

Prof. Claudio Massimo Colombo

Molise University, Department Agriculture, Food and Environmental
Dipartimento: Dipartimento di Agricoltura, Ambiente Alimenti (AAA)
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Surname and given name: **Colombo Claudio Massimo**
Gender: **Male**
Data of birth: **24/12/1959**
Place of birth: **Buenos Aires (Argentina)**
Nationality: **Italian**
Permanent Residence: **Naples, Via Manzoni 122 Napoli 80123 Italy**
Actual position: **Full Professor**

Areas of Expertise:

Soil Science, Pedology

Education:

1979-1986. Graduate in Agronomy Science, University of Naples.

1990-1993. Ph.D. Soil Science, University of Cordoba (Spain).

Employment:

1993-1998. Research Soil Scientists, Naples University,

1998-2005. Associated Professor of Soil Chemistry, University of Campobasso,

2005 at present. Full Professor of Pedology, Ded. AAA, University of Campobasso,

Teaching Responsibilities:

1998-2005. Professor Soil Chemistry, Agronomy Science and Environmental, Science full responsibility, graduate level.

2005-2012. Professor of Soil Science, Agronomy and Forestall Science, full responsibility, graduate and postgraduate level.

2005-2006, Coordination of MSc in Animal Production and Sustainable Agricultural Development with UCU (Universidad de Concepcion del Uruguay-Argentina).

2008. Coordination of Summer Scholarship on Soil Forest and Global Change with Spanish Universities (Santiago de Compostella, Cordoba, Seville).

Position and Academy

Since 2005. Vice Director of the Microscopy Interdep. Center,

Since 2005. Member of the National Pedological Observatory and for the Soil Quality of the Italian Ministry of Agriculture, Food and Forestry Policies.

2008-2014 Secretary Deputy of the SISS Italian Soil Science Society (SISS)

Since 2008. Member of the Directive Commission of the Italian Pedology Society (SIPE).

2005-2008. Coordination of Graduate Course in Agronomy Science of Molise University (UNIMOL).

2014- Rector delegate of International Affair.

Research project

Research projects in multidisciplinary collaboration with 10 research grants and contracts: 4 from Italian Government of the Italian Ministry of Research and University (MIUR) and CNR National Research Council Center 1 form Agriculture, Food and Forestry Policies (MIPAf), 3 from Regional Government and 2 from Fertilization Industry.

Research production and interest:

Author of 10 chapters in books (3 in English) , 31 articles published in international scientific journals (ISI), H-Index 13 Web of Science, (16 Scopus), 2 patents. Research activity: characterization and surface of soil minerals with particular emphasis to iron and aluminum oxides, humic interaction with Fe. Research involves the use of advanced spectroscopic (FT-IR, DRS) and microscopic analytical instruments (TEM, SEM,

AFM) in soil chemistry. Actual research focused on spatial distribution of soil properties by using diffuse spectral reflectance (DSR) measurements.

Grant and Awards:

1988 Grant from National Council of Research (CNR), Award for Senior Scientists;

1990 Grant from Economic European Community, Science Senior Achievement

1991 Grant from Ministerio de Educacion y Ciencia de Espana, Senior Achievement Award

2011 (June to August) Visiting Scholar at the Agronomy Dep., Purdue University, IN, USA

2011-2012 (five months) Visiting professor of the Chinese Academy of Sciences (CAS), Dep. of Soil Environmental Science, Research Centre for Eco-environmental Sciences, Beijing.

2013-2014 (two months) Visiting Professor at the Department of Earth & Environmental Sciences, Gyeongsang National University, GNU, Jinju city, South Korea.

Publication list:

