-day PHI is established on turnip roots. Residue data depicting methyl parathion residues of concern in/on turnip tops harvested 15 days after the last of 6 foliar applications of the EC formulation of methyl parathion at 0.75 lb ai/A/application are required. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required.

    NOTE: Based on available turnip top data, residues of methyl parathion in/on turnip tops are likely to exceed the currently established tolerance (1 ppm) in/on turnip greens resulting from the currently registered maximum use rate of methyl parathion on turnips. Residues of methyl parathion in/on turnip tops harvested 21 days following the last of 6 foliar applications of methyl parathion at 0.8 lb ai/A/application were 0.05 ppm - 1.82 ppm and 0.05 ppm - 3.83 ppm in/on turnip tops harvested 7 days following 4 foliar applications of methyl parathion at 0.8 lb ai/A/application plus 2 foliar applications at 0.5 lb ai/A/application. Based on these data, the currently established tolerance for residues of methyl parathion in/on turnip greens should be increased from 1 ppm to 4 ppm.

23. The available data are adequate to support the use of the EC formulation of methyl parathion on onions and indicate that the currently established tolerance for residues of methyl parathion in/on onions (1 ppm) is appropriate.

    No data are available to support the use of the Mcap formulation of methyl parathion on onions. Data are required depicting methyl parathion residues of concern in/on onions harvested 15 days following multiple foliar applications of the Mcap formulation of methyl parathion at 0.5 lb ai/A/application. Data must reflect maximum use rates and the registrant must amend the Mcap product label to specify a maximum seasonal use rate supported by the residue data. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required.

24. Available data are adequate and indicate that the currently established tolerance for residues of methyl parathion in/on celery should be increased from 1 ppm to 5 ppm.

25. Available data are adequate and indicate that the currently established tolerance for residues of methyl parathion in/on lettuce should be increased from 1 ppm to 2 ppm.

26. Available data are adequate and indicate that the currently established tolerance for residues of methyl parathion in/on spinach should be lowered from 1 ppm to 0.5 ppm.

27. Adequate broccoli, cabbage, and mustard green data are available and support the 1.0 ppm tolerance in/on *Brassica* Vegetables Crop Group. Individual tolerances for members of this group should be revoked.

28. The available dried bean residue data are adequate, provided the registrant amends the Mcap product label to specify a maximum of six applications to dried beans per season along with the currently specified 15-day PHI. [Note: In their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4/10/97), the registrant (Elf Atochem) proposed a maximum use rate on dried beans at 1 lb ai/A/application with a minimum retreatment interval of 3 days and a PHI of 15 days. A maximum of 6 applications/season is proposed.] A separate tolerance should be established for residues of methyl parathion in/on dried bean seeds; the available data would support a tolerance of 0.05 ppm for residues of methyl parathion in/on beans, dried seed.

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The available succulent bean residue data are adequate, provided the registrant amends the Mcap product label to specify a minimum PHI of 7 days. [Note: In their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4/10/97), the registrant (Elf Atochem) proposed a maximum use rate on succulent beans at 1 lb ai/A/application with a minimum retreatment interval of 7 days and a PHI of 7 days. A maximum of 6 applications/season is proposed.] A separate tolerance should be established for residues of methyl parathion in/on succulent beans; the available data would support a tolerance of 1 ppm for residues of methyl parathion in/on succulent beans.

The available succulent bean residue data are <u>not</u> adequate to support existing Special Local Needs (SLN) registrations in MN (MN97000100), WI (WI95000500), and MO (MO95000100) for the use of the Mcap formulation of methyl parathion on succulent beans at 0.5 - 0.75 lb ai/A/application with a PHI of 3-days for applications <0.5 lb ai/A/application and a PHI of 7-days for applications at 0.5 - 0.75 lb ai/A/application. Registrants must either: (i) provide succulent bean field trial data conducted at the maximum use rates to support these SLN registrations, (ii) amend the subject SLN labels to include a minimum PHI of 7-days, or (iii) cancel the subject the SLN registrations.

29. Provided the registrant amends the Mcap product label to specify a maximum of 3 applications per season at 0.5 lb ai/A/application to lentils with a 14-day PHI, the available data are adequate and support lowering the tolerance for residues of methyl parathion in/on lentil seeds from 1 ppm to 0.05 ppm. [NOTE: In their 90-Day Response to the Methyl Parathion DCI (4/10/97), the registrant (Elf Atochem) committed to include lentils on their Mcap product label with a maximum use rate of 3 applications/season at 0.5 lb ai/A/application with an 11-day minimum retreatment interval and a PHI of 14 days. Once this use is included on the Section 3 Registration, existing 24© Registrations in ID (ID84001000) and WA (WA82005400) would no longer be needed and should be canceled.]

30. The available pea field trial data (succulent and dried) are adequate and support the establishment of separate tolerances for residues of methyl parathion in/on dried pea seeds at 0.5 ppm and in/on succulent peas at 1 ppm.

[Note: In their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4/10/97), the registrant (Elf Atochem) committed to amend their Mcap product label to specify a 15-day PHI and to prohibit use on field peas (Austrian winter peas). Although pea field trial data were not submitted to support the reregistration of the Mcap formulation of methyl parathion, available pea field trial data that were conducted using the EC formulation are sufficient since the proposed maximum use rate for the Mcap formulation of methyl parathion on peas (2 applications/season at 0.5 lb ai/A/application with a 15-day PHI is significantly less than the maximum use rate for the EC formulation of methyl parathion on peas (6 applications/season at 1 lb ai/A/application with a 10-day PHI for applications <0.5 lb ai/A/application and 15-days for applications of 0.5 to 1.0 lb ai/A/application).]

31. Data are required depicting methyl parathion residues of concern in/on soybeans harvested 20 days following the last of 2 applications of the Mcap formulation of methyl parathion at 1 lb ai/A/application. The registrant is referred to OPPTS GLN 860.1500 for information on the location and number of field trials required. [Note: In their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4/10/97), the registrant (Elf Atochem) committed to submit soybean field data for the Mcap formulation by 12/31/99).]

Data are required depicting methyl parathion residues of concern in/on soybeans harvested 14 days

following the last of 2 applications of the EC formulation of methyl parathion at 1 lb ai/A/application. The registrant is referred to OPPTS GLN 860.1500 for information on the location and number of field trials required. Alternatively, the registrant can amend the EC product label to specify a maximum use rate of 2 applications/season at 0.5 lb ai/A/application with a 14-day PHI; this use pattern is supported by the available residue data.

