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December 2, 2004

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Kylie Rothwell, Chemical Review Manager
U. S. Environmental Protection Agency
Ariel Rios Building (7508C)
1200 Pennsylvania Avenue, N.W.
Washington, DC 2040-0001

RE: Fluometuron
Environmental Fate and Effects Science Chapter

Dear Ms. Rothwell:

Enclosed, please find Makhteshim-Agan's review of the Agency's EFED Fluometuron Draft Science Chapter. As requested in Michael Goodis's letter to Andy Eimanis, the chapter was reviewed for mathematical, computational and typographical errors. A summary chart is attached noting errata, corrections, and comments.

This chapter has not been reviewed by our environmental toxicologist; thus, the corrections noted should not be construed as our final comments on the EFED Chapter. Makhteshim has reviewed the document for confidential business information (CBI), and finds nothing that is claimed as CBI.

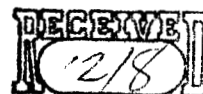
Finally, please note that Makhteshim is not currently conducting any studies on fluometuron that might impact the conclusions in the draft chapter.

Makhteshim regularly reviews its products and database and updates product testing schedules. EPA will be notified in the future of any Makhteshim plans to initiate testing that might have an effect on this science chapter.

If you have any questions or concerns regarding these comments, please feel free to contact me at your convenience.

Best Regards,

P. Leanne Pruett
for Makhteshim-Agan of North America, Inc



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FLUOMETURON ECOTOX AND EFATE SCIENCE CHAPTERS: ERRATA AND CORRECTIONS / COMMENTS

Page 5	Chemical and Physical Properties: CAS Registry No. 2164172	Should read 2164-17-2
Page 6	Use Characterization, Paragraph 1, next to last sentence "The commercial end products include dry flowables (EPA Reg. No. 1812-439) and water dispersible granule (EPA Reg. No. 1812-323)"	Should read "The commercial end products include liquid flowables / emulsifiable concentrates (such as EPA Reg. No's 1812-285, 1812-439, 66222-32), dry flowables / water dispersible granules (such as EPA Reg. No's 1812-323, 1812-438, 66222-33) and wettable powders (such as 66222-30, 66222-31)." Should read "These formulations contain between 41.2 -85% fluometuron."
Page 6	Use Characterization Paragraph 1, last sentence "These formulations contain between 41.7 – 80% fluometuron."	Should read "These formulations contain between 41.2 -85% fluometuron."
Page 6	Use Characterization Section	NOTE – there are also a handful of registered fluometuron products that contain 13.2% fluometuron and 27.6% MSMA (EPA Reg. No's 9779-319, 19713-127, 66222-29). These have not been mentioned in the Use Characterization Section This sentence is incomplete – needs to be corrected
Page 8	Bottom of Page, Last Sentence "A summary of the assessment and measurement endpoints . . . with exposure to fluometuron is provided in "	This sentence is incomplete – needs to be corrected
Page 15	Last entry in Table 3, MRID Number is given as 42643602	MRID should be changed: Correct MRID for CGA-41686 Adsorption / Desorption is 42643604
Page 26	Chronic Toxicity to Mammals, First Sentence: "A chronic mammalian test was submitted (MRID 00163772) was submitted using . . ."	The second 'was submitted' should be deleted. Should read "A chronic mammalian test was submitted (MRID 00163772) using . . ."
Page 29	Second Paragraph, Last Sentence "Chronic RQ's could not be calculated because no chronic freshwater fish . . ."	Spelling correction: ". . . because no chronic freshwater fish . . ."
Page 31	Footnotes to Table 13 – Footnote A: Sheephead minnow (<i>Cyprinodon variegatus</i>)	Scientific name should be italicized: "Sheephead minnow (<i>Cyprinodon variegatus</i>)"
Page 44	Freshwater Invertebrates, First Paragraph, Last Sentence "It should be noted that when the EC50 value for the Eastern Oyster (220 µg/L)."	Sentence is not complete – should be revised.
Appendix A-3	Batch Equilibrium of Three Metabolites, First Paragraph, Last Line "(163-1, MRID's 42643602, 42643603 (below), 42643604 (below))"	MRID Numbers are assigned incorrectly. MRID Number for Primary Degradate (CGA-41686) Batch Equilibrium study is 42643604. Last line should read "(163-1, MRID's 42643602 (below), 42643603 (below), 42643604)". It would be even more appropriate to assign each MRID to the proper paragraph, so in Batch Equilibrium of Three Metabolites, the first paragraph (CGA-41686) would indicate

