MATTHEW J. MORRA
Professor of Soil Biochemistry
Division of Soil & Land Resources
University of Idaho
875 Perimeter Drive MS 2339
Moscow, ID, 83844-2339, USA
Phone: 208-885-6315
Email: mmorra@uidaho.edu

Education/Experience

Professor of Soil Biochemistry, University of Idaho, 1997-present
Affiliate Professor, CATIE (Centro Agronómico Tropical de Investigación y Enseñanza), Turrialba, Costa Rica, 2001-present
Visiting Professor, Plant Industries, CSIRO, Canberra, Australia, 2000
Soil & Land Resources Division Chair, University of Idaho, 1999-2007
Associate Professor of Soil Biochemistry, University of Idaho, 1992-1997
Assistant Professor of Soil Biochemistry, University of Idaho, 1986-1992
Ph.D., Agronomy (Soil Biochemistry), 1986, Ohio State University, Columbus, OH
M.E.M., Environmental Management, 1982, Duke University, Durham, NC
B.A., Biology, 1981, College of Wooster, Wooster, OH

Honors and Awards

Department of Plant, Soil and Entomological Sciences in Teaching Award, 2008
University of Idaho Environmental Science Program Outstanding Faculty Award, 2008
Alumni Award for Excellence, University of Idaho Alumni Association, 2002
Department of Plant, Soil, and Entomological Sciences Teaching Award, 2002
University of Idaho Research Excellence Award, 1999
Gamma Sigma Delta Outstanding Research Award, 1992
Nominated for NSF Presidential Young Investigator Award, 1988

Peer-Refereed Papers (h index = 26)

Dubie, J., A. Stancik, M Morra, and C. Nindo. 2013. Antioxidant extraction from mustard (*Brassica juncea*) seed meal using high-intensity ultrasound J. Food Sci. (in press).

Hansson, D., M.J. Morra, V. Borek, and S.D. Eigenbrode. 2013. Green peach aphid [*Myzus persicae* (Sulzer) (Hemiptera: Aphididae)] control using Brassicaceae ethyl-ester oil sprays. J. Appl. Entomol. (in press).

Hendrix, K.M., M.J. Morra, H.-B. Lee, S.C. Min. 2012. Defatted mustard seed meal-based biopolymer film development. Food Hydrocolloids 26:118-125.

Meyer, S.L.F., I.A. Zasada, S.B. Orisajo, M.J. Morra. 2011. Mustard seed meal mixtures: phytotoxicity to lettuce and pepper and management of *Meloidogyne incognita* on pepper. J. Nematology 43:7-15.

Boydston, R.A., M.J. Morra, V. Borek, L. Clayton, and S.F. Vaughn. 2011. Onion and weed response to mustard (*Sinapis alba*) seed meal. Weed Sci. 59:546-552.

Snyder, A.J., J.L. Johnson-Maynard, and M.J. Morra. 2010. Nitrogen mineralization in soil incubated with ^{15}N-labeled Brassicaceae seed meals. Appl. Soil Ecol. 46:73-80.

Oram, L., D. Strawn, M. Morra, G. Moller. 2010. Selenium biogeochemical cycling and fluxes in the hyporheic zone of a mining-impacted stream. Env. Sci Technol. 44:4176–4183.

Morra, M.J. and V. Borek. 2010. Glucosinolate preservation in stored Brassicaceae seed meals. J. Stored Prod. Res. 46:98-102.

Zasada, I.A., S.L.F. Meyer, and M.J. Morra. 2009. Brassicaceous seed meals as soil amendments to suppress the plant-parasitic nematodes *Pratylenchus penetrans* and *Meloidogyne incognita*. J. Nematol. 41:221-227.

Brown, P.B. and M.J. Morra. 2009. Brassicaceae tissues as inhibitors of nitrification in soil. J. Agric. Food Chem. 57:7706–7711.

Polidoro, B.A., M.J. Morra, C. Ruepert and L.E. Castillo. 2009. Pesticide sequestration in passive samplers (SPMDs): considerations for deployment time, biofouling, and stream flow in a tropical watershed. J. Environ. Monitor. 11:1866-1874.

Ramamoorthy, S., J.S. Piotrowski, H.W. Langner, W.E. Holben, M.J. Morra, R.F. Rosenzweig. 2009. Ecology of sulfate-reducing bacteria in an iron-dominated, mining-impacted freshwater sediment. J. Environ. Qual. 38:675-684.

Snyder, A., M.J. Morra, J. Johnson-Maynard, and D.C. Thill. 2009. Seed meals from Brassicaceae oilseed crops as soil amendments: Influence on carrot growth, microbial biomass N, and N mineralization. HortScience 44:354-361.