- 1) Colombo, C., Palumbo, Sellitto, V.M., , Cho H.G., Amalfitano C. Adamo, P. 2015 Stability of coprecipitated natural humic acid and ferrous iron under oxidative conditions. *J.Geochem.Explor.* 151,50-56. <http://dx.doi.org/10.1016/j.gexplo.2015.01.003>
- 2) Colombo, C., Palumbo, Sellitto, V.M., G., Di Iorio, Castrignanò A., Stelluti M. (2015) The effects of land use and landscape on soil nitrate availability in Southern Italy (Molise region). *Geoderma* 239–240, 1–12 DOI:10.1016/j.geoderma.2014.09.017
- 3) Colombo, Claudio; Palumbo, Giuseppe; Di Iorio, Erika; Sellitto, Vincenzo Michele; Comolli, Roberto; Stellacci, Anna Maria; Castrignanò, Annamaria (2014) Soil Organic Carbon Variation in Alpine Landscape (Northern Italy) as Evaluated by Diffuse Reflectance Spectroscopy. *Soil Science Society of America Journal*,78,3,794-804 DOI: 0.2136/sssaj2013.11J)488
- 4) Jiang, Zhaoxia; Liu, Qingsong; Dekkers, Mark J; Colombo, Claudio; Yu, Yongjae; Barrón, Vidal; Torrent, José; (2014) Ferro and antiferromagnetism of ultrafine-grained hematite. *Geochemistry, Geophysics, Geosystems.* 15, 6. 2699–2712
- 5) Colombo, C; Sellitto, VM; Palumbo, G; Di Iorio, E; Terribile, F; Schulze, DG; (2014) Clay formation and pedogenetic processes in tephra-derived soils and buried soils from Central-Southern Apennines (Italy),*Geoderma*,213,346-356
- 6) Colombo, Claudio; Palumbo, Giuseppe; He, Ji-Zheng; Pinton, Roberto; Cesco, Stefano (2014) Review on iron availability in soil: interaction of Fe minerals, plants, and microbes. *Journal of Soils and ediments*,14,3,538-548
- 7) Angelico, Ruggero; Ceglie, Andrea; He, Ji-Zheng; Liu, Yu-Rong; Palumbo, Giuseppe; Colombo, Claudio; (2014) Particle size, charge and colloidal stability of humic acids coprecipitated with Ferrihydrite. *Chemosphere*,99,239-247
- 8) Jiang, Zhaoxia; Liu, Qingsong; Colombo, Claudio; Barrón, Vidal; Torrent, José; Hu, Pengxiang; (2013) Quantification of Al-goethite from diffuse reflectance spectroscopy and magnetic methods,*Geophysical Journal International*, 196, 1, 131-144
- 9) Colombo, Claudio; Palumbo, Giuseppe; Ceglie, Andrea; Angelico, Ruggero (2012) Characterization of synthetic hematite (α -Fe₂O₃) nanoparticles using a multi-technique approach, *Journal of colloid and interface science*,374,1,118-126
- 10) Colombo, Claudio; Palumbo, Giuseppe; Sellitto, Vincenzo Michele; Rizzardo, Cecilia; Tomasi, Nicola; Pinton, Roberto; Cesco, Stefano (2012) Characteristics of insoluble, high molecular weight iron-humic substances used as plant iron sources",*Soil Science Society of America Journal*,76,4,1246-1256
- 11) Badalucco, Luigi; Rao, Maria; Colombo, Claudio; Palumbo, Giuseppe; Laudicina, Vito Armando; Gianfreda, Liliana (2010) Reversing agriculture from intensive to sustainable improves soil quality in a semiarid South Italian soil. *Biology and fertility of soils*,46,5,481-489

