Barium Publications Rejected as Not Acceptable for Plants and Invertebrates

Published literature that reported soil toxicity to terrestrial invertebrates and plants was identified, retrieved and screened. Published literature was deemed Acceptable if it met all 11 study acceptance criteria (Fig. 3.3 in section 3 "DERIVATION OF PLANT AND SOIL INVERTEBRATE ECO-SSLs" and ATTACHMENT J in Standard Operating Procedure #1: Plant and Soil Invertebrate Literature Search and Acquisition). **Each study was further screened through nine specific study evaluation criteria** (Table 3.2 Summary of Nine Study Evaluation Criteria for Plant and Soil Invertebrate Eco-SSLs, also in section 3 and ATTACHMENT A in Standard Operating Procedure #2: Plant and Soil Invertebrate Literature Evaluation and Data Extraction, Eco-SSL Derivation, Quality Assurance Review, and Technical Write-up.) **Publications identified as Not Acceptable did not meet one or more of these criteria. All Not Acceptable publications have been assigned one or more keywords categorizing the reasons for rejection** (Table 1. Literature Rejection Categories in Standard Operating Procedure #4: Wildlife TRV Literature Review, Data Extraction and Coding).

FL	Bruinsma, J. R. 1940. Field Tests with Potassium, Sodium, and Barium. Meded.Inst.Suikerbiet., Bergen op Zoom, Netherlands 10, 141-167
Media	Chaney, W. R. and Strickland, R. C. 1984. Relative toxicity of heavy metals to red pine pinus-resinosa pollen germination and germ tube elongation. J Environ Qual 13[3], 391-394
No Dose	Cipollini, M. L. and Pickering, J. L. 1986. Determination of the Phytotoxicity of Barium in Leach-Field Disposal of Gas Well Brines. Plant Soil 92[2], 159-169
Media	Clark, R. B., Pier, P. A., Knudsen, D., and Maranville, J. W. 1981. Effect of Trace Element Deficiencies and Excesses on Mineral Nutrients in Sorghum. J.Plant Nutr. 3[1-4], 357-374
Media	Debnath, R. 1982. Toxic Action of Barium Chloride on Germination, Growth and Metabolism of Rice (Oryza sativaL.). Environ Exp Bot 22[2], 203-210
Media	Debnath, R. Bpaba and Mukherji, S. 1982. Barium effects in Phaseolus aureus, Cephalandra indica, Canna indica, Beta vulgaris, Triticum aestivum and Lactuca sativa (mung beans, beets, wheat, lettuce, air pollutants deleterious concentration influencing growth and respriation). Biol.Plant. 24[6], 423-429
No COC	Grace, J. K. 1990. Oral toxicity of barium metaborate to the eastern subterranean termite Isoptera Rhinotermitidae. J ENTOMOL SCI.Journal of Entomological Science.25 (1).1990.112-116. 25[1], 112-116
No Dose	Guyette, R. P. and Cutter, B. E. 1994. Barium and manganese trends in tree-rings as monitors of sulfur deposition. Water Air Soil Pollut. 73[1/4], 213-223
No Dur	Hope, B., Loy, C., and Miller, P. 1996. Uptake and Trophic Transfer of Barium in a Terrestrial Ecosystem. Bull.Environ.Contam.Toxicol. 56[5], 683-689
Media	Iqbal, J. and Rafique, N. 1987. Toxic Effects of BaCl2 on Germination, Early Seedling Growth, Soluble Proteins and Acid Phosphatases in Zea mays L. Pak.J.Bot. 19[1], 1-8
Media	Ke, Hueli Yang David, Anderson, Wendy L., Moncrief, Robyn M., Rayson, Gary D., and Jackson, Paul J. 1994. Luminescence studies of metal ion-binding sites on Datura inoxia biomaterial. Environ.Sci.Technol. 28[4], 586-591

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Media	Lane, I. and Puckett, K. J. 1979. Responses of the Phosphatase Activity of the Lichen Cladina rangiferina to Various Environmental Factors Including Metals. Can.J.Bot. 57, 1534-1540
Mix	Lawrey, J. D. 1979. Boron, Strontium, and Barium Accumulation in Selected Plants and Loss During Leaf Litter Decomposition in Areas Influenced by Coal Strip Mining. Can J Bot 57[8], 933-940
Species	Marsh, C. D., Alsberg, C. L., and Black, O. F. 1912. The Relation of Barium to Loco-Weed Disease 37997. U.S.Dep.Agric.Bur.Plant Ind.Bull.No.246
OM, pH	Marsh, C. D. 1912. Absorption of Barium Chloride by Aragallus lamberti. Bot.Gaz. 54, 250-252
OM, pH	McFarland, M. L., Ueckert, D. N., Hons, F. M., and Hartmann, S. 1992. Selective-placement burial of drilling fluids ii. Effects on buffalograss and fourwing saltbush. J Environ Qual 21[1], 140-144
OM, pH	McHargue, J. S. 1919. Effect of Certain Compounds of Barium and Strontium on the Growth of Plants. J.Agric.Res. 16, 183-194
Media	Minton, G. A. and Wilson, R. H. 1973. Effect of Ba Ions on the Growth and Mitochondrial Metabolism of Mung Bean Seedlings. Plant Soil 39[3], 611-617
pH	Nyarai-Horvath, F., Szalai, T., Kadar, I., and Csatho, P. 1997. Germination characteristics of pea seeds originating from a field trial treated with different levels of harmful elements. Acta Agron.Hung. 452[147-154]
Media	Reddy, T. and Vaidyanath, K. 1978. Mutagenic Potentiating and Antimutagenic Activity of Certain Metallic Ions in the Rice Genetic System. Curr Sci 47[14], 513-515
In Vit	Siegel, S. M. 1977. The Cytotoxic Response of Nicotiana Protoplast to Metal Ions: A Survey of the Chemical Elements. Water Air Soil Pollut 8[1-4], 293-304
Mix	Smith, K. A. 1971. The Comparative Uptake and Translocation by Plants of Calcium, Strontium, Barium and Radium. II. Triticum vulgare (Wheat). Plant Soil 34[3], 643-651

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Media	Steinberg, R. A. 1936. Effects of Barium Salts upon Aspergillus niger, and Their Bearing upon the Sulphur and Zinc Metabolism of the Fungus in an Optimum Solution. Bot.Gaz. 97, 666-671
Mix	Tolle, Duane A., Arthur, Mickey F., Chesson, Jean, and Van Voris, Peter. 1985. Comparison of pots versus microcosms for predicting agroecosystem effects due to waste amendment. Environ.Toxicol.Chem. 4[4], 501-509
Rev	Vanselow, A. P. 1966. Barium. In: H.D.Chapman (Ed.), Diagnostic Criteria for Plants and Soils, University of California, Berkeley, CA , 24, 31-24, 32
OM, pH	Voelcker, J. A. 1917. Pot-Culture Experiments, 1917. I. The Hills' Experiments - The Influence of Barium Compounds on Wheat. J.R.Agric.Soc. 78, 232-248
Media	Wallace, A. and Romney, E. M. 1971. Some Interactions of Ca, Sr, and Ba in Plants. Agron.J. 63[2], 245-248
Media	Wettlaufer, S. H., Osmeloski, J., and Weinstein, L. H. 1991. Response of polyamines to heavy metal stress in oat seedlings. Environ Toxicol Chem 10[8], 1083-1088
Media	Wilson, R. H. and Minton, G. A. 1974. The comparative uptake of barium ions and other alkaline earth metals by plant mitochondria. Biochim.Biophys.Acta 333[1], 22-27