In addition, if the required soybean field trials find quantifiable residues in/on soybeans, then data must be submitted for soybean aspirated grain fractions resulting from the use of the Mcap and EC formulations at the maximum label use rates.

32. Bean vines and hay are no longer listed as RACs of bean. The only bean species having foliage RACs is cowpea for which forage and hay are RACs.

The available data on bean vines and hay submitted to support the use of the EC formulation of methyl parathion on beans would be adequate to support a tolerance of 4 ppm for residues of methyl parathion in/on cowpea hay harvested 15 days following the last of six applications of the EC formulation of methyl parathion at 1.5 lb ai/A/application. However, no data are available for cowpea forage. The registrant of the EC formulation must either (i) amend the use pattern for beans to exclude applications to cowpeas or (ii) provide adequate residue data for cowpea forage reflecting the maximum use rate of the EC formulation to peas and propose tolerances for residues of methyl parathion in/on cowpea forage and hay.

No bean forage or hay data are available to support the use of the Mcap formulation on cowpeas. The registrant of the Mcap formulation must either (i) amend the use pattern for beans to exclude applications to cowpeas or (ii) provide adequate residue data for cowpea forage and hay reflecting the maximum use rate of the Mcap formulation to peas and propose tolerances for residues of methyl parathion in/on cowpea forage and hay.

33. Pea vines and hay are no longer listed as RACs of pea. Only vines and hay of field pea cultivars grown as livestock feeds are listed as RACs in Table 1 (OPPTS GLN 860.1000).

The available data on pea vines and hay would be adequate to support tolerances for residues of methyl parathion in/on field pea vines and hay harvested 15 days following the last of six applications of an EC formulation of methyl parathion at 1 lb ai/A/application; these data would support tolerances of 60 and 15 ppm for residues in/on field pea vines and hay. The registrants must either (i) amend the use pattern for peas to exclude applications to field peas grown for livestock feed or (ii) propose tolerances for field pea vines and hay. [Note: In their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4/10/97) the registrant (Elf Atochem) committed to amend their Mcap product label to prohibit use on field peas (Austrian winter peas).]

34. Data are required depicting methyl parathion residues of concern in/on soybean forage and hay reflecting the maximum use rates on soybeans for the EC and Mcap formulations. The registrant is referred to OPPTS GLN 860.1500 for information on the location and number of field trials required. Based upon the results of the new field trials, a tolerance should established for residues of methyl parathion in/on soybean forage.

Alternatively, if the registrants amend product labels to prohibit the feeding of treated soybean forage and hay to livestock, then residue data on soybean forage and hay will not be required and associated tolerances

should be revoked.

35. Provided the registrant amends the Mcap formulation product label to specify a maximum of five applications/season, the available data are adequate and support lowering the tolerance for residues of methyl parathion in/on tomatoes from 1 ppm to 0.5 ppm.

36. New apple field trial data depicting methyl parathion residues of concern in/on apples reflecting the maximum use rate of the Mcap formulation of methyl parathion on apples are required. [Note: The registrant (Elf Atochem) has submitted new apple field trial data (MRIDs 44413501 and 44413502) to support the use of the Mcap formulation of methyl parathion on apples. The subject field trial data are currently under review (D241912). A preliminary assessment of these data indicates that it is unlikely that a thorough review of these data will precipitate the need to increase any dietary exposure estimate used in the dietary risk assessment for methyl parathion.]

37. Data are required depicting methyl parathion residues of concern in/on pears resulting from the maximum use rate of the Mcap formulation of methyl parathion on pears. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required.

38. Data are required depicting methyl parathion residues of concern in/on sweet and sour cherries resulting from the maximum use rate of the Mcap formulation of methyl parathion on cherries. As this use is not allowed in CA, residue data from CA are not required. The registrant is referred to OPPTS GLN 860.1500 for information on the location and number of field trials required.

39. The tolerance for residues of methyl parathion in/on peaches will cover residues of methyl parathion in/on nectarines as per 40 CFR §180.1(h).

40. The available data are adequate and support the established 1 ppm tolerance for residues of methyl parathion in/on peaches, provided the registrant amends the Mcap formulation product label to specify a PHI of 21 days for applications at ≤0.75 lb ai/A/application and a PHI of 30 days for applications at >0.75 lb ai/A/application.

41. Data are required depicting methyl parathion residues of concern in/on plums/fresh prunes reflecting the maximum use rate of the Mcap formulation of methyl parathion on plums. The registrant is referred to OPPTS GLN 860.1500 for information on the location and number of field trials required.

42. Data are required depicting methyl parathion residues of concern in/on almonds and almond hulls reflecting the maximum use rate of the Mcap formulation of methyl parathion on almonds. The registrant is referred to OPPTS GLN 860.1500 for information on the location and number of field trials required.

43. Data are required depicting methyl parathion residues of concern in/on pecans reflecting the maximum use rate of the Mcap formulation of methyl parathion on pecans. The registrant is referred to OPPTS GLN 860.1500 for information on the location and number of field trials required.

44. Data are adequate to support the currently established SLN for the use of methyl parathion on walnuts in CA (CA97002400) and indicate that the currently established tolerance for residues of methyl parathion in/on walnuts should be lowered from 0.1 ppm to 0.05 ppm.

40cd

45. Residue data on wheat grain, forage, hay, and straw will be translated to support uses on barley (grain, hay, and straw), oats (grain, forage, hay, and straw), and rye (grain, forage and straw).

46. The available data are adequate and support the establishment of separate tolerances for residues of methyl parathion in/on sweet corn (K+CWHR), field corn grain, and pop corn grain at 0.2 ppm. The registrant should amend all labels to specify the minimum PHIs and maximum single and seasonal use rates supported by the available data. Available sweet corn field trial data support a PHI of 3 days following the last of six foliar applications at 1 lb ai/A/application. Available field corn field trial data support a PHI of 12 days following the last of six foliar applications at 1 lb ai/A/application. [Note: Field corn data (MRID 44398301) depicting methyl parathion residues of concern in/on grain, forage, and fodder resulting from treatment with the Mcap formulation of methyl parathion are currently under review (D241912). A preliminary assessment of these data indicates that it is unlikely that a thorough review of these data will precipitate the need to increase any dietary exposure estimate used in the dietary risk assessment for methyl parathion.]

47. Available data are adequate and indicate that the currently established tolerance for residues of methyl parathion in/on rice should be increased from 1 ppm to 3 ppm. The registrant must amend the Mcap formulation product label to specify a maximum seasonal use rate. Up to 6 applications/season at 0.75 lb ai/A/application would be supported by available residue data.