Appendix B-3 / B-4	PRZM/EXAMS Results - Data Used for this Run indicates figures used for Aerobic Aquatic Metabolism as 346 day half life; Anaerobic Aquatic Metabolism, 876 day half life; Aerobic Soil Metabolism 543 day half life	(163-1, MRID 42643604); second paragraph (CGA-41685) would indicate (163-1, MRID 42643603) and the third paragraph (CGA 72903) would indicate (163-1, MRID 42646302) These half lives were apparently used for all PRZM/EXAMS runs indicated in this chapter (each page number indicates another incident of using these figures). These half lives seem to be excessive. In the body of this document (Page 3), the following half lives were given: Aerobic Soil Metabolism – 181 days Anaerobic Soil Metabolism – 378 days Anaerobic Aquatic Metabolism – 177 days
Appendix C-2	Definitions of Elements in rate Equation: Ci, Second line of definition: "Ci is calculated based on Kenaga and Fletcher by multiplying the" Ci, Third line: "Ci is calculated based on the Kenaga nomogram ..."	Please double check the use of these half life figures. Second line seems to appear in error – should be deleted or modified Spelling of Kenaga is incorrect in third line
Appendix C-3	Second Paragraph, EFED's runoff scenario is: "(1) based on a pesticide's ... and the amount of pesticide present ..."	Margins on this page are too wide – some text is cut off Spelling should be corrected: "(1) ... and the amount of pesticide present ..." Scientific name should be italicized: laboratory rat (<i>Rattus norvegicus</i>) [NOTE: same species appears twice – both should be italicized]
Appendix E-4	Toxicity of Fluometuron to Mammals chart: Species: laboratory rat (<i>Rattus norvegicus</i>)	Spelling of Kenaga should be corrected
Appendix F-2	Spray Applications to Foliage, Sentence 1: "The estimated environmental concentration ... are derived from the Kenega nomogram ..."	This value should not be emboldened, because it does not exceed a RQ value of 1.0.
Appendix G-3	Fluometuron Chronic Risk Quotients for aquatic plants based on a Tier II EEC and NOEC chart: Second Entry, Cotton / TX, Acute RQ (Peak EEC/EC50) value: 0.866363636	All values should be emboldened, because they are all greater than a RQ of 0.05: 1.473636364 0.866363636 1.117727273 0.235809091
Appendix G-5	Fluometuron Acute Risk Quotient for freshwater invertebrates based on a Tier II EEC and EC50 chart: All values in Acute RQ (Peak EEC/EC50) column: 1.473636364 0.866363636 1.117727273 0.235809091	All values should be emboldened, because they are all greater than a RQ of 0.05: 1.473636364 0.866363636 1.117727273 0.235809091

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Appendix J-3	165-4 Bioaccumulation in Fish, First Reference (Shortelle et al.)	This reference does not have an associated MRID number – please check and include appropriate MRID
Appendix K-2 / K-3	72-1 Acute Toxicity to Freshwater Fish and 72-2 Acute Toxicity to Freshwater Invertebrates. First Reference (Mayer et. al.) MRID number reported as 400098001	MRID associated with this reference in both instances has too many digits
Appendix L-17	Fluometuron Acute Risk Quotients for freshwater fish based on a Tier II EEC and LC50 chart, Acute RQ (Peak EEC/LC50 values for Cotton / TX, and Cotton CA: 0.0496875 0.011875	Please check MRID number and correct These values are improperly emboldened, because they are less than RQ value of 0.05
Appendix L-18	Fluometuron Acute Risk Quotients for freshwater invertebrates based on a Tier II EEC and EC50 chart, Acute RQ (Peak EEC / EC50 column, value for Cotton / CA: 0.034545455	This value is improperly emboldened, because it is less than a RQ value of 0.05
Appendix L-19	Fluometuron Acute Risk Quotients for estuarine/marine fish based on a Tier II EEC and LC50 chart, Acute RQ (Peak EEC/LC50) column, all figures: 0.000902350 0.000575045 0.00059132 0.000137432	All values are improperly emboldened, because all are below a RQ value of 0.05: 0.000902350 0.000575045 0.00059132 0.000137432

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