Joo, J.H., C.V. Eberlein, and M.J. Morra. 2008. Imazamethabenz hydrolysis on oxide surfaces at several pH. J. Pesticide Sci. 33:376-382.

Toevs, G., M.J. Morra, L. Winowiecki, D. Strawn, M.L. Polizzotto, and S. Fendorf. 2008. Depositional influences on porewater arsenic in sediments of a mining-contaminated freshwater lake. Environ. Sci. Technol. 42:6823-6829.

Polidoro, B.A., R.M. Dahlquist, L.E. Castillo, M.J Morra, E. Somarriba, and N.A Bosque-Perez. 2008. Pesticide application practices, pest knowledge, and cost-benefits of plantain production in the Bribri-Cabécar Indigenous Territories, Costa Rica. Environ. Res. 108:98-106.

Hansson, D., M.J. Morra, V. Borek, A.J. Snyder, J.L. Johnson-Maynard, and D.C. Thill. 2008. Ionic thiocyanate (SCN^-) production, fate, and phytotoxicity in soil amended with Brassicaceae seed meals. J. Agric. Food Chem. 56:3912–3917.

Brown, B.D., R.C. Gibson, B. Geary, and M.J. Morra. 2008. Biofumigant biomass, nutrient content, and glucosinolate response to phosphorus. J. Plant Nutr. 31:743-757.

Rice, A.R., J.L. Johnson-Maynard, D.C. Thill, and M.J. Morra. 2007. Vegetable crop emergence and weed control following amendment with different Brassicaceae seed meals. Renew. Agric. Food Systems 22:204–212.

Toevs, G., M.J. Morra, M.L. Polizzotto, D.G. Strawn, B.C. Bostick, and S. Fendorf. 2006. Metal(loid) diagenesis in mine-impacted sediments of Lake Coeur d'Alene, Idaho. Environ. Sci. Technol. 40:2537-2543.

Borek, V. and M.J. Morra. 2005. Ionic thiocyanate (SCN^-) production from 4-hydroxybenzyl glucosinolate contained in *Sinapis alba* seed meal. J. Agric. Food Chem. 47:3837-3842.

Morra, M.J. 2004. Controlling soil-borne plant pests using glucosinolate-containing tissues. Agroindustria 3:251-255.

Smolinska, U., M.J. Morra, G.R. Knudsen, and R.L. James. 2003. Isothiocyanates produced by Brassicaceae species as inhibitors of *Fusarium oxysporum.* Plant Dis. 87:407-412.

Morra, M.J., and J.A. Kirkegaard. 2002. Isothiocyanate release from soil-incorporated *Brassica* tissues. Soil Biol. Biochem. 34:1683-1690.

Umiker, K.J., M.J. Morra, and I.F. Cheng. 2002. Aqueous sulfur species determination using differential pulse polarography. Microchem. J. 73:287-297.

Tokala, R.K, J.L. Strap, C.M. Jung, D.L. Crawford, M.H. Salove, L.E. Deobald, J.F. Bailey, and M.J. Morra. 2002. Novel plant-microbe rhizosphere interaction involving *Streptomyces lydicus* WYEC108 and the pea plant (*Pisum sativum*). Appl. Environ. Microbiol. 68:2161-2171.

Kariuki, S., M.J. Morra, K.J. Umiker, and I.F. Cheng. 2001. Determination of total ionic polysulfides by differential pulse polarography. Anal. Chim. Acta 442:277-285.

Joo, J.H., C.V. Eberlein, M.J. Morra, and M.J. Guttieri. 2001. Imazamethabenz persistence in a wheat (*Triticum aestivum*)-potato (*Solanum tuberosum*) rotation. Weed Technol. 15:208-215.

Blessing, T.C., B.W. Wielinga, M.J. Morra, and S. Fendorf. 2001. Co(III) EDTA-reduction by *Desulfovibrio vulgaris* and propagation of reactions involving dissolved sulfide and polysulfides. Environ. Sci. Technol. 35:1599-1603.

Morra, M.J., V. Borek, and J. Koolpe. 2000. Transformation of chlorinated hydrocarbons using aquocobalamin or coenzyme F_{430} in combination with zero-valent iron. J. Environ. Qual.29:706-715.

Gardiner, J.B., M.J. Morra, C.V. Eberlein, P.D. Brown, and V. Borek. 1999. Allelochemicals released in soil following incorporation of rapeseed (*Brassica napus*) green manures. J. Agric. Food Chem. 47:3837-3842.

Eberlein, C.V., M.J. Morra, M.J. Guttieri, P.D. Brown, and J. Brown. 1998. Glucosinolate production in five field-grown *Brassica napus* cultivars used as green manures. Weed Technol. 12:712-718.