48. Additional residue data are required on sorghum grain, forage, and stover because the available data do not reflect the registered use pattern. The registered use specifies a maximum seasonal rate of 6 applications at up to 0.20 lb ai/A/application with an EC formulation of methyl parathion and a 21-day PHI/PGI. The available residue data reflect 6 applications at 1 lb ai/A/application with a 21-day PHI (5x the use rate) and indicate that residues would exceed the established tolerances on sorghum grain and forage at that rate. New sorghum field trials are required to support the currently registered maximum use rate of the EC formulation of methyl parathion on sorghum and should include residue data on grain, forage, and stover. The registrant should refer to OPPTS Test Guidelines 860.1500 for information on the number and location of trials required. Data are also required for resides in/on sweet sorghum unless the registrant amends labels to prohibit the use on sweet sorghum.

49. The available data are <u>not</u> adequate to support the use of the EC formulation of methyl parathion on wheat. Additional data are required reflecting the currently registered maximum use rate of the EC formulation of methyl parathion on wheat grain. Available wheat field trial data (reflecting use rates which are slightly higher than the currently registered maximum use rate of the EC formulation of methyl parathion on wheat) indicate that the currently established tolerance for residues of methyl parathion in/on wheat grain should be increased from 1 ppm to 4 ppm. [Note: Since wheat grain data are being translated to barley, oats, and rye grains, these grain tolerances should also be increased to 4 ppm.] The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of trials required.

    The available data are adequate to support the use of the Mcap formulation of methyl parathion on wheat provided the registrant amends the Mcap product label to specify a maximum of 3 applications per season on wheat.

50. The available data are adequate and indicate that the currently established tolerance for residues of methyl parathion in/on corn forage should be increased from 1 ppm to 20 ppm based the highest residue level

found in forage (18.86 ppm) from a study (MRID 41717805) conducted at the maximum use rate for the Mcap formulation of methyl parathion on sweet corn and reflecting a 0-day PHI. Based on the available field corn stover data (MRID 42307901) reflecting the maximum use rate of the Mcap formulation of methyl parathion on field corn, a tolerance for residues of methyl parathion in/on corn stover must be established. Data indicate that a tolerance of 30 ppm would be appropriate. [Note: Field corn data (MRID 44398301) depicting methyl parathion residues of concern in/on grain, forage, and fodder resulting from treatment with the Mcap formulation of methyl parathion are currently under review (D241912). A preliminary assessment of these data indicates that it is unlikely that a thorough review of these data will precipitate the need to increase any exposure estimate used in the dietary risk assessment for methyl parathion.]

51. The available rice straw data are adequate to support the use of the EC formulation of methyl parathion on rice and indicate that a tolerance for residues of methyl parathion in/on rice straw should be established and that an appropriate level would be 9 ppm.

The available rice straw data are not adequate to support the use of the Mcap formulation of methyl parathion on rice. Data are required depicting methyl parathion residues of concern in/on rice straw harvested 15 days following the last of multiple foliar applications of the Mcap formulation of methyl parathion to rice at 0.75 lb ai/A/application. Data must reflect maximum use rates and the registrant must amend the Mcap product label to specify a maximum seasonal use rate supported by the residue data. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required.

52. The available data are not adequate to support the use of the Mcap formulation of methyl parathion on wheat. Data are required depicting methyl parathion residues of concern in/on wheat forage, hay, and straw harvested 15 days following the last of three foliar applications of an Mcap formulation of methyl parathion at 0.75 lb ai/A/application. The registrant should refer to OPPTS Test Guidelines, 860.1500, for information on the number and location of trials required.

The available data are not adequate to support the use of the EC formulation of methyl parathion on wheat. In conjunction with the requirement for new field trials for wheat grain to support use of the EC formulations of methyl parathion on wheat, new field trial data are required on wheat forage, hay, and straw reflecting the maximum use rate on wheat. Available wheat field trial data (reflecting use rates which are slightly higher than the currently registered maximum use rate of the EC formulation of methyl parathion on wheat) indicate that tolerances for residues of methyl parathion in/on wheat forage, hay, and straw should be established at 2 ppm, 3 ppm, and 6 ppm, respectively. The registrant should refer to OPPTS Test Guidelines, 860.1500, for information on the number and location of trials required.

Since wheat forage, hay, and straw data are being translated to barley hay, barley straw, oat forage, oat hay, oat straw, rye forage, and rye straw, tolerances for residues of methyl parathion in/on these forage, hay, and straw RACs of barley, oats, and rye should also be established at 2 ppm, 3 ppm, and 6 ppm, respectively.

53. Data are required depicting methyl parathion residues of concern in/on grass forage (at a 0-day PHI/PGI) and hay reflecting the maximum use rate of the EC formulation of methyl parathion on grass. The registrants should refer to OPPTS GLN 860.1500 for information on the number and location of trials

required. [Note: In their 90-Day Response (dated 7/14/97) to the Methyl Parathion DCI (4/10/97), the registrant (Cheminova) committed to provided the subject data.]

Provided the registrant (Elf Atochem) amends their Mcap product label to delete "rangeland, pasture, grass grown for seed production, and roadside areas", as they committed to do in their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4/10/97), residue data on grass treated with the Mcap formulation of methyl parathion are not required.

54. New alfalfa field trials are required depicting methyl parathion residues of concern in/on alfalfa forage and hay reflecting the maximum use rates of the EC and Mcap formulations of methyl parathion on alfalfa. In addition, data are required depicting methyl parathion residues of concern in/on alfalfa seed reflecting the maximum use rate of the Mcap formulation of methyl parathion on alfalfa. Data should reflect the maximum number of applications allowed per cutting and the product labels should be amended to reflect the maximum rates supported by the residue data. The registrants should refer to OPPTS GLN 860.1500 for information on the number and location of trials required.

In their 90-Day Response (dated 7/14/97) to the Methyl Parathion DCI (4/10/97), the registrant (Cheminova) indicated that they were not supporting the use of the EC formulation of methyl parathion on alfalfa grown for seed. Provided the registrant amends their EC product label to prohibit use on alfalfa grown for seed, no alfalfa seed data are required to support the use of the EC formulation of methyl parathion on alfalfa.

55. In their 90-Day Response (dated 7/14/97) to the Methyl Parathion DCI (4/10/97) the registrant (Cheminova) has indicated that they wish to support the use of methyl parathion on artichokes and has committed to amend their EC formulation product label to reflect the maximum single and seasonal use rates and minimum PHIs supported by available residue data generated with the EC formulation of methyl parathion. Provided the registrant amends their EC product label to specify a maximum use rate to artichokes of 4 applications/season at 1 lb ai/A/application with a 7-day PHI, available residue data are adequate and indicate that the currently established tolerance on artichokes should be increased from 1 ppm to 2 ppm. [Note: The RAC artichokes is not currently listed on Cheminova's EC product label (Reg. No. 67760-29).]

