



APPENDIX J

Summary of Esfenvalerate Half Lives in Soil

Table J1. Summary of Esfenvalerate half-lives in aerobic soil.¹

Temperature °C	Soil Concentration (ppm)	Soil Texture	Nonlinear Half-Life (days)	Linear Half Life (days)	MRID No., Study Author ²
25	5	Silt Loam	71.9	75	00146578, Lee et al. 1985
20	0.51	Loamy Sand	20.3	35.5	Itoh et al. 1995
20	0.51	Loamy Sand	24	40.3	Itoh et al. 1995
20	0.51	Sand	36.5	42.5	Itoh et al. 1995
20	0.51	Sand	52.5	59.2	Itoh et al. 1995
20	0.51	Sandy Loam	40.5	49.2	Itoh et al. 1995
25	1	Sandy Clay Loam		112	Mikami et al. 1984
25	1	Light Clay		15	Ohkawa et al. 1978
25	1	Sandy Clay Loam		90	Ohkawa et al. 1978
25	1	Light Clay		21	Mikami et al. 1984
16	1	Clay Loam	58.7	50.6	Williams and Brown 1979
16	1	Silt Loam	53.7	53.3	Williams and Brown 1979
20	1.52	Loamy Sand	37.5	47.8	Itoh et al. 1995
20	1.52	Loamy Sand	23.5	35	Itoh et al. 1995
25	2.5	Sandy Loam	33.5	45	Gaddamidi and Brookhart 1992
25	5	Silt Loam	122	129	Lee 1979
22	5	Silt Clay Loam	55	56.4	Lee and Stackhouse 1979
25	5	Silt Loam	587	546	Potter and Arnold 1980
25	5	Silt Clay Loam	206	203	Potter and Arnold 1980
25	5	Sandy Loam	155	165	Potter and Arnold 1980
25	5	Silt Loam	285	266	Lee 1979
25	5	Sandy Loam	101	135	Lee 1979
25	5	Sandy Loam	170	181	Potter and Arnold 1980
20	20	Silt Loam	121	116	Lee et al. 1985

¹ Data is from Laskowski 2002 and Lee et al. 1985.

² If an MRID No. is not listed the study was not submitted to the EPA for review. The study was obtained from the open literature.

References

Gaddamidi, V. and S. W. Brookhart III. 1992. Anaerobic soil metabolism of esfenvalerate. DuPont report AMR 2075-91.

Itoh, K., Kodaka, R., Kumada, K., Nambu, K., and T. Kato. 1995. Aerobic soil metabolism of esfenvalerate and fenvalerate in European soils. Dupont report LLM-50-0039.

Lee, P. 1979. Twelve months aerobic soil metabolism of 14C-chlorphenyl-SD43775. DuPont report AMR-1578-89, Appendix I.

Lee, P. and S. C. Stackhouse. 1979. Comparative aerobic metabolism of 14C-chlorphenyl-SD43775 in sterilized and nonsterilized Hanford sandy loam soil. DuPont report AMR-1578-89, Appendix IV.

Lee, P., Stearns, S., and W. Powell. 1985. Comparative aerobic soil metabolism of SD 43775 (racemic) and SD 47443 (A-alpha). Dupont report AMR-1578-89, Appendix V. MRID 00146578.

Mikami, N., Sakata, S., and H. Yamada. 1984a. Further studies on degradation of the pyrethroid insecticide fenvalerate in soils. DuPont report AMR-1578-89, Appendix VI.

Ohkawa, H., Nambu, K., and H. Inui. 1978. Metabolic fate of fenvalerate (Sumicidin) in soil and by soil microorganisms. Dupont report. AMR-1578-89, Appendix III.

Potter, J. C. and D. L. Arnold. 1980. Twelve-month aerobic soil metabolism of 14C-phenoxyphenyl SD 43775. DuPont report AMR-1578-89, Appendix II.

Williams, I.H. and M.J. Brown. 1979. Persistence of permethrin and WL 43775 in soil. J. Agric Food Chem 27: 130-132.