- 12) Marchetti, M; Tognetti, R; Lombardi, F; Chiavetta, U; Palumbo, G; Sellitto, M; Colombo, C; Iovieno, P; Alfani, A; Baldantoni, D. (2010) Ecological portrayal of old-growth forests and persistent woodlands in the Cilento and Vallo di Diano National Park (southern Italy), *Plant Biosystems*, 144, 1, 130-147
- 13) V.M. Sellitto, R.B.A. Fernandes, V. Barrón, C. Colombo (2009) Comparing two different spectroscopic techniques for the characterization of soil iron oxides: Diffuse versus bi-directional reflectance. *Geoderma*. *Geoderma* 149 2–9
- 14) Magliulo, P; Terribile, F; Colombo, C; Russo, F. (2006) A pedostratigraphic marker in the geomorphological evolution of the Campanian Apennines (Southern Italy): The Paleosol of Eboli, *Quaternary international*, 156, 97-117
- 15) Gianfreda, Liliana; Antonietta Rao, Maria; Piotrowska, Anna; Palumbo, Giuseppe; Colombo, Claudio (2005) Soil enzyme activities as affected by anthropogenic alterations: intensive agricultural practices and organic pollution, *Science of the Total Environment*, 341, 1, 265-279
- 16) Crecchio, Carmine; Ruggiero, Pacifico; Curci, Maddalena; Colombo, Claudio; Palumbo, Giuseppe; Stotzky, Guenther (2005) Binding of DNA from *Bacillus subtilis* on Montmorillonite-Humic Acids-Aluminum or Iron Hydroxypolymers: Effects on Transformation and Protection against DNase, *Soil Science Society of America Journal*, 69, 3, 834-841
- 17) Colombo, C; Ricciardella, M; Di Cerce, A; Maiuro, L; Violante, A. (2004) Effect of tannate, pH, sample preparation, ageing and temperature on the formation and nature of Al oxyhydroxides", *Clays and clay minerals*, 52, 6, 721-733
- 18) Scarciglia, F; Terribile, F; Colombo, C; Cinque, A. (2003) Late Quaternary climatic changes in Northern Cilento (Southern Italy): an integrated geomorphological and paleopedological study, *Quaternary International*, 106, 141-158
- 19) Scarciglia, F; Terribile, F; Colombo, C; (2003) Micromorphological evidence of paleoenvironmental changes in Northern Cilento (South Italy) during the Late Quaternary, *Catena*, 54, 3, 515-536
- 20) Liu, F; Colombo, C; Adamo, P; He, JZ; Violante, A. (2002) Trace elements in manganese-iron nodules from a Chinese Alfisol. *Soil Science Society of America Journal*, 66, 2, 661-670
- 21) Violante, Arienzo; Arienzo, M; Sannino, F; Colombo, C; Piccolo, A; Gianfreda, L. (1999) Formation and characterization of OH-Al-humate-montmorillonite complexes, *Organic geochemistry*, 30, 6, 461-468
- 22) Liu, Fan; He, Jizheng; Colombo, Claudio; Violante, Antonio (1999) Competitive adsorption of sulfate and oxalate on goethite in the absence or presence of phosphate, *Soil science*, 164, 3, 180-189
- 23) Malucelli, Francesco; Terribile, Fabio; Colombo, Claudio (1999) Mineralogy, micromorphology and chemical analysis of andosols on the Island of Sao Miguel (Azores)", *Geoderma*, 88, 1, 73-98
- 24) Violante, A; Colombo, C; Cinquegrani, G; Adamo, P; Violante, P. (1998) Nature of mixed iron and aluminium gels as affected by Fe/Al molar ratio, pH and citrate", *Clay Minerals*, 33, 3, 511-519
- 25) Colombo, C; Violante, A (1997) Effect of ageing on the nature and interlayering of mixed hydroxy Al-Fe-montmorillonite complexes, *Clay Minerals*, 32, 1, 55-64
- 26) Adamo, P; Colombo, C; Violante, P. (1997) Iron oxides and hydroxides in the weathering interface between Stereocaulon vesuvianum and volcanic rock, *Clay minerals*, 32, 3, 453-461,
- 27) Colombo, C; Violante, A., (1996) Effect of time and temperature on the chemical composition and crystallization of mixed iron and aluminum species *Clays and clay minerals*, 44, 1, 113-120
- 28) Colombo, C; Barrón, V; Torrent, J. (1994) Phosphate adsorption and desorption in relation to morphology and crystal properties of synthetic hematites, *Geochimica et Cosmochimica acta*, 58, 4, 1261-1269
- 29) Colombo, C; Torrent, J. (1991). Relationships between aggregation and iron oxides in Terra Rossa soils from southern Italy, *Catena*, 18, 1, 51-59,
- 30) Colombo, C; Buondonno, A; Violante, A; Torrent, J; (1991) The contrasting effect of goethite and hematite on phosphate sorption and desorption by Terre Rosse, *Zeitschrift für Pflanzenernährung und Bodenkunde*, 154, 4, 301-305

- 31) Violante, A; Colombo, C; Buondonno, A. (1991) Competitive adsorption of phosphate and oxalate by aluminum oxides, Soil Science Society of America Journal, 55, 1, 65-70,

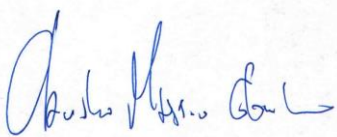
Chapter of books

- De Cristofaro A., Colombo C., Gianfreda L., Violante A. (1999). Effect of pH, exchange cations and hydrolytic species of Al and Fe on formation and properties of montmorillonite protein complexes. II SYMPOSIUM INTERNATIONAL DU GROUPE DE TRAVAIL M.O. (ISMOM 96). NANCY. vol. I, pp. 159-165 Edited by Berthlein, et al, Kluwer Academic/Plenum Publisher, New York
- Colombo, C., Sellitto, M.V., Palumbo, G., Terribile, F., Stoops, G. (2007) Characteristics and genesis of volcanic soils from South Central Italy: Mt Gauro (Phlegraean Fields, Campania) and Vