



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

CERTIFIED MAIL

Dear Registrant:

This is the Environmental Protection Agency's (hereafter referred to as EPA or the Agency) "Report of the Food Quality Protection Act (FQPA) Tolerance Reassessment Progress and Risk Management Decision (TRED) for metolachlor", which was approved on June 17, 2002. A Notice of Availability of this tolerance reassessment decision will be published in the *Federal Register* (FR) shortly.

The Federal Food, Drug and Cosmetic Act (FFDCA), as amended by FQPA, requires EPA to reassess all the tolerances for registered chemicals in effect on or before the date of the enactment of the FQPA, which was in August of 1996. In reassessing these tolerances, the Agency must consider, among other things, aggregate risks from non-occupational sources of pesticide exposure, whether there is increased susceptibility to infants and children, and the cumulative effects of pesticides with a common mechanism of toxicity. Once a safety finding has been made that aggregate risks are not of concern, the tolerances are considered reassessed. A reregistration eligibility decision (RED) for metolachlor was completed in April 1995, prior to FQPA enactment. Therefore, the tolerances need to be reassessed to meet the FQPA standard.

The Agency has evaluated the dietary risk associated with metolachlor and has determined that there is a reasonable certainty that no harm to any population subgroup will result from aggregate exposure to metolachlor when considering dietary exposure and all other non-occupational sources of pesticide exposure for which there is reliable information. Therefore, no mitigation measures are needed, and the eighty-one (81) tolerances established for residues of metolachlor in/on raw agricultural commodities are now considered reassessed as safe under section 408(q) of the FFDCA.

FQPA requires that EPA consider "available information" concerning the cumulative effects of a particular pesticide's residues and "other substances that have a common mechanism of toxicity." The reason for considering other substances is because of the possibility that low-level exposures to multiple chemical substances that cause a common toxic effect by a common mechanism could lead to

the same adverse health effect, as would a higher level of exposure to any of the other substances individually.

The Agency has examined this common mechanism potential for metolachlor and has concluded that only some of the pesticides that comprise the class of chloroacetanilides (acetochlor, alachlor, butachlor, metolachlor, and propachlor) should be designated as a “Common Mechanism Group” based on the development of nasal turbinate tumors. Metolachlor was observed in the nasal turbinates, but it is not apparent from currently available data that it shares the same target site in the nasal tissue as acetochlor, alachlor and butachlor. Therefore, only the chloroacetanilides, acetochlor, alachlor, and butachlor, are considered as a Common Mechanism Group due to their ability to cause nasal turbinate tumors. Therefore, a cumulative assessment is not necessary to determine whether tolerances established for residues of metolachlor in/on raw agricultural commodities will be considered reassessed as safe under section 408(q) of the FFDCA.

Based on currently available data, metolachlor does not appear to be an endocrine disruptor. However, when the appropriate screening and/or testing protocols being considered under the Agency’s Endocrine Disruptor Screening Program have been developed, metolachlor may be subjected to additional screening and/or testing to better characterize effects related to endocrine disruption.

The Agency’s human health findings for the pesticide metolachlor, were discussed in a closure conference call, and are summarized in the enclosed chemical overview and summary of the risk assessments. The risk assessments and other documents pertaining to the metolachlor tolerance reassessment decision are listed at the end of this document and are available on the Internet at <http://www.epa.gov/pesticides/reregistration/status.htm> and in the public docket for viewing.

Tolerances for residues of both metolachlor and *s*-metolachlor in or on raw agricultural commodities include the combined residues of (free and bound) metolachlor and its metabolites, determined as the derivatives, CGA-37913 and CGA-47951, each expressed as parent compound. Existing tolerances for metolachlor have been reassessed. In summary, 24 tolerances are to be revoked, 2 tolerances are to be established, 19 tolerances are to be raised, 8 tolerances are to be lowered, 18 tolerances remain unchanged, and 19 tolerances are to be determined when appropriate residue data is submitted. Tolerance petitions for *s*-metolachlor have also been assessed. In summary, 2 tolerances are to be revoked, 2 tolerances are to be established, 20 tolerances are to be raised, 9 tolerances are to be lowered, 20 tolerances will remain unchanged, and 24 tolerances will be determined when appropriate residue data are submitted. In total, 81 tolerances have been reassessed.

The Agency has considered new use petitions for sunflower, sugar beets, tomatoes, spinach, and grass grown for seed in the TRED. The residue chemistry data for sunflower and sugar beets are currently under review; however, a decision on permanent tolerances for these commodities cannot be

made until an occupational assessment has been conducted. Because the scope of this decision is limited to tolerance reassessment, an occupational assessment was not performed. Additional new use tolerance petitions are pending in the Registration Division for asparagus, carrots, Swiss chard, all peppers, horseradish, and rhubarb.

In conjunction with the March 22, 2002 Federal Register Notice (OPP-66292A; FRL-6823-8), existing use of metolachlor in stone fruits and almonds was cancelled. Almonds will, however, remain in the dietary assessment, as there is a crop group tolerance that exists for tree nuts, and almonds are considered part of the tree nut crop group.

Permanent tolerances for metolachlor residues have been established on various plant commodities ranging from 0.1 ppm in/on numerous commodities to 30.0 ppm in/on peanut forage and hay [40 CFR §180.368(a)]. Time-limited tolerances associated with section 18 emergency exemptions have been established for metolachlor residues in/on grass forage and hay, spinach, and tomato commodities [40 CFR §180.368(b)]. Tolerances associated with regional registrations have also been established for metolachlor residues in/on dry bulb onions, cabbage, and various peppers (chili, Cubanelle, and tabasco) [40 CFR §180.368(c)].

Tolerances for metolachlor currently cover residues of *s*-metolachlor on the same commodities for the same use pattern when the maximum *s*-metolachlor use rate is 63% the use rate of metolachlor. Separate tolerances will be established under §180.368 for *s*-metolachlor. Tolerances for metolachlor will be listed under §180.368(a)(1) through (d)(1), and tolerances for *s*-metolachlor will be listed under §180.368(a)(2) through (d)(2). A summary of the tolerance reassessment and recommended modifications in commodity definitions for metolachlor and *s*-metolachlor are presented in Tables 1 and 2, respectively.

Based upon the available legume vegetable data, the current tolerance on seed and pod vegetables (excluding soybean) should be replaced by separate tolerances on the crop subgroups for edible-podded legume vegetables, dried shelled peas and beans (except soybeans), and succulent shelled peas and beans. The metolachlor soybean processing study indicates that a separate tolerance should be established for soybean hulls (metolachlor only) and peanut processing data indicate that a separate tolerance should be established for peanut meal. Because peanut forage and rice forage are no longer considered significant feed items, these tolerances will be revoked as they are no longer regulated by the Agency. Tolerances on milo commodities will be revoked as these commodities are covered by tolerances on sorghum commodities.

Tolerances for metolachlor and *s*-metolachlor on corn forage and stover, peanut nutmeat and hay, nongrass livestock feeds, sorghum forage, and soybean forage will be lowered, and tolerances on sorghum stover, spinach, eggs, fat, meat and meat byproducts of poultry, and the fat, meat, and meat byproducts (excluding kidney) of cattle, goats, horse, and sheep will be increased. The Agency has determined that additional residue data are required to reassess tolerances for the following

crops/commodities: cabbage, dry bulb onions, peppers, grass hay and forage, succulent shelled peas and beans, representative rotational cereal grains. Because temporary tolerances are currently listed for metolachlor residues in/on grass forage and grass hay, a revised section F proposing appropriate permanent tolerances should be submitted to the Registration Division.