56. Data are required depicting methyl parathion residues of concern in aspirated grain fractions (grain dust) derived from field corn, grain sorghum, soybeans, and wheat grain harvested at the appropriate PHIs following treatment at the maximum labeled rates.

57. The available residue data for both the EC and Mcap formulations on cottonseed indicate that the established tolerance will be exceeded based upon the present use pattern. Available data indicate the currently established tolerance for residues of methyl parathion in/on cottonseed should be increased from 0.75 ppm to 5 ppm. The registrants must amend EC and Mcap formulation product labels to specify a maximum seasonal use rate supported by the available data. In addition, residue data on cotton gin byproducts are required. The registrants should refer to OPPTS GLN 860.1500 for information on the number and location of trials required. [Note: Cottonseed field trial data (MRID 44430601) are currently under review (D241327). A preliminary assessment of these data indicates that it is unlikely that a thorough review of these data will precipitate the need to increase any dietary exposure estimates used in the dietary risk assessment for methyl parathion.]

Additional cotton field trial data reflecting the maximum ULV application rates (using vegetable oil as a diluent) to cotton with the EC formulation of methyl parathion are required to support the SLN registration for use on cotton in TX (TX97000600). [Note: Although a ULV application to cotton using the Mcap formulation (EPA Reg. No. 4581-292) is also registered, data are not required to reflect this use at this time, because the maximum ULV use rate of the Mcap formulation is significantly less than the maximum ULV use rate of the EC formulation and does not specify the use of vegetable oil as a diluent.]

58. Available data are adequate and indicate that the currently established tolerance for residues of methyl parathion in/on grapes should be increased from 1 ppm to 3 ppm. [Note: Grape field trial data (MRIDs 44413401 and 44413402) are currently under review (D245124). A preliminary assessment of these data indicates that it is unlikely that a thorough review of these data will precipitate the need to increase any exposure estimates used in the dietary risk assessment for methyl parathion.]

59. Although not supported by the basic producers, IR-4 plans to support the use of methyl parathion on hops. Field trial data depicting methyl parathion residues of concern in/on mature dried hops reflecting the proposed maximum use rate of methyl parathion (unknown at this time) on hops are required. [Note: Hops field trial data (MRID 44501201) are currently under review (D244404). A preliminary assessment of these data indicates that it is unlikely that a thorough review of these data will precipitate the need to increase any exposure estimates used in the dietary risk assessment for methyl parathion.]

60. Although peanuts is not currently listed on the Mcap product label, the registrant (Elf Atochem), in their 90-Day Response (dated 7/29/97) to the Methyl Parathion DCI (4/10/97) indicated that they wish to support the use of the Mcap formulation of methyl parathion on peanuts. The registrant plans to restrict the feeding of peanut hay to livestock.

    Data are required depicting methyl parathion residues of concern in/on peanuts reflecting the maximum use rate of the Mcap formulation of methyl parathion on peanuts and the registrant must amend the Mcap product label to specify a maximum use rate support by the residue data. The registrant should refer to OPPTS GLN 860.1500 for information on the number and location of field trials required.

    A peanut processing study is also required to support the use of the Mcap formulation of methyl parathion on peanuts.

61. The available data are adequate for rape/canola seed and support the established 0.2 ppm tolerance provided the registrants amend product labels to specify a maximum of two applications per season at 0.5 lb ai/A/application. However, data are required depicting residues in/on rape forage harvested following two applications of methyl parathion (EC) at 0.5 lb ai/A/application. Alternatively, the registrant can amend product labels to specify applications only to canola, in which case, data on forage will not be required.

62. CBRS No. 12024, DP Barcode D192316, 9/7/93, S. Knizner.

63. CBRS No. 10687, DP Barcode D183212, 3/2/93, A. Aikens.

64. Processing data from wheat grain will be translated to determine the need for tolerances in processed commodities of barley grain, oat grain, and rye grain.

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65. Data are required depicting the potential for the concentration of methyl parathion residues of concern in/on prunes processed from plums bearing detectable residues.

66. Sorghum grain processing data are not required at the present time. The requirement for a processing study on sweet sorghum will be waived provided the registrants amend their product labels to prohibit uses on sweet sorghum under the label directions for sorghum.

67. Data are required depicting the potential for the concentration of methyl parathion residues of concern in sunflower meal and oil processed from sunflower seeds bearing detectable residues.

68. Ruminant and poultry feeding studies are required. For these studies, ruminants and poultry should be dosed orally at 1x, 3x, and 10x the maximum expected dietary burden for a minimum of 28 days or until residues plateau in milk and eggs if they have not done so by 28 days. Animals should be sacrificed within 24 hours of receiving the final dose. Milk and eggs should be collected throughout the study, and samples of muscle, fat, liver, and kidney (ruminants only) should be collected for analysis. Samples should be analyzed for residues of methyl parathion, methyl paraoxon, *p*-nitrophenol, and amino-paraoxon-methyl. In addition, these studies must be supported by data depicting the storage stability of residues in animal commodities. For additional guidance, the registrants should refer to OPPTS GLN 860.1480.

69. Confined rotational crop data are required. Confined rotational crop data (MRID 43127609) were submitted to satisfy OPPTS GLN 860.1850 data requirements and are under review (D199712). The need for field rotational crop data to satisfy OPPTS GLN 860.1900 requirements will be determined once these data have been reviewed.

TOLERANCE REASSESSMENT SUMMARY

Tolerances for residues of methyl parathion are expressed in terms of parathion or its methyl homolog (methyl parathion) [40 CFR §180.121 (a) and §180.319] or in terms of methyl parathion *per se* [40 CFR §180.121 (b)]. The HED Metabolism Assessment Review Committee (memo by B. Cropp-Kohlligian dated 5/21/98) has tentatively determined that the tolerance expression for methyl parathion residues of concern in/on plant commodities may be based on residues of methyl parathion only. Tolerances for residues of parathion should be moved from 40 CFR §180.121 (a) and listed under a separate 40 CFR §180.XXX (a) section. The tolerance definition for methyl parathion listed under 40 CFR §180.121 (a) should be changed to read as follows:

> Tolerances are established for the residues of methyl parathion [*O,O*-dimethyl-*O*-*p*-nitrophenylthiophosphate] in/on the following commodities:

The appropriate tolerances for methyl parathion residues in animal commodities will be determined once data are available from outstanding livestock feeding studies. The HED Metabolism Assessment Review Committee (memo by B. Cropp-Kohlligian dated 5/21/98) has tentatively determined that the tolerance expression for methyl parathion residues of concern in/on animal commodities, if tolerances are needed, may be based on residues of methyl parathion only.