Borek, V., L.R. Elberson, J.P. McCaffrey, and M.J. Morra. 1998. Toxicity of isothiocyanates produced by glucosinolates in Brassicaceae species to black vine weevil eggs. J. Agric. Food Chem. 46:5318-5323.

Kliewer, K.E., and M.J. Morra. 1998. Sorption and redox activity of cobalt corrinoids on hectorite. Soil Sci. Soc. Am. J. 62:916-922.

Borek, V., and M.J. Morra. 1998. Cyclic voltammetry of aquocobalamin on clay-modified electrodes. Environ. Sci. Technol. 32:2149-2153.

Morra, M.J., M.H. Chaverra, L.-M. Dandurand, and C.S. Orser. 1998. Survival of *Pseudomonas fluorescens* 2-79RN_{10} in clay powders undergoing drying. Soil Sci. Soc. Am. J. 62:663-670.

Brown, P.D., and M.J. Morra. 1997. Control of soil-borne plant pests using glucosinolate-containing plants. Adv. Agron. 61:167-231.

Smolinska, U., M.J. Morra, G.R. Knudsen, and P.D. Brown. 1997. Toxicity of glucosinolate degradation products from *Brassica napus* seed meal towards *Aphanomyces euteiches* f. sp. *pisi*. Phytopathology 87:77-82.

Borek, V., L.R. Elberson, J.P. McCaffrey, and M.J. Morra. 1997. Toxicity of rapeseed meal and methyl isothiocyanate to larvae of the black vine weevil (Coleoptera: Curculionidae). J. Econ. Entomol. 90:109-112.

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Smolinska, U., G.R. Knudsen, M.J. Morra, and V. Borek. 1997. Inhibition of *Aphanomyces euteiches* f. sp. *pisi* by volatile allelochemicals from *Brassica napus* seed meal. Plant Dis. 81:288-292.

Brown, P.D., and M.J. Morra. 1996. Hydrolysis products of glucosinolates in *Brassica napus* tissues as inhibitors of seed germination. Plant Soil 181:307-316.

Elberson, L.R., V. Borek, J.P. McCaffrey, and M.J. Morra. 1996. Toxicity of rapeseed meal-amended soil to wireworms (Coleoptera:Elateridae). J. Agric. Entomol. 13:323-330.

Borek, V., M.J. Morra, and J.P. McCaffrey. 1996. Myrosinase activity in soil extracts. Soil Sci. Soc. Am. J. 60:1792-1797.

Lewis, T.A., M.J. Morra, and P.D. Brown. 1996. Comparative product analysis of carbon tetrachloride dehalogenation catalyzed by cobalt corrins in the presence of thiol or titanium(III) reducing agents. Environ. Sci. Technol. 30:292-300.

Brown, P.D., and M.J. Morra. 1995. Glucosinolate-containing plant tissues as bioherbicides. J. Agric. Food Chem. 43:3070-3074.

Borek, V., L. R. Elberson, J.P. McCaffrey, and M.J. Morra. 1995. Toxicity of aliphatic and aromatic isothiocyanates to eggs of the black vine weevil (Coleoptera: Curculionidae). J. Econ. Entomol. 88:1192-1196.

McCaffrey, J.P., L. Williams, III, V. Borek, P.D. Brown, and M.J. Morra. 1995. Toxicity of ionic thiocyanate-amended soil to the wireworm, *Limonius californicus.* J. Econ. Entomol. 88:793-797.

Borek, V., M.J. Morra, P.D. Brown, and J.P. McCaffrey. 1995. Transformation of the glucosinolate-derived allelochemicals allyl isothiocyanate and allyl nitrile in soil. J. Agric. Food Chem. 43:1935-1940.

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Dandurand, L.-M., M.J. Morra, M.H. Chaverra, and C.S. Orser. 1994. Survival of *Pseudomonas* spp. in air-dried mineral powders. Soil Biol. Biochem. 26:1423-1430.

Zhong, T., and M.J. Morra. 1994. Thiosulfate production in cysteine-amended soil. Soil Sci. Soc. Am. J. 58:829-835.

Borek, V., M.J. Morra, P.D. Brown, and J.P. McCaffrey. 1994. Allelochemicals produced during sinigrin decomposition in soil. J. Agric. Food Chem. 42:1030-1034.

Morra, M.J. 1994. Assessing the impact of transgenic plant products on soil organisms. Molec. Ecol. 3:53-55.

Czuchajowski, L., A. Palka, M. Morra, and V. Wandrekar. 1993. Porphyrinyl-nucleosides containing fluorinated nucleobases. Tetrahedron Lett. 34:5409-5412.

Brown, P.D., and M.J. Morra. 1993. Fate of ionic thiocyanate (SCN^-) in soil. J. Agric. Food Chem. 41:978-982.