Tolerances for residues of metolachlor in/on commodities of barley, buckwheat, millet, oats, rice, rye, wheat, and the nongrass livestock feeds group were initially established to cover residues of metolachlor in these crops when they were planted as rotational crops following a primary crop that was treated with metolachlor. Tolerances on these crops are currently listed in Section §180.368(a). Tolerances for these crops will be reassigned to Section §180.368(d) which is reserved for indirect or inadvertent residues.

For livestock commodities, the available feeding studies and calculated maximum theoretical dietary burdens (MTBDs) for livestock indicate that the existing tolerances are adequate for milk and kidneys of cattle, goats, horses, and sheep. Tolerances for all hog commodities will be revoked, along with the separate tolerances for livestock liver and poultry. Tolerances for eggs, fat, meat and meat byproducts of poultry, and the fat, meat, and meat byproducts (excluding kidney) of cattle, goats, horse, and sheep will be increased to 0.04 ppm, which is the limit of quantitation (LOQ) for the current enforcement method.

No maximum residue limits (MRLs) for either metolachlor or *s*-metolachlor have been established or proposed by Codex, Canada, or Mexico for any agricultural commodity; therefore, no compatibility questions exist with respect to U.S. tolerances.

Table 1. Tolerance Reassessment Summary for Metolachlor

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Tolerances listed under 40 CFR §180.368(a):				
Almond, hulls	0.3	Data were not available for review (DNA)	TBD	
Barley, fodder	0.5	Not applicable (NA)	Reassign to 180.368(d) To be determined (TBD)	Additional data are required. The definition for fodder will be changed to <i>Barley, straw</i>
Barley, grain	0.1			
Buckwheat, grain	0.1			
Cabbage	1.0	NA	Revoke	Registered uses (SLNs) on cabbage have been canceled.

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Cattle, fat	0.02	Extrapolating to a 1x feeding level, maximum combined residues would be <0.011 ppm in fat, <0.016 ppm in meat, 0.035 ppm in liver, and 0.11 ppm in kidney.	0.04	Tolerances for fat, meat, and meat byproducts (except kidney) will be set at the method LOQ of 0.04 ppm. The tolerance for liver will be revoked, and the tolerance for kidney will remain at 0.2 ppm.
Cattle, kidney	0.2		0.20	
Cattle, liver	0.05		Revoke	
Cattle, meat	0.02		0.04	
Cattle, meat byproducts (exc. liver and kidney)	0.02		0.04	
Celery	0.1	NA	Revoke	Registered uses (SLNs) on celery have been canceled.
Corn, fodder	8.0	field (0.11-2.81) sweet (0.24-5.54)	6.0	<i>Corn, Stover.</i> The available metolachlor residue data indicate that the tolerance can be lowered to 6.0 ppm
Corn, forage	8.0	field (<0.12-3.02) sweet (0.27-5.75)	6.0	The available metolachlor residue data indicate that the tolerance can be lowered to 6.0 ppm
Corn, fresh (inc. sweet) (K+CWHR)	0.1	<0.08-<0.10	0.10	<i>Corn, sweet (K+CWHR)</i>
Corn, grain	0.1	<0.08	0.10	
Cotton, undelinted seed	0.1	<0.08	0.10	
Egg	0.02	Residues were not detected in eggs of hens dosed at up to 5.7x the MTDB	0.04	The tolerance for eggs will be set at the combined LOQ for the enforcement method.
Goat, fat	0.02	See cattle above	0.04	See cattle above.
Goat, kidney	0.2		0.20	
Goat, liver	0.05		Revoke	
Goat, meat	0.02		0.04	
Goat, meat byproducts (exc. liver and kidney)	0.02		0.04	
Hog, fat	0.02	NA	Revoke	Based on the results of the ruminant feeding study and a MTDB for swine of 0.315 ppm, there is no reasonable expectation of finding quantifiable residues in hog tissues [40 CFR 180.6(a)(3)].
Hog, kidney	0.2			
Hog, liver	0.05			
Hog, meat	0.02			
Hog, meat byproducts (exc. liver and kidney)	0.02			

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Horse, fat	0.02	See cattle above	0.04	See cattle above.
Horse, kidney	0.2		0.20	
Horse, liver	0.05		Revoke	
Horse, meat	0.02		0.04	
Horse, meat byproducts (exc. liver and kidney)	0.02		0.04	
Legume vegetables group foliage (exc. soybean forage and hay)	15.0	forage (0.44-11.5) hay (0.31-2.2)	15	Residue data for forage (vines) reflect a -60-day PHI and residue data on hay reflect at 120 day PHI.
Milk	0.02	Extrapolating to a 1x feeding level, maximum combined residues in milk would be 0.004 ppm	0.02	
Millet, fodder	0.5	NA	Reassign to 180.368(d) TBD	Additional data are required. The definition for fodder will be changed to <i>millet, straw</i> .
Millet, forage	0.5			
Millet, grain	0.1			
Milo, fodder	0.5	NA	Revoke	Residues on milo commodities are covered by tolerances on sorghum.
Milo, forage	0.5			
Milo, grain	0.1			
Nongrass animal feed (forage, fodder, straw, hay) group	3.0	forage - <0.08-0.54 hay - <0.08-<0.47	1.0 Reassign to 180.368(d)	The available alfalfa and clover data indicate that the tolerance can be reduced to 1.0 ppm.
Oats, fodder	0.5	NA	Reassign to 180.368(d) TBD	Additional data are required. The definition for fodder will be changed to <i>oats, straw</i> .
Oats, forage	0.5			
Oats, grain	0.1			
Peanut	0.5	<0.08-0.19	0.20	<i>Peanut, nutmeats</i> . New residue data indicate that the tolerance can be lowered to 0.2 ppm.
Peanut, forage	30.0	NA	Revoke	Peanut forage is no longer listed as a regulated commodity of peanuts
Peanut, hay	30.0	1.04-16.5	20.0	New residue data indicate that the tolerance can be lowered to 20.0 ppm.
Peppers, bell	0.1	<0.02-0.108	Revoke	Registered uses (SLNs) on peppers have been canceled.
Potato	0.2	<0.08-0.14	0.20	

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Poultry, fat	0.02	Residues were not detected in tissues of hens dosed at up to 5.7x the MTDB	0.04	Tolerances for poultry tissues will be set at the combined LOQ for the enforcement method, and the separate tolerance for liver will be revoked.
Poultry, liver	0.05		Revoke	
Poultry, meat	0.02		0.04	
Poultry, meat byproducts (exc. liver)	0.02		0.04	
Rice, fodder	0.5	NA	Reassign to 180.368(d) TBD	Additional data are required. The tolerance for rice forage will be revoked as it is not a regulated commodity, and the definition for fodder will be changed to <i>rice, straw</i> .
Rice, forage	0.5		Revoke	
Rice, grain	0.1		Reassign to 180.368(d) TBD	
Rye, fodder	0.5	NA	Reassign to 180.368(d) TBD	Additional data are required. The tolerance for rye fodder will be changed to <i>rye, straw</i> .
Rye, forage	0.5			
Rye, grain	0.1			
Safflower, seed	0.1	<0.08	0.10	
Seed and pod vegetables (exc. soybean)	0.3	<0.08-0.44	0.50	<i>Edible-podded legume vegetables subgroup</i> . The available data support a tolerance of 0.5 ppm on this subgroup.
		<0.08-<0.11	0.10	<i>Dried shelled pea and bean (except soybean) subgroup</i> . The available data support a tolerance of 0.1 ppm on this subgroup.
		NA	TBD	<i>Succulent shelled pea and bean subgroup</i> . Data are required for this subgroup.

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Sheep, fat	0.02	see cattle above	0.04	See cattle above
Sheep, kidney	0.2		0.20	
Sheep, liver	0.05		revoke	
Sheep, meat	0.02		0.04	
Sheep, meat byproduct (exc. liver and kidney)	0.02		0.04	
Sorghum grain, fodder	2.0	<0.11-3.19	4.0	<i>Sorghum grain, stover</i> The available data support increasing the tolerance on stover to 4.0 ppm and decreasing the tolerance on forage to 1.0 ppm
Sorghum grain, forage	2.0	<0.08-0.45	1.0	
Sorghum grain, grain	0.3	0.08-0.19	0.30	
Soybean	0.2	<0.08-<0.18	0.20	<i>Soybean, seed</i>
Soybean, forage	8.0	0.15-4.37	5.0	The available data indicate that the tolerance on forage can be lowered to 5.0 ppm
Soybean, hay	8.0	0.38-6.90	8.0	
Fruit, stone, group	0.1	<0.08-0.08	Revoke	Available data support a single application to tree nut orchards.
Nuts, tree, group	0.1	<0.08-0.08	0.10	
Wheat, fodder	0.5	NA	Reassign to 180.368(d) TBD	Additional data are required. The definition for fodder will be changed to <i>wheat, straw</i> .
Wheat, forage	0.5			
Wheat, grain	0.1			
Time-limited Tolerances Listed under 40 CFR §180.368(b):				
Grass, forage	10.0 ^b	0.04-8.4	10	Permanent tolerances are pending.
Grass, hay	0.2 ^b	<0.08-0.11	0.20	
Spinach	0.3 ^b	<0.08-0.38	0.50	New data support an increased permanent tolerance for metolachlor residues of 0.5 ppm in/on spinach (PP# 8E5011).
Tomato	0.1 ^c	<0.08-0.08	0.10	New data support a permanent tolerance for metolachlor residues of 0.1 ppm in/on tomatoes (PP#6F4751).

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/ <i>Correct Commodity Definition</i>
Tomato, puree	0.3 ^c	<0.10	Revoke	New data indicate that the tolerances for metolachlor residues in tomato paste and puree are not necessary.
Tomato, paste	0.6 ^c	<0.10	Revoke	
Tolerances with Regional Registrations Listed under 40 CFR §180.368(c):				
Onion, dry bulb	1.0	<0.08-<0.43 ppm	Revoke	Registered uses (SLNs) of metolachlor on onions and various peppers have been canceled.
Pepper, chili	0.5	<0.02-0.03	Revoke	
Pepper, tabasco	0.5	0.09-0.45	Revoke	
Pepper, cubanelle	0.1	0.03-0.04	Revoke	
Tolerances Needed under 40 CFR §180.368(a)(1):				
Cotton, gin byproducts	None	0.08-3.2	4.0	New residue data indicates that a tolerance of 4.0 ppm may be established.
Peanut, meal	None	<3.85	0.40	The available processing data indicates that residues concentrate in presscake (1.75x).
Soybean, hull	None	<0.22	0.30	The available metolachlor processing data indicates that residues concentrate in soybean hulls (average of 1.2x).

^a Expressed in terms of metolachlor

^b Time limited tolerances on grass forage and hay and spinach were set to expire on 12/31/01.

^c Time limited tolerances on tomato commodities are set to expire on 6/30/02.

Table 2. Tolerance Reassessment Table For S-Metolachlor

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Tolerances needed under 40 CFR §180.368(a)(2):				
Cabbage	1.0	NA	TBD	Additional data are required to support the use of S-metolachlor on cabbage and the registrant will pursue a section 3 registration.
Cattle, fat	0.02	Extrapolating to a 1x feeding level, maximum combined residues would be <0.011 ppm in fat, <0.016 ppm in meat, 0.035 ppm in liver, and 0.11 ppm in kidney.	0.04	Tolerances for fat, meat, and meat byproducts (except kidney) will be set at the method LOQ of 0.04 ppm, but the tolerance for kidney will remain at 0.2 ppm.
Cattle, kidney	0.2		0.20	
Cattle, meat	0.02		0.04	
Cattle, meat byproducts (exc. kidney)	0.02		0.04	
Celery	0.1	<0.08	0.10	The available metolachlor data support a tolerance of 0.10 ppm for s-metolachlor.
Corn, fodder	8.0	field (0.11-2.81) sweet (0.24-5.54)	6.0	<i>Corn, Stover.</i> The available metolachlor residue data indicate that the tolerance can be lowered to 6.0 ppm
Corn, forage	8.0	field (<0.12-3.02) sweet (0.27-5.75)	6.0	The available metolachlor residue data indicate that the tolerance can be lowered to 6.0 ppm
Corn, fresh (inc. sweet) (K+CWHR)	0.1	<0.08-<0.10	0.10	<i>Corn, sweet (K+CWHR)</i> Supported by the available metolachlor data.
Corn, grain	0.1	<0.08	0.10	<i>Corn, Field, grain.</i> Supported by the available metolachlor data.
Cotton, undelinted seed	0.1	<0.08	0.10	Supported by the available metolachlor data.
Cotton, gin byproducts	NA	0.08-3.2	4.0	New metolachlor residue data indicates that a tolerance of 4.0 ppm may be established.

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Egg	0.02	Residues were not detected in eggs of hens dosed at up to 5.7x the MTDB	0.04	The tolerance for eggs will be set at the combined LOQ for the enforcement method.
Goat, fat	0.02	See cattle above	0.04	See cattle above
Goat, kidney	0.2		0.20	
Goat, meat	0.02		0.04	
Goat, meat byproducts (exc. kidney)	0.02		0.04	
Horse, fat	0.02	See cattle above	0.04	See cattle above.
Horse, kidney	0.2		0.20	
Horse, meat	0.02		0.04	
Horse, meat byproducts (exc. kidney)	0.02		0.04	
Legume vegetables group foliage (exc. soybean forage and hay)	15.0	forage (0.44-11.5) hay (0.31-2.2)	15	Residue data for forage (vines) reflect a -60-day PHI and residue data on hay reflect at 120 day PHI.
Milk	0.02	Extrapolating to a 1x feeding level, maximum combined residues in milk would be 0.004 ppm	0.02	
Peanut	0.5	<0.09	0.20	<i>Peanut, nutmeats.</i> New metolachlor residue data indicate that the tolerance can be lowered to 0.2 ppm.
Peanut, hay	30.0	4.19	20.0	New metolachlor residue data indicate that the tolerance can be lowered to 20.0 ppm.
Peppers, bell	0.1	<0.02-0.108	TBD	Additional data are required for a general tolerance on peppers.
Potato	0.2	<0.08-0.14	0.20	Supported by the available metolachlor data.
Poultry, fat	0.02	Residues were not detected in tissues of hens dosed at up to 5.7x the MTDB	0.04	Tolerances for poultry tissues will be set at the combined LOQ for the enforcement method, and the separate tolerance for liver will be revoked.
Poultry, meat	0.02		0.04	
Poultry, meat byproducts (exc. liver)	0.02		0.04	

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/Correct Commodity Definition
Safflower, seed	0.1	<0.08	0.10	Supported by the available metolachlor data.
Seed and pod vegetables (exc. soybean)	0.3	<0.08-0.44	0.50	<i>Edible-podded legume vegetables subgroup.</i> The available data support a tolerance of 0.5 ppm on this subgroup.
		<0.08-<0.11	0.10	<i>Dried shelled pea and bean (except soybean) subgroup</i> The available data support a tolerance of 0.1 ppm on this subgroup.
		NA	TBD	<i>Succulent shelled pea and bean subgroup</i> Data are required for this subgroup.
Sheep, fat	0.02	see cattle above	0.04	See cattle above
Sheep, kidney	0.2		0.20	
Sheep, meat	0.02		0.04	
Sheep, meat byproducts (exc. kidney)	0.02		0.04	
Sorghum grain, fodder	2.0	<0.11-3.19	4.0	<i>Sorghum, stover.</i> The available data support increasing the tolerance on stover to 4.0 ppm and decreasing the tolerance on forage to 1.0 ppm
Sorghum grain, forage	2.0	<0.08-0.45	1.0	
Sorghum grain, grain	0.3	0.08-0.19	0.30	
Soybean	0.2	<0.08-<0.18	0.20	<i>Soybean, seed.</i> Supported by the available metolachlor and <i>s</i> -metolachlor data.
Soybean, forage	8.0	0.15-4.37	5.0	The available metolachlor data indicate that the tolerance on forage can be lowered to 5.0 ppm.
Soybean, hay	8.0	0.38-6.90	8.0	

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/ <i>Correct Commodity Definition</i>
Soybean, hulls	None	<0.14	None	New <i>s</i> -metolachlor data indicate that <i>s</i> -metolachlor residues in/on soybean hulls will not exceed the established tolerance on soybean seeds.
Time-limited Tolerances needed under 40 CFR §180.368(b)(2):				
Grass, forage	10.0 ^b	0.04-8.4	10	Permanent tolerances are pending.
Grass, hay	0.2 ^b	<0.08-0.11	0.20	
Spinach	0.3 ^b	<0.08-0.38	0.50	New metolachlor data support an increased permanent tolerance for <i>s</i> -metolachlor residues of 0.5 ppm in/on spinach.
Tomato	0.1 ^c	<0.08-0.08	0.10	New metolachlor data support a permanent tolerance for <i>s</i> -metolachlor residues of 0.1 ppm in/on tomatoes.
Tomato, puree	0.3 ^c	<0.10	revoke	New metolachlor residue data indicate that the tolerances for <i>s</i> -metolachlor residues in tomato paste and puree are not necessary.
Tomato, paste	0.6 ^c	<0.10	revoke	
Tolerances with Regional Registrations needed under 40 CFR §180.368(c)(2):				
Onion, dry bulb	1.0	<0.08-<0.43 ppm	0.50	The available metolachlor residue data support lowering the tolerance to 0.5 ppm; however, additional data are required to support the use of <i>s</i> -metolachlor and the registrant will pursue a section 3 registration.

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/ <i>Correct Commodity Definition</i>
Pepper, chili	0.5	<0.02-0.03	0.10	With the exception of chili peppers, the available residue data support the current tolerances. Tolerances for chili peppers could be lowered to 0.1 ppm. If a general tolerance on peppers is established at 0.5 ppm, than these separate tolerances will be revoked.
Pepper, tabasco	0.5	0.09-0.45	0.50	
Pepper, cubanelle	0.1	0.03-0.04	0.10	
Tolerances Needed under 40 CFR §180.368(d)(2):				
Barley, grain	0.5	NA	TBD	Additional data are required.
Barley, hay	None			
Barley, straw	0.1			
Buckwheat, grain	0.1	NA	TBD	Additional data are required
Millet, forage	0.5	NA	TBD	Additional data are required.
Millet, grain	0.1			
Millet, hay	None			
Millet, straw	0.5			
Nongrass animal feed (forage, fodder, straw, hay) group	3.0	forage - <0.08-0.54 hay - <0.08-<0.47	1.0	The available alfalfa and clover data indicate that the tolerance can be reduced to 1.0 ppm.
Oats, forage	0.5	NA	TBD	Additional data are required.
Oats, grain	0.1			
Oats, hay	None			
Oats, straw	0.5			
Peanut, meal	None	<3.85	0.40	The available metolachlor processing data indicates that residues concentrate in presscake (1.75x).
Rice, grain	0.1	NA	TBD	Additional data are required.
Rice, straw	0.5			

Commodity	Current Tolerance (ppm) ^a	Range of residues (ppm)	Tolerance Reassessment (ppm)	Comment/ <i>Correct Commodity Definition</i>
Rye, forage	0.5	NA	TBD	Additional data are required.
Rye, grain	0.1			
Rye, straw	0.5			
Wheat, forage	0.5	NA	TBD	Additional data are required.
Wheat, grain	0.1			
Wheat, hay	None			
Wheat, straw	0.5			

^a Expressed in terms of s-metolachlor

^b Time limited tolerances on grass forage and hay and spinach were set to expire on 12/31/01.

^c Time limited tolerances on tomato commodities are set to expire on 6/30/02.

In completing this TRED, the Agency has identified certain label amendments which should be implemented. A tabular summary of both the metolachlor and *s*-metolachlor label amendments (Tables 3 and 4, respectively) describe how label language should be amended. The implementation of these amendments will ensure that the reassessed tolerances are adequate for the maximum label rates, and will also ensure consistency among the labels.

In order to be eligible for reregistration, registrants supporting metolachlor and *s*-metolachlor registrations must submit label applications for amended registration. This application should include the following items: a completed EPA application form 8570-1, five copies of the draft label with all label amendments outlined in Tables 3 and 4 of this document incorporated, and a description on the application, such as, "Responding to TRED Document". All amended labels need to be submitted within 8 months of signature of this document. The Product Reregistration Division (PRB) contact is Jane Mitchell at (703)308-8061.

Table 3. Label Amendments for Food/Feed Use Patterns Subject to Tolerance Reassessment for Metolachlor

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Citrus (nonbearing)					
Broadcast application to soil Ground equipment	7.8 lb/gal EC [100-711]	3.9	1	NA	Applications should be made with a minimum of 10 gallons of water/A. Do not apply within 30 days of transplanting nonbearing trees into the grove. Do not apply to trees that will bear harvestable fruit within 12 months of application. Do not graze livestock in treated areas.
Grapes (nonbearing)					
Broadcast application to soil Ground equipment	7.8 lb/gal EC [100-711]	3.9	1	NA	Applications should be made with a minimum of 10 gallons of water/A. Do not apply within 30 days of transplanting new vines into the vineyard. Do not apply to vines that will bear harvestable fruit within 12 months of application. Do not graze livestock in treated areas.
Corn (all types) - See Below					

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Broadcast application in fall to crop stubble after harvest Ground or aerial equipment	8 lb/gal EC [100-597] [100-673] 7.8 lb/gal EC [100-711]	medium/fine (>2.5% OM) - 3.0 or 3.8 (6-20% OM) - 3.8-4.0	2 or (b + a) +1	NS	<p>The maximum seasonal rate is 5.9-6.0 lb ai/A on all labels except the 25% G, which has a maximum seasonal rate of 3.8 lb ai/A. A 30-day PHI is specified for grazing or feeding of treated forage.</p> <p>The fall application should not be applied to frozen ground, and this use is restricted to IA, MN, ND, SD, WI and portions of NE and IL.</p> <p>The preplant surface application in spring is restricted to the following states: CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV, and WY. On medium and fine soils, this type of application may be made as a split application, with b applied 30-45 days prior to planting and the remainder at planting, or as a single or split application at <30 days prior to planting. On coarse soils, this type of application should be made as a single application no earlier than 2 weeks prior to planting.</p> <p>Do not use on peat or muck soils.</p>
Broadcast single or split preplant surface application to minimum- or no-till systems in spring Ground or aerial equipment		coarse - 2.0 medium - 2.5 fine - 3.0 6-20% OM - 3.8-4.0			
Broadcast preplant incorporated or pre-emergence application in spring Ground or aerial equipment		coarse - 2.0 medium - 2.5 fine (<3% OM) - 2.5 fine (3% OM) - 3.0 6-20% OM - 3.8-4.0			
Broadcast post-emergence until lay-by (corn 40 inches in height) Ground or aerial equipment	8 lb/gal EC [100-597] [100-673] 7.8 lb/gal EC [100-711]	3.0			

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Broadcast early preplant application Ground or aerial equipment	3.23 lb/gal EC [100-710]	coarse - 1.9 medium - 2.4 fine - 2.4-2.8	2 or (b + a) + 1	NS	<p>The maximum seasonal rate is 3.0 lb ai/A.</p> <p>A 30-day PHI is specified for grazing or feeding of treated forage.</p> <p>The fall application should not be applied to frozen ground, and this use is restricted to IA, MN, ND, SD, WI and portions of NE and IL.</p> <p>The preplant surface application in spring is restricted to the following states: CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV, and WY. On medium and fine soils, this type of application may be made as a split application, with b applied 30-45 days prior to planting and the remainder at planting, or as a single or split application at <30 days prior to planting. On coarse soils, this type of application should be made as a single application no earlier than 2 weeks prior to planting.</p> <p>Do not use on peat or muck soils.</p>
Broadcast preplant surface, preplant incorporated or pre-emergence application Ground or aerial equipment		coarse (<3% OM) - 1.2 coarse (\$3% OM) - 1.5-1.9 medium (<3% OM) - 1.5-1.9 medium (\$3% OM) - 1.9 fine (<3% OM) - 1.9 fine (\$3% OM) - 2.4-2.8	1		
Broadcast post-emergence or post-emergence-directed application Ground or aerial equipment		coarse - 1.2-1.5 medium - 1.9 fine - 2.4			

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Cotton					
Preplant incorporated broadcast in NM, OK, and TX Ground equipment	8 lb/gal EC [100- 597] [100-673]	sandy loam - 1.5 medium/fine- 2.0	2	NS	No PHI is specified. The maximum seasonal rate is 3.0 lb ai/A for coarse soils and 4.0 lb ai/A for medium and fine soils. Do not use in Gaines County, TX. Do apply to sand or loamy sand soils, or to a Taloka silt loam. Do not graze or feed forage or fodder from cotton to livestock.
Pre-emergence broadcast in AR, LA, MS, NM, OK, TN, TX, and in the bootheel of MO Ground or aerial equipment		sandy loam - 1.5 medium/fine- 2.0			
Post-emergence broadcast or directed application when plants are 3-12 inches in height Ground or aerial equipment		2.0			
Preplant incorporated broadcast in NM, OK, and TX Ground equipment	7.8 lb/gal EC [100- 711]	sandy loam - 1.5 medium/fine- 2.0	1	NA	No PHI is specified. Do not use in Gaines County, TX. Do apply to sand or loamy sand soils, or to a Taloka silt loam. Do not graze or feed forage or fodder from cotton to livestock.
Pre-emergence broadcast in AR, LA, MS, NM, OK, TN, TX, and in the bootheel of MO Ground or aerial equipment		sandy loam - 1.5 medium/fine- 2.0			

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Legume Vegetables (excluding soybeans)					
Broadcast application in fall to crop stubble after harvest Ground or aerial equipment	8 lb/gal EC [100-597] [100-673]	medium/fine (>2.5% OM) - 3.0	2	NS	A 120-day PHI is specified for cutting hay. The maximum seasonal rate is 3.0 lb ai/A. Do not use on English peas in the northeastern U.S. The fall application should not be applied to frozen ground and is restricted to IA, MN, ND, SD, WI and portions of NE and IL.
Broadcast preplant incorporated or pre-emergence in spring Ground or aerial equipment	7.8 lb/gal EC [100-711]	coarse - 2.0 medium - 2.5 fine (<3% OM)- 2.5 fine (\$3% OM)- 3.0			
Peanut					
Pre- or Post-plant incorporated (prior to crop germination) Ground equipment	8 lb/gal EC [100-597] [100-673]	2.0	1 or 2-3	NS	All labels, except the 25% G, specify a 30-day PHI/PGI for forage and fodder and a 90-day PHI for mature peanuts. A maximum seasonal rate of 4 lb ai/A is specified on the two labels [100-597 and -673] allowing more than one application per season.
Pre-emergence broadcast Ground or aerial equipment	7.8 lb/gal EC [100-711]	2.0 (NM, OK, TX) 3.0 (Southeast)			
Post-emergence directed at lay-by Ground or aerial equipment	8 lb/gal EC [100-597] [100-673]	2.0			

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Potato					
Pre- or post-plant incorporated (prior to crop emergence) Ground equipment	8 lb/gal EC [100-597] [100-673] 7.8 lb/gal EC [100-711]	3.0	2	NS	A 60-day PHI is specified for applications made at-planting to drag-off and a 40-day PHI is specified for applications at lay-by. The maximum seasonal rate is 5.5 lb ai/A for formulations allowing multiple applications and 3.9-4.0 lb ai/A for the 7.8 lb/gal EC and 25% G formulation. Do not use on muck or peat soils or apply to sweet potatoes or yams. Do not use both as a pre-emergence and incorporated application. Do not use in Kern County, CA
Pre-emergence application Ground or aerial equipment		2.9-3.0 (<6% OM) 3.8-4.0 (6-20% OM)			
Post-emergence broadcast after hilling to lay-by Ground or aerial equipment	8 lb/gal EC [100-597] [100-673]	2.5			
Safflower					
Preplant incorporated or pre-emergence broadcast Ground or aerial equipment	8 lb/gal EC [100-597] [100-673] 7.8 lb/gal EC [100-711]	coarse - 2.0 medium - 2.5 fine (<3% OM)- 2.5 fine (\$3% OM)- 3.0	1	NA	No PHI is specified.

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Sorghum (grain and forage types)					
Single or split preplant surface application to minimum- or no-till systems in CO, IA, IL, KS, MO, NE, and SD Ground or aerial equipment	8 lb/gal EC [100-597] [100-673] 7.8 lb/gal EC [100-711]	coarse - 2.0 medium - 2.25 fine - 2.5	1 or (b + a)	NA	Use only on sorghum that is seed treated with Concep or Screen. Do not make more than one application per year, with the exception of the split preplant surface applications. The preplant surface application may be made as a split application on fine and medium soils, with b applied 30-45 days prior to planting and the remainder at planting, or as a single or split application at <30 days prior to planting. On coarse soils, this type of application should be made as a single application no earlier than 2 weeks prior to planting. Early preplant applications should not be made to coarse soils nor to medium soils with <1% OM. Preplant surface, preplant incorporated or pre-emergence applications of the 3.23 lb/gal EC's should not be made in NM, the TX Panhandle, Gulf Coast, and Blacklands areas. The preplant incorporated application of the 3.23 lb/gal EC's should not be made in AZ or the Imperial Valley of CA.
Preplant incorporated or pre-emergence application Ground or aerial equipment					
Broadcast early preplant application to minimum- or no-till systems in IA, IL, KS, MO, NE, SD, and TX Ground or aerial equipment	3.23 lb/gal EC [100-710]	medium (>1% OM) - 2.2 fine (<1.5% OM) - 2.2 fine (>1.5% OM) - 2.4	1		
Preplant surface, preplant incorporated or pre-emergence application Ground or aerial equipment		medium/fine (>1% OM) - 1.9			

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Soybean					
Broadcast application in fall to crop stubble after harvest Ground or aerial equipment	8 lb/gal EC [100-597] [100-673] 7.8 lb/gal EC [100-711]	medium/fine (>2.5% OM) - 2.9-3.0	1	NS	The maximum seasonal rate is 3.8-4.0 lb ai/A. There is no PHI specified for forage and hay and there is no restriction against the feeding of forage and hay to livestock. The fall application should not be applied to frozen ground and is restricted to IA, MN, ND, SD, WI and portions of NE and IL. The springtime preplant surface application is restricted to the following states: CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV, and WY. On medium and fine soils, this type of application may be made as a split application, with b applied 30-45 days prior to planting and the remainder at planting, or as a single or split application at <30 days prior to planting. On coarse soils, this type of application should be made as a single application no earlier than 2 weeks prior to planting.
Broadcast preplant surface application to minimum- or no-till systems in spring Ground or aerial equipment		coarse - 2.0 medium - 2.4-2.5 fine - 2.9-3.0 6-20% OM - 3.8-4.0	1 or (b + a)		
Broadcast preplant incorporated or pre-emergence application in spring Ground or aerial equipment		coarse - 2.0 medium - 2.5 fine (<3% OM) - 2.5 fine (≥3% OM) - 3.0 6-20% OM - 4.0	1		

Site Application Type Application Timing Application Equipment	Formulation ^a [EPA Reg. No.]	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Tree nuts					
Broadcast application to soil Ground equipment	7.8 lb/gal EC [100-711]	3.8	1	NA	Applications should be made with a minimum of 10 gallons of water/A. Do not apply within 30 days of transplanting nonbearing trees into the orchard. Do not graze livestock in treated areas or feed livestock cover crops from treated areas.

Footnotes.

^a Maximum use rates for most crops are based on soil textural class (coarse, medium, or fine) and the % organic matter (OM).

^b Minimum application volumes of 5 and 2 gal/A are specified for ground and aerial applications, respectively, unless otherwise noted. The Re-entry interval (REI) is 24 hours for all formulations except EPA Reg. No. 100-711, which has a REI of 12 hours. The labels for metolachlor prohibit the rotation to crops except the following: (1) crops on the label can be replanted immediately provided a second metolachlor application is not made; (2) barley, oats, rye, or wheat may be planted 4½ months, alfalfa 4 months, tomatoes 6 months, and clover 9 months following treatment; (3) root crops, tobacco, buckwheat, milo, rice, cabbage or peppers may be planted the spring following treatment; (4) following lay-by or multiple treatments applied the previous season, tobacco, cabbage or peppers may be planted in spring. Additional rotational crop restrictions exist for the MAI formulation [EPA Reg. Nos. 100-710]; however, restrictions on this label are based on atrazine.

Table 4. Label Amendments for Food/Feed Use Patterns Subject to Tolerance Reassessment for S-Metolachlor

Site	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Alfalfa (grown for seed)					
Broadcast application Ground equipment	7.6 lb/gal EC [NV990006] [OR990035]	coarse/medium - 3.2	1	NA	Applications should be made with a minimum of 20 gallons of water/A. Do not cut, feed, or graze treated forage, fodder, or hay of alfalfa, or use seeds from treated fields for sprouts. Do not use any portion of the treated field for human or animal consumption.
Cabbage (transplanted)					
Broadcast surface application Ground equipment	7.6 lb/gal EC [TX990009] [NJ990004] [NY990001] [PA990003] [DE990001] [OH990001]	1.3	1	NA	Application should be made within 48 hours of transplanting and in a minimum of 10-20 gallons of water/A.
	7.6 lb/gal EC [FL990006] [KY990002] [WI990007] [MA990002]	1.9			

Site	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Cabbage (direct-seeded)					
Broadcast application Ground equipment	7.6 lb/gal EC [TX990009] [NJ990004] [NY990001] [FL990006]	1.3	1	NA	Application should be made at the four-leaf stage and in a minimum of 10 gallons of water/A.
Broadcast pre-emergence or post-emergence application Ground equipment	7.6 lb/gal EC [FL990006]	sandy soils - 1.3 organic soils -3.8			Pre-emergence applications should be made immediately after seeding. Post-emergence applications should be made at least 20 days after seeding. Applications should be made with a minimum of 20 gallons of water/A.
Celery					
Broadcast application prior to or immediately after transplanting Ground equipment	7.6 lb/gal EC [WI990008] [FL990008]	coarse - 1.3 medium/fine - 1.6 OM >3% - 1.9	1	NA	Application of [FL990008] should not be made within 62 days of harvest.

Site	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Corn (all types)					
Broadcast application in fall to crop stubble after harvest Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-818] [100-964] [100-965] 7.6 lb/gal RTU ^d [100-829] 16% G [100-910]	medium/fine (>2.5% OM) - 1.9 6-20% OM - 2.4-2.5	2 or (b + a) + 1	NS	The maximum seasonal rate is 3.7 lb ai/A on all labels except the 16% G and 7.6 lb/gal RTU (2.4 lb ai/A/season) and the 2.4 lb/gal FIC (2 lb ai/A/season). A 30-day PHI is specified for grazing or feeding of treated forage. The fall application should not be applied to frozen ground, and this use is restricted to IA, MN, ND, SD, WI and portions of NE and IL.
Broadcast single or split preplant surface application to minimum- or no-till systems in spring Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-818] [100-964] [100-965] 7.6 lb/gal RTU ^d [100-829]	coarse - 1.3 medium - 1.6 fine - 1.6-1.9 6-20% OM - 2.4-2.5			The preplant surface application in spring is restricted to the following states: CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV, and WY. On medium and fine soils, this type of application may be made as a split application, with b applied 30-45 days prior to planting and the remainder at planting, or as a single or split application at <30 days prior to planting. On coarse soils, this type of application should be made as a single application no earlier than 2 weeks prior to planting.
Broadcast preplant incorporated or pre-emergence application in spring Ground or aerial equipment	2.4 lb/gal FIC [100-817] 2.4 lb/gal EC [100-886] 16% G [100-910]	coarse - 1.3 medium - 1.6 fine (<3% OM) - 1.6 fine (\$3% OM) - 1.6-1.9 6-20% OM - 2.4-2.5			Do not use on peat or muck soils.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.]^a	Maximum Single Application Rate^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations^c
Broadcast post-emergence until lay-by Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-818] [100-964] [100-965] 2.4 lb/gal FIC [100-817]	1.6-1.9			