A summary of the methyl parathion tolerance reassessment and recommended modifications in commodity definitions are presented in Table C.

Tolerances Listed Under 40 CFR §180.121 (a) and (b):

Pending Agency acceptance of the amended 4 lb/gal EC label (EPA Reg. No. 67760-29) submitted by Cheminova 9/12/97 and provided registrants make the additional label amendments required herein, sufficient data are available to reassess tolerances for residues of methyl parathion in/on apples, artichokes, beans (succulent and dried), carrots, celery, corn grain (field and pop), sweet corn (K+CWHR), corn forage, cottonseed, grapes, Leafy Vegetables *Brassica* (cole), lentils, lettuce, onions, peaches, peas (succulent and dried), potatoes, rape seed, rice grain, spinach, sugar beet roots and tops, sunflower seed, sweet potatoes, tomatoes, turnip tops and roots, walnuts and wheat grain. However additional confirmatory field trial data are required on apples, sugar beet tops, onions, potatoes, sweet potatoes, turnip tops, and wheat grain.

Additional residue data deemed critical to tolerance reassessment are required before tolerances can be reassessed on the following commodities: alfalfa forage and hay, almonds and almond hulls, cherries, grass forage and hay, hops, peanuts, pears, pecans, plums, sorghum, sorghum stover, sorghum forage, soybeans, and soybean hay.

Wheat data will be translated to barley, oats, and rye to reassess tolerances on these commodities.

Tolerances for residues of methyl parathion in/on commodities of the following crops should be revoked, as the basic producers have indicated in the 90-Day Responses to the Methyl Parathion

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DCI (4/10/97) that they do not intend to support the use of methyl parathion on the following crops under reregistration: apricots, avocados, birdsfoot trefoil, blackberries, blueberries (huckleberries), boysenberries, citrus fruits, clover, cranberries, cucumbers, currants, dates, dewberries, eggplant, endive (escarole), figs, filberts, garden beets, garlic, gooseberries, guar beans, guavas, Loganberries, mangoes, melons, okra, olives, parsley, parsnips, peppers, pineapples, pumpkins, quinces, radishes, raspberries, rutabagas, safflower, squash, strawberries, sugarcane, Swiss chard, vetch, and Youngberries.

Tolerances for residues of methyl parathion in/on mustard seed and pea forage should be revoked as these are not considered RACs of their respective crops.

The tolerance for residues of methyl parathion in/on nectarines should be revoked as this is covered by the tolerance for residues of methyl parathion in/on peaches.

The tolerance for residues of methyl parathion in/on lentils listed under 40 CFR §180.121 (b) should be revoked concomitant with the establishment of a tolerance on lentil, seed at 0.05 ppm under 40 CFR §180.121 (a).

The tolerance for residues of methyl parathion in/on vegetables, leafy, *Brassica* (cole) listed under 40 CFR §180.121 (b) should be revoked concomitant with the establishment of a tolerance on vegetables, leafy, *Brassica* (cole) at 1 ppm under 40 CFR §180.121 (a). Individual tolerances on broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale, kohlrabi, and mustard greens should be revoked.

Tolerances Listed Under 40 CFR §180.319:

Wheat grain, forage, and straw data will be translated to rye grain, forage, and straw. At that time the temporary tolerance for residues of methyl parathion in/on rye should be revoked concomitant with the establishment of permanent tolerances listed under 40 CFR §180.121 (a).

Tolerances Needed Under 40 CFR §180.121 (a):

New tolerances are needed for residues of methyl parathion in/on the following RACs: alfalfa seed, aspirated grain fractions, barley hay, barley straw, corn stover, cotton gin byproducts, cowpea forage, cowpea hay, field pea vines, field pea hay, lentil seed, oat forage, oat hay, oat straw, rape forage, rice straw, rye grain, rye forage, rye straw, soybean forage, Leafy Vegetables *Brassica* (cole) crops, wheat forage, wheat hay, and wheat straw. At the present time, sufficient data are available to determine appropriate tolerances for residues of methyl parathion in/on corn stover (30 ppm), cowpea hay (4 ppm), field pea vines (60 ppm), field pea hay (15 ppm), lentil seed (0.05 ppm), rice straw, Leafy Vegetables *Brassica* (cole) crops (1 ppm), wheat forage (2 ppm), wheat hay (3 ppm), and wheat straw (6 ppm). Additional field trial data, deemed confirmatory, are required on cowpea hay, rice straw, wheat forage, wheat hay, and wheat straw. Wheat forage, hay, and straw data will be translated to similar barley, oats, and rye commodities. Additional

field trial data, deemed critical to tolerance reassessment, are required on alfalfa seed, aspirated grain fractions, cotton gin byproducts, cowpea forage, rape forage, and soybean forage.

Separate tolerances are also required for residues in the following processed food/feed items: wet apple pomace, barley bran, rice hulls, rye bran, refined soybean oil, wheat bran, wheat germ, and wheat shorts. At the present time, sufficient data are available to determine appropriate tolerances for residues of methyl parathion in wet apple pomace (5 ppm), rice hulls (12 ppm), wheat bran (8 ppm), wheat germ (8 ppm), and wheat shorts (8 ppm). Wheat bran data will be translated to barley bran and rye bran. Additional soybean field trial data, deemed critical to tolerance reassessment, are required before an appropriate tolerance can be determined for residues of methyl parathion in refined soybean oil. [Note: Processing studies on peanuts, plums/prunes, and sunflower seed remain outstanding.]