Williams, L., III, M.J. Morra, P.D. Brown, and J.P. McCaffrey. 1993. Toxicity of allyl isothiocyanate-amended soil to *Limonius californicus* (Mann.) (Coleoptera: Elateridae) wireworms. J. Chem. Ecol. 19:1033-1046.

Puchalski, M.M., M.J. Morra, and R. von Wandruszka. 1993. Response to comments on "Fluorescence quenching of synthetic organic compounds by humic materials". Environ. Sci. Technol. 27:1235-1236.

von Wandruszka, R., Y. Xiang, and M.J. Morra. 1993. Determination of sulfur species by cathodic square wave voltammetry; compounds relevant to natural sulfur mineralization. Talanta 40:37-42.

Czuchajowski, L., M. Morra, E. Kubaszewski, and T. Malinski. 1992. 5,7,12,14-Tetramethyldimethoxybenzo[b,i][1,4,8,11]tetraazacyclodecine, a new tumoricidal pseudoporphyrin. J. Heterocyclic Chem. 29:1417-1422.

Puchalski, M.M., M.J. Morra, and R. von Wandruszka. 1992. Fluorescence quenching of synthetic organic compounds by humic materials. Environ. Sci. Technol. 26:1787-1792.

Morra, M.J., M.H. Hall, and L.L. Freeborn. 1991. Carbon and nitrogen analysis of soil fractions using near infrared reflectance spectroscopy. Soil Sci. Soc. Am. J. 55:288-291.

Morra, M.J., and W.A. Dick. 1991. Mechanisms of H_2S production from cysteine and cystine by microorganisms enriched from soil. Appl. Environ. Microbiol. 57:1413-1417.

Morra, M.J., R.R. Blank, L.L. Freeborn, and B. Shaffi. 1991. Size fractionation of soil organo-mineral complexes using ultrasonic dispersion. Soil Sci. 152:294-303.

Brown, P.D., and M.J. Morra. 1991. Ion chromatographic determination of SCN^- in soils. J. Agric. Food Chem. 39:1226-1228.

Puchalski, M.M., M.J. Morra, and R. von Wandruszka. 1991. Assessment of corrections for the inner filter effect in fluorimetry. Fresenius J. Anal. Chem. 340:341-344.

Brown, P.D., M.J. Morra, J.P. McCaffrey, D.L. Auld, and L. Williams, III. 1991. Allelochemicals produced during glucosinolate degradation in soil. J. Chem. Ecol. 17:2021-2034.

Morra, M.J. and L.L. Freeborn. 1990. Increasing deamination reactions in soil with pyridoxal-5'-phosphate. Soil Biol. Biochem. 22:361-366.

von Wandruszka, R., W.D. Edwards, M.M. Puchalski, and M.J. Morra. 1990. Fluorescence characteristics of difenzoquat. Spectrochim. Acta 46A:1313-1318.

Morra, M.J., M.O. Corapcioglu, R.M.A. von Wandruszka, D.B. Marshall, and K. Topper. 1990. Fluorescence quenching and polarization studies of naphthalene and 1-naphthol interaction with humic acid. Soil Sci. Soc. Am. J. 54:1283-1289.

Morra, M.J. and W.A. Dick. 1989. Hydrogen sulfide production from cysteine (cystine) in soil. Soil Sci. Soc. Am. J. 53:440-444.

Morra, M.J., D.B. Marshall, and C.M. Lee. 1989. FT-IR analysis of humic acid in water using cylindrical internal reflectance. Commun. Soil Sci. Plant Anal. 20:851-867.

Morra, M.J. and L.L. Freeborn. 1989. Catalysis of amino acid deamination in soils by pyridoxal-5'-phosphate. Soil Biol. Biochem. 21:645-650.

Morra, M.J. and W.A. Dick. 1988. Atmospheric sulfur deposition to agricultural land in northeastern Ohio. J. Environ. Qual. 17:323-329.

Morra, M.J. and W.A. Dick. 1985. Production of thiocysteine (sulfide) in cysteine amended soils. Soil Sci. Soc. Am. J. 49:882-886.

Book Chapters

Morra, M.J. 2004. Agricultural Chemistry. p. 21-26. *In* Chemistry: Foundations and Applications. Macmillan Reference USA.

Morra, M.J. 2002. Assessment of extracellular enzymatic activity in soil. pp. 597-603. In C.J. Hurst, R.L. Crawford, G.R. Knudsen, M.J. McInerney, and L.D. Stetzenbach, (ed.) Manual of environmental microbiology, 2nd ed. American Society for Microbiology, Washington, DC.

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Morra, M.J. 1996. Bioremediation in soil: influence of soil properties on organic contaminants and bacteria. p. 35-60. *In* R.L. Crawford and D.L. Crawford (ed.) Bioremediation: principles and applications. Cambridge University Press, Cambridge.