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Corn (all types, continued)					
Broadcast early preplant application Ground or aerial equipment	3.33 lb/gal EC [100-827]	coarse - 1.3 medium - 1.6 fine - 1.8	1 or (b + a)	NA	The maximum seasonal rate is 3.7 lb ai/A. A 30-day PHI is specified for grazing or feeding of treated forage. The early preplant surface application may be applied as a split application (b + a) on medium and fine soil. On coarse soils, this type of application should be made as a single application no earlier than 2 weeks prior to planting. Do not use on peat or muck soils.
Broadcast preplant surface, preplant incorporated or pre-emergence application Ground or aerial equipment		coarse (<3% OM) - 0.8 coarse (\$3% OM) - 1.3 medium - 1.3 fine (<3% OM) - 1.3 fine (\$3% OM) - 1.8			
Broadcast post-emergence or post-emergence-directed application Ground or aerial equipment		coarse - 0.8-0.9 medium - 1.3 fine - 1.6			
Corn, field					
Broadcast single early preplant application Ground equipment	2.5 lb/gal EC [100-928]	coarse - 1.3 medium - 1.3 fine - 1.4	1	NA	The maximum seasonal rate is 1.4 lb ai/A. An 85-day PHI/PGI is specified. Early preplant applications should be made no earlier than two weeks before planting. Do not use on peat or muck soils. Do not apply to pop or sweet corn.
Broadcast preplant surface, preplant incorporated or pre-emergence application Ground equipment		coarse (<3% OM) - 1.0 coarse (\$3% OM) - 1.3 medium - 1.3 fine (<3% OM) - 1.3 fine (\$3% OM) - 1.4			

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Cotton					
Preplant incorporated broadcast in NM, OK, and TX Ground equipment	7.6 lb/gal EC [100-816] [100-818] [100-964] [100-965]	sandy loam - 1.0 medium/fine- 1.3	2	NS	No PHI is specified. The maximum seasonal rate is 1.9 lb ai/A for coarse soils and 2.5 lb ai/A for medium and fine soils. Do not use in Gaines County, TX. Do apply to sand or loamy sand soils, or to a Taloka silt loam. Do not graze or feed forage or fodder from cotton to livestock.
Pre-emergence broadcast in AR, LA, MS, NM, OK, TN, TX, and in the bootheel of MO Ground or aerial equipment		1.3			
Post-emergence broadcast or directed application when plants are 3-12 inches in height Ground or aerial equipment		7.6 lb/gal EC [100-816] [100-964]			
Post-emergence broadcast or directed application when plants are up to 6 inches in height Ground or aerial equipment	7.6 lb/gal EC [TX990008]	sandy loam - 1.0 medium/fine- 1.3	1	NA	Use only in Yoakum, Terry, Gaines, and Andrews Counties of TX. Do apply to sand or loamy sand soils.
Legume Vegetables (excluding soybeans)					
Broadcast application in fall to crop stubble after harvest Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-818] [100-964] [100-965]	medium/fine (>2.5% OM) - 1.9	2	NS	A 120-day PHI is specified for cutting hay. The maximum seasonal rate is 1.9 lb ai/A. Do not use on English peas in the northeastern U.S. The fall application should not be applied to frozen ground and is restricted to IA, MN, ND, SD, WI and portions of NE and IL.
Broadcast preplant incorporated or pre-emergence in spring Ground or aerial equipment		coarse - 1.3 medium - 1.6 fine (<3% OM)-1.6 fine (\$3% OM) 1.9			

Site	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Meadowfoam (grown for seed)					
Broadcast application Ground equipment	7.6 lb/gal EC [OR990042]	0.6	1	NA	Applications should be made with a minimum of 20 gallons of water/A. Do not feed or graze forage or fodder, cut meadowfoam for hay or forage, or use seeds from treated fields for sprouts. Do not use any portion of the treated field for human or animal consumption. Do not apply through irrigation systems.
Onion (dry bulb)					
Broadcast application Ground equipment	7.6 lb/gal EC [NY990001] [ID990016] [WA990023] [MN000001] [CO990002] [NM000001] [OH990001] [NJ990005] [UT000002] [OR990027] [WI990009] [TX990009] [VA990001]	1.3	2	NA	One application should be made at the two true leaf stage. A second application may be made 3-4 weeks later as needed in some states (CO, ID, NM, OR, UT, and WA) or when soils contain >5% OM in the other states (MN, NJ, NY, TX, VA, and WI) The maximum seasonal rate is 2.6 lb ai/A. A 60-day PHI is specified. Do not feed or graze animals on green forage or stubble, or harvest green onions. Do not apply through irrigation systems.

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Peach						
	Broadcast application to soil Ground equipment	7.6 lb/gal EC [NJ990011]	2.5	1	NA	Applications should be made with a minimum of 10 gallons of water/A. Do not apply within 30 days of transplanting nonbearing trees into the orchard. Do not graze livestock in treated areas or feed livestock cover crops from treated areas.
Peanut						
	Pre- or Post-plant incorporated (prior to crop germination) Ground equipment	7.6 lb/gal EC [100-816] [100-818] [100-964]	1.3	1 or 2	NS	The labels specify a 30-day PHI/PGI for forage and fodder and a 90-day PHI for mature peanuts. For the 16% G, only one application per season is permitted, with a maximum seasonal rate of 1.9 lb ai/A. For all other formulations, two applications are allowed and the maximum seasonal rate is 2.7 lb ai/A.
	Pre-emergence broadcast Ground or aerial equipment	[100-965] 16% G [100-910]	1.3 (NM, OK, TX) 1.9 (Southeast)			
	Post-emergence directed at lay-by Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-964]	1.3			

Site	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Peppers, bell (transplanted)					
Broadcast application Ground equipment	7.6 lb/gal EC [DE990001] [MA990002] [NJ990004] [NY990001] [OH990001] [PA990003]	1.0	1	NA	Application should be made within 48 hours of transplanting. Applications should be made with a minimum of 10-20 gallons of water/A. A 60- or 65-day PHI is specified.
	7.6 lb/gal EC [KY990001]	1.3			
Directed, shielded application to plastic-mulched row middles Ground equipment	7.6 lb/gal EC [FL990007]	1.0			
Peppers, bell or non-bell					
Broadcast application Ground equipment	7.6 lb/gal EC [TX990009]	1.0	1	NA	Application should be made within 48 hours of transplanting or by the 8-leaf stage to directed- seeded plants. A 60-day PHI is specified.