Table C. Tolerance Reassessment Summary for methyl parathion.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	*Correct Commodity Definition*/Comments
Tolerances listed under 40 CFR §180.121 (a):			
Alfalfa, Fresh	1.25	TBD [a]	*Alfalfa, forage*
Alfalfa, Hay	5	TBD	*Alfalfa, hay*
Almonds	0.1	TBD	
Almonds, Hulls	3	TBD	
Apples	1	1	Additional apple field trial data are required.
Apricots	1	Revoke	Not supported under reregistration
Artichokes	1	2	
Avocados	1	Revoke	Not supported under reregistration
Barley	1	4	*Barley, grain* / Translated from wheat grain. Additional wheat grain data are required.
Beans	1	1	*Beans, succulent*
		0.05	*Beans, dried seed*
Beets greens (alone)	1	Revoke	Not supported under reregistration
Beets (with or without tops)	1	Revoke	Not supported under reregistration
Beets, sugar	0.1	0.05	*Sugar beets, roots*
Beets, sugar (tops)	0.1	2	*Sugar beets, tops* / Translated from turnip top data. Additional sugar beet top data are required
Blackberries Blueberries (huckleberries) Boysenberries Dewberries Gooseberries Loganberries Raspberries Youngberries	1	Revoke	Not supported under reregistration

(*continued; footnotes follow*)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	*Correct Commodity Definition*/Comments
Broccoli Brussels sprouts Cabbage Cauliflower Collards Kale Kohlrabi Mustard greens	1	Revoke	Concomitant with the establishment of a Vegetables, leafy, Brassica (cole) crop ;roup tolerance at 1 ppm under §180.121 (a).
Carrots	1	1	*carrot, root*
Celery	1	5	
Cherries	1	TBD	
Citrus Fruits	1	Revoke	Not supported under reregistration
Clover	1	Revoke	Not supported under reregistration
Corn	1	0.2	*Corn, field, grain*
		0.2	*Corn, pop, grain*
		0.2	*Corn, sweet: K+CWHR*
Corn, Forage	1	20	*Corn, forage*
Cottonseed	0.75	5	*Cotton, undelinted seed*
Cranberries	1	Revoke	Not supported under reregistration
Cucumbers Melons Pumpkins Squash Summer squash	1	Revoke	Not supported under reregistration
Currants	1	Revoke	Not supported under reregistration
Dates	1	Revoke	Not supported under reregistration
Eggplant	1	Revoke	Not supported under reregistration
Endive (escarole)	1	Revoke	Not supported under reregistration
Figs	1	Revoke	Not supported under reregistration
Filberts	0.1	Revoke	Not supported under reregistration
Garlic	1	Revoke	Not supported under reregistration
Grapes	1	3	

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	*Correct Commodity Definition*/Comments
Grass (forage)	1	TBD	*Grass, forage*
		TBD	*Grass, hay*
Guavas	1	Revoke	Not supported under reregistration
Hops	1	TBD	
Lettuce	1	2	*Lettuce, head and leaf*
Mangoes	1	Revoke	Not supported under reregistration
Mustard seed	0.2	Revoke	Not a RAC of mustard
Nectarines	1	Revoke	Covered by the tolerance for residues of methyl parathion in/on peaches (40 CFR §180.1(h))
Oats	1	4	*Oat, grain* / Translated from wheat grain data. Additional wheat grain data are required.
Okra	1	Revoke	Not supported under reregistration
Olives	1	Revoke	Not supported under reregistration
Onions	1	1	Additional onion field trial data are required
Parsnips (with or without tops)	1	Revoke	Not supported under reregistration
Parsnip greens (alone)	1	Revoke	Not supported under reregistration
Peaches	1	1	
Peanuts	1	TBD	
Pears	1	TBD	
Peas	1	1	*Pea, succulent*
		0.5	*Peas, dried seed*
Peas forage	1	Revoke	Not a significant livestock feed item
Pecans	0.1	TBD	
Peppers	1	Revoke	Not supported under reregistration
Pineapples	1	Revoke	Not supported under reregistration
Plums (Fresh Prunes)	1	TBD	

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	*Correct Commodity Definition*/Comments
Potatoes	0.1(N)	0.05	*Potato, tuber* / Additional potato field trial data are required.
Quinces	1	Revoke	Not supported under reregistration
Radishes (with or without tops)	1	Revoke	Not supported under reregistration
Radish, tops	1	Revoke	Not supported under reregistration
Rape seed	0.2	0.2	Note: Tolerance is sufficient to cover residues in canola oil
Rice	1	3	*Rice, grain*
Rutabagas (with or without tops)	1	Revoke	Not supported under reregistration
Rutabaga tops	1	Revoke	Not supported under reregistration
Safflower seed	0.1	Revoke	Not supported under reregistration
Sorghum	0.1	TBD	*Sorghum, grain, grain*
Sorghum fodder	3	TBD	*Sorghum, grain, stover*
Sorghum forage	3	TBD	*Sorghum, grain, forage*
Soybean	0.1	TBD	*Soybean, seed*
Soybean hay	1	TBD	
Spinach	1	0.5	
Strawberries	1	Revoke	Not supported under reregistration
Sugarcane	0.1	Revoke	Not supported under reregistration
Sugarcane fodder	0.1	Revoke	Not supported under reregistration
Sugarcane forage	0.1	Revoke	Not supported under reregistration
Sunflower seed	0.2	0.2	
Sweet Potatoes	0.1	0.05	*Sweet potato, root* / Translated from potato data. Additional potato/sweet potato field trial data are required.
Swiss Chard	1	Revoke	Not supported under reregistration
Tomatoes	1	0.5	
Turnips (with or without tops)	1	0.05	*Turnip, roots*
Turnip greens	1	4	*Turnip, tops* / Additional turnip top data are required

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	*Correct Commodity Definition*/Comments
Vetch	1	Revoke	Not supported under reregistration
Walnuts	0.1	0.05	
Wheat	1	4	*Wheat, grain* / Additional wheat grain data are required
Tolerances listed under 40 CFR §180.121 (b):			
Birdsfoot trefoil forage	1.25	Revoke	Not supported under reregistration
Birdsfoot trefoil hay	5	Revoke	Not supported under reregistration
Guar beans	0.2	Revoke	Not supported under reregistration
Lentils	1	Revoke	Concomitant with the establishment of a tolerance on *lentil, seed* at 0.05 ppm under 180.121(a)
Parsley	1	Revoke	Not supported under reregistration
Vegetables, leafy, *Brassica* (cole)	1.0	Revoke	Concomitant with the establishment of a tolerance on Vegetables, leafy, *Brassica* (cole) at 1 ppm under 180.121(a)
Tolerances listed under 40 CFR §180.319:			
Rye	0.5	Revoke	Temporary tolerance no longer in effect.
Tolerances needed under 40 CFR §180.121 (a)			
Alfalfa, seed	None	TBD	
Apple, wet pomace	None	5	Based on a concentration factor of 5.3x and apple field trial data which indicate that the currently established tolerance on apples (1 ppm) is just adequate.
Aspirated grain fractions	None	TBD	
Barley, bran	None	8	Translated from wheat bran. Additional wheat grain data are required.
Barley, hay	None	3	Translated from wheat hay. Additional wheat hay data are required.

(continued; footnotes follow)

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Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	*Correct Commodity Definition*/Comments
Barley, straw	None	6	Translated from wheat straw. Additional wheat straw data are required.
Corn, stover	None	30	
Cotton gin byproducts	None	TBD	
Cowpea, forage	None	TBD	Additional cowpea forage and hay data are required. If labels are amended to exclude uses on cowpeas and field peas grown for livestock feed, then residue data and tolerances on these commodities will not be required.
Cowpea, hay	None	4	
Field pea, vines	None	60	
Field pea, hay	None	15	
Lentil, seed	None	0.05	
Oat, forage	None	2	Translated from wheat forage. Additional wheat forage data are required.
Oat, hay	None	3	Translated from wheat hay. Additional wheat hay data are required.
Oat, straw	None	6	Translated from wheat straw. Additional wheat straw data are required.
Rape, forage	None	TBD	
Rice, hulls	None	12	Based on an average concentration factor of 4.7x and a HAFT of 2.35 ppm.
Rice, straw	None	9	Additional rice straw data are required
Rye, bran	None	8	Translated from wheat bran. Additional wheat grain data are required.
Rye, grain	None	4	Translated from wheat grain. Additional wheat grain data are required.
Rye, forage	None	2	Translated from wheat forage. Additional wheat forage data are required.

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	*Correct Commodity Definition*/Comments
Rye, straw	None	6	Translated from wheat straw. Additional wheat straw data are required.
Soybean, forage	None	TBD	
Soybean, refined oil	None	TBD	To be based on a concentration factor of 3x
Vegetables, leafy, *Brassica* (cole)	None	1	
Wheat, bran	None	8	Based on a concentration factor of 2x. Additional wheat grain data are required.
Wheat, forage	None	2	Additional wheat forage data are required
Wheat, germ	None	8	Based on a concentration factor of 2x. Additional wheat grain data are required.
Wheat, hay	None	3	Additional wheat hay data are required
Wheat, shorts	None	8	Based on a concentration factor of 2x. Additional wheat grain data are required.
Wheat, straw	None	6	Additional wheat straw data are required

[a] TBD = To be determined. Tolerance cannot be determined at this time because data deemed critical to tolerance reassessment remain outstanding.

DIETARY EXPOSURE ASSESSMENT

Plant Commodities:

Two acceptable plant metabolism studies were submitted in support of the reregistration of methyl parathion and are available for risk assessment purposes; however, an additional plant metabolism study is outstanding. Additional magnitude of the residue data on raw agricultural commodities used for human consumption are required for the following crops/commodities: almonds, apples, beans (succulent and dried), cherries, onions, peanuts, pears, pecans, plums, potatoes, sorghum, soybeans, sweet potatoes, turnip greens, and wheat. Adequate processing data for methyl parathion residues of concern are available for all processed commodities except for those from peanuts, plums, and sunflower seed.

Based on available magnitude of the residue, anticipated residue estimates (chronic/acute) for the combined residues of methyl parathion and methyl paraoxon in/on plant commodities are provided in the tables below. [Note: Although individual tolerances do not exist for yams and nectarines, these commodities should be included in the DRES analysis at 0.1 ppm and 1 ppm, respectively.]

Chronic/acute anticipated residue (AR) estimates for the combined residues of methyl parathion and methyl paraoxon in/on plant commodities based on available magnitude of the residue data. [Note: Except as specified for peanuts, plums, and sunflower seed, default concentration factors inherent in the DRES analysis should be deactivated.]

Commodity	Anticipated Residue	Comments
Carrots	1 ppm	Anticipated residue estimates are based on the reassessed tolerance level which is deemed adequate to reflect the combined residues of methyl parathion and methyl paraoxon resulting from the maximum use rate of methyl parathion. Sunflower seed processing data are not available; hence, any default concentration factor inherent in the DRES analysis for sunflower seed oil should be activated.
Turnip tops	4 ppm	
Onions	1 ppm	
Celery	5 ppm	
Lettuce	2 ppm	
Spinach	0.5 ppm	
Broccoli	1 ppm	
Brussels sprouts	1 ppm	
Cabbage	1 ppm	
Cauliflower	1 ppm	
Collards	1 ppm	

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Commodity	Anticipated Residue	Comments
Kale	1 ppm	
Kohlrabi	1 ppm	
Mustard greens	1 ppm	
Beans-succulent	1 ppm	
Peas-dried	0.5 ppm	
Peas-succulent	1 ppm	
Tomatoes	0.5 ppm	
Apples	1 ppm	
Wheat-grain	4 ppm	
Grapes	3 ppm	
Artichokes	2 ppm	
Peaches	1 ppm	
Rice-grain	3 ppm	
Corn-pop	0.2 ppm	
Corn-sweet	0.2 ppm	
Sunflower seed	0.2 ppm	
Wheat-germ	8 ppm	
Wheat-bran	8 ppm	
Canola seed	0.2 ppm	
Potato	0.1 ppm	Anticipated residue estimates are based on the HAFT value for the combined residues of methyl parathion and methyl paraoxon. Methyl parathion and methyl paraoxon residue levels reflecting the maximum use rate of methyl parathion were below the LOQ (0.05 ppm for each analyte). [Note: HAFT values are calculated at the LOQ levels and result in AR estimates that are higher than the reassessed tolerance levels reported in Table C.]
Turnip roots	0.1 ppm	
Sugar beet roots	0.1 ppm	
Beans-dried	0.1 ppm	
Lentils	0.1 ppm	
Soybeans	0.1 ppm	
Walnuts	0.1 ppm	
Nectarines	1 ppm	Translated from peaches
Barley-grain	4 ppm	Translated from wheat grain
Oats-grain	4 ppm	Translated from wheat grain

Commodity	Anticipated Residue	Comments
Sweet potato	0.1 ppm	Translated from potato
Yams	0.1 ppm	Translated from potato
Pears	1 ppm	Translated from apples
Cherries	1 ppm	Anticipated residue estimates are based on the currently established tolerance levels. Although data deemed critical to tolerance reassessment remain outstanding, there is no current indication that these tolerances need to be increased. Peanut and plum processing data are not available; hence, any default concentration factors inherent in the DRES analysis for peanut oil, prunes, and prune juice should be activated.
Almonds	0.1 ppm	
Pecans	0.1 ppm	
Hops	1 ppm	
Plums	1 ppm	
Peanuts	1 ppm	
Sorghum	0.1 ppm	

Chronic/acute anticipated residue (AR) estimates for the combined residues of methyl parathion and methyl paraoxon in/on processed commodities based on available magnitude of the residue data. [Note: Concentration/reduction factors used in AR calculations include methyl parathion and methyl paraoxon residue levels.]