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.]^a	Maximum Single Application Rate^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations^c
Peppers, chile						
	Post-emergence basally-directed application Ground equipment	7.6 lb/gal EC [NM990002]	1.3	1	NA	Application should be made when peppers have 4-6 leaves. Applications should be made with a minimum of 20 gallons of water/A. A 65-day PHI is specified. Do not apply through irrigation systems.
Peppers, tabasco						
	Post-emergence basally-directed application Ground equipment	7.6 lb/gal EC [LA990013]	2.5	1	NA	Application may be made at lay-by (midseason) using a minimum of 10 gallons of water/A. A 7-day PHI is specified. Do not apply through irrigation systems.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Potato					
Pre- or post-plant incorporated (prior to crop emergence) Ground equipment	7.6 lb/gal EC [100-816] [100-818] [100-964]	1.9	1 or 2	NS	A 60-day PHI is specified for applications made at-planting to drag-off and a 40-day PHI is specified for applications at lay-by. The maximum seasonal rate is 3.4 lb ai/A for multiple applications or 2.4 lb ai/A for single applications. Do not use on muck or peat soils or apply to sweet potatoes or yams. Do not use both as a pre-emergence and incorporated application. Do not use in Kern County, CA
Pre-emergence application Ground or aerial equipment	[100-965] 16% G [100-910]	<6% OM - 1.9 6-20% OM -2.4-2.5			
Post-emergence broadcast after hilling to lay-by Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-964]	1.6			
Radish (grown for seed)					
Broadcast preplant incorporated application Ground equipment	7.6 lb/gal EC [WA990005] [OR990011]	1.3	1	NA	Applications should be made with a minimum of 20 gallons of water/A. Do not feed, cut, or graze radish tops for livestock feed, or use any portion of the treated crop for human or animal consumption. Do not apply through irrigation systems.
Safflower					
Broadcast preplant incorporated or pre-emergence in spring Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-818] [100-964] [100-965]	coarse - 1.3 medium - 1.6 fine (<3% OM)-1.6 fine (\$3% OM) 1.9	1	NA	No PHI is specified.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Sorghum (grain and forage types)					
Single or split preplant surface application Ground or aerial equipment	7.6 lb/gal EC [100-816] [100-818] [100-964] [100-965] 2.4 lb/gal FIC [100-817] 2.4 lb/gal EC [100-886]	coarse - 1.3 medium - 1.43 fine - 1.6	1 or (b + a)	NA	Use only on sorghum that is seed treated with Concep or Screen. On medium and fine soils, the preplant surface application may be made as a split application, with b applied 30-45 days prior to planting and the remainder at planting, or as a single or split application at <30 days prior to planting. On coarse soils, this type of application should be made as a single application no earlier than 2 weeks prior to planting. Do not make more than one application per year, with the exception of the split applications.
Preplant incorporated or pre-emergence application Ground or aerial equipment					
Broadcast preplant surface application Ground or aerial equipment	3.33 lb/gal EC [100-827]	medium (>1% OM)- 1.42 fine (<1.5% OM) - 1.42 fine (>1.5% OM) - 1.58	1		Preplant surface, preplant incorporated or pre-emergence applications of the 3.33 lb/gal EC should not be made in NM, the TX Panhandle, Gulf Coast, and Blacklands areas. The preplant incorporated application of the 3.33 lb/gal EC should not be made in AZ or the Imperial Valley of CA.
Preplant surface, preplant incorporated or pre-emergence application Ground or aerial equipment					

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Soybean					
Broadcast application in fall to crop stubble after harvest Ground or aerial equipment	7.6 lb/gal EC [100- 816] [100-818] [100-964] [100-965] 16% G [100-910] 7.6 lb/gal RTU ^d [100-829]	medium/fine (>2.5% OM) - 1.9-2.4	1	NS	The maximum seasonal rate is 2.4-2.5 lb ai/A. There is no PHI specified for forage and hay or a restriction against the feeding of forage and hay to livestock. The fall application should not be applied to frozen ground and is restricted to IA, MN, ND, SD, WI and portions of NE and IL. The preplant surface application in spring is restricted to the following states: CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV, and WY. This type of application may be may as a split (b + a) application on medium or fine soils.
Broadcast preplant surface application to minimum- or no- till systems in spring Ground or aerial equipment		coarse - 1.3 medium - 1.6 fine - 1.9 6-20% OM - 2.4-2.5			
Broadcast preplant incorporated or pre-emergence application in spring Ground or aerial equipment		coarse - 1.3 medium - 1.6 fine (<3% OM) - 1.6 fine (3% OM) - 1.9 6-20% OM - 2.4-2.5			

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.] or [SLN No.] ^a	Maximum Single Application Rate ^b (lb ai/A)	Max. # Apps./season	Minimum RTI (Days)	Use Limitations ^c
Soybean (Continued)					
Broadcast preplant incorporated or pre-emergence application to conventional till systems in spring Ground or aerial equipment	6.3 lb/gal EC [100- 958]	coarse (<3% OM) - 1.0 coarse (\$3% OM) - 1.2 medium (<3% OM) -1.4 medium (\$3% OM) -1.6 fine (<3% OM) - 1.8 fine (\$3% OM) - 2.0	1	NA	The maximum seasonal rate is 2.6 lb ai/A. A 40-day PHI/PGI is specified for grazing or feeding of treated soybean plants. Use in CA and on sand soils is prohibited. All preplant applications should be made 0-14 days before planting, except the sequential preplant application, which should be made 15-30 days before planting. The preplant and pre-emergence applications in coarse soils can be applied at a maximum of 1.4 lb ai/A in the following states: AL, AR, FL, GA, LA, MO, MS, NC, OK, SC, TN, TX, and VA.
Broadcast preplant surface application to minimum- or no- till systems in spring Ground or aerial equipment		coarse - 1.4 medium - 2.0 fine - 2.4			
Broadcast sequential preplant and pre-emergence application to minimum- or no-till systems in spring Ground or aerial equipment		coarse - 1.2 medium - 1.4 fine - 1.6	2	NS	

Footnotes.

^a All Special Local Need labels (SLN Nos.) are based on the 7.6 lb ai/A EC formulation [EPA Reg. No. 100-816].

^b Maximum use rates for most crops are based on soil textural class (coarse, medium, or fine) and the % organic matter (OM).

^c Minimum application volumes of 5 and 2 gal/A are specified for ground and aerial applications, respectively. The REI is 24 hours for all formulations except EPA Reg. No. 100-958, which has a REI of 12 hours. The labels for *s*-metolachlor list the following planting restrictions for rotational crops: (1) crops on the label can be replanted immediately provided a second *s*-metolachlor application is not made; (2) barley, oats, rye, or wheat may be planted 4½ months, alfalfa 4 months, tomatoes 6 months, and clover 9 months following treatment; (3) root crops, tobacco, buckwheat, milo, rice, cabbage or peppers may be planted the spring following treatment; (4) following lay-by or multiple treatments applied the previous season, tobacco, cabbage or peppers may be planted in spring. Additional rotational crop restrictions exist for MAI formulations [EPA Reg. Nos. 100-817, -827, -886, -928, and -958]; however, restrictions on these labels are based on the other active ingredients, such as atrazine.

^d The 7.6 lb/gal RTU [EPA Reg No. 100-829], for use in corn and soybeans, should be mixed with a minimum of 200 lb/A of dry fertilizer and applied using only

ground equipment. Do not mix with water or liquid fertilizer.

Note that technical registrants will be sent a Section 3(c)(2)(B) Data-Call-In (DCI) letter under the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) in a separate mailing. If you have questions regarding this document, please contact the Chemical Review Manager, Anne Overstreet, at (703) 308-8068.

Sincerely,

Lois A. Rossi, Director
Special Review and
Reregistration Division

Enclosures: "Metolachlor Overview" and "Metolachlor Summary"