Commodity	Anticipated Residue	Comments
Tomato-juice	0.03 ppm	Based on AR level for tomato (0.5 ppm) multiplied by the reduction factor (0.06x) for tomato juice.
Tomato-puree	0.06 ppm	Based on AR level for tomato (0.5 ppm) multiplied by the reduction factor (0.12x) for tomato puree.
Tomato-catsup	0.03 ppm	Based on AR level for tomato (0.5 ppm) multiplied by the reduction factor (0.06x) for tomato catsup.
Tomato-paste	0.06 ppm	Translated from tomato puree.
Grapes-raisins	0.12 ppm	Based on AR level for grapes (3 ppm) multiplied by the reduction factor (0.04x) for raisins.
Grapes-juice	0.09 ppm	Based on AR level for grapes (3 ppm) multiplied by the reduction factor (0.03x) for grape juice.
Apples-juice	0.1 ppm	Based on AR level for apples (1 ppm) multiplied by the reduction factor (0.1x) for apple juice.
Refined corn oil	0.2 ppm	Based on AR level for corn grain (0.2 ppm) multiplied by the concentration factor (1x) for refined corn oil.
Refined cottonseed oil	3 ppm	Based on AR level for cottonseed (5 ppm) multiplied by the reduction factor (0.6x) for refined cottonseed oil.
Cottonseed meal	1 ppm	Based on AR level for cottonseed (5 ppm) multiplied by the reduction factor (0.2x) for cottonseed meal.
Refined soybean oil	0.3 ppm	Based on the AR level for soybeans (0.1 ppm) multiplied by the concentration factor (3x) for refined soybean oil.
Wheat flour	1.6 ppm	Based on the AR level for wheat grain (4 ppm) multiplied by the reduction factor (0.4x) for wheat flour.

Animal Commodities:

For reregistration and risk assessment purposes, adequate animal metabolism data are available. Livestock feeding studies remain outstanding.

A dietary exposure assessment for methyl parathion residues of concern from animal commodities should not be performed at this time. No tolerances are currently established for residues of methyl parathion in meat, milk, poultry, and egg. Livestock feeding studies remain outstanding. Residues of methyl parathion were not detected in ruminant tissue, milk, and egg samples collected from the ruminant and poultry metabolism studies. Residues of methyl paraoxon were not detected

in any of the samples collected from the ruminant and poultry metabolism studies. Residues of methyl parathion detected in poultry tissue samples collected from the poultry metabolism study (conducted at ca. 1.3x the maximum theoretical dietary burden for poultry) were very low (0.001 ppm in heart and kidney; 0.004 ppm in gizzard; 0.008 ppm in fat; and 0.011 ppm in skin). Based on available data it is uncertain if finite residues of methyl parathion and methyl paraoxon are likely to occur in animal commodities; hence, anticipated residue estimates for residues of methyl parathion and methyl paraoxon in animal commodities should not be included in the dietary risk assessment for methyl parathion at this time.

CODEX HARMONIZATION

The Codex Alimentarius Commission has established maximum residue limits (MRLs) for methyl parathion residues in/on various plant commodities (see *Guide to Codex Maximum Limits For Pesticide Residues, Part A.1, 1995*). Codex MRLs for methyl parathion are currently expressed in terms of the parent. The U.S. tolerance definition will be compatible with Codex. A comparison of the Codex MRLs and the corresponding U.S. tolerances is presented in Table D.

Table D. Codex MRLs for Parathion-methyl and applicable U.S. tolerances.

Codex			Reassessed U.S. Tolerance (ppm)	Recommendation and Comments
Commodity (As Defined)	MRL (mg/kg)	Step		
Artichoke globe	2	3	2	
Bean forage (green)	1	3	None	
Beans (dry)	0.05 * [a]	3	0.05	
Brassica vegetables	0.2	CXL	1	
Broccoli	0.2	3(a)	None	
Cabbages, Head	0.2	3(a)	None	
Carrot	1	3	1	
Celery	5	3	5	
Cherries	0.01 *	CXL	TBD [b]	
Clover	10	3	None	
Common bean (pods and/or immature seeds)	0.05 *	3	1	U.S. commodity definition is "Beans, succulent".
Garden pea (young pods)	1	3	1	U.S. commodity definition is "Peas, succulent".
Gooseberry	0.01 *	CXL	None	
Hay or fodder (dry) of grasses	5	3	TBD	U.S. commodity definitions are "Grass, forage" and "Grass, hay".
Hops, Dry	1.0	3(a)	TBD	
Lettuce, Leaf	0.05 *	3	2	
Lettuce, Head	0.5	3	2	
Lima bean (young pods and/or immature beans)	0.05 *	3	1	U.S. commodity definition is "Beans, succulent".
Mustard greens	0.5	3	None	
Peas (dry)	0.2	3	0.5	U.S. commodity definition is "Peas, dried seed".
Plums (including prunes)	0.01 *	CXL	TBD	
Potato	0.05 *	3	0.05	U.S. commodity definition is "Potato, tuber".

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Table D *(continued)*.

Codex			Reassessed U.S. Tolerance (ppm)	Recommendation and Comments
Commodity (As Defined)	MRL (mg/kg)	Step		
Raspberries, Red, Black	0.01 *	CXL	None	
Rice	3	3	3	U.S. commodity definition is "Rice, grain".
Rice straw and fodder, Dry	10	3	9	U.S. commodity definition is "Rice, straw".
Rice, Husked	1	3	3	U.S. commodity definition is "Rice, grain".
Spinach	0.5	3	0.5	
Sugar beet	0.05 *	CXL	0.05	U.S. commodity definition is "Sugar beet, roots".
Sugar beet leaves or tops	0.05 *	3	2	U.S. commodity definition is "Sugar beet, tops".
Turnip greens	2	3	4	U.S. commodity definition is "Turnip, tops".
Turnip, Garden	0.05 *	3	0.05	U.S. commodity definition is "Turnip, roots".
Wheat	5	3	4	U.S. commodity definition is "Wheat, grain".
Wheat bran, Unprocessed	10	3	8	U.S. commodity definition is "Wheat, bran".
Wheat straw and fodder, Dry	10	3	6	U.S. commodity definition is "Wheat, straw".

[a] An asterisk (*) signifies that the MRL was established at or about the limit of detection.
[b] TBD = To be determined; additional data are required before the U.S. tolerance can be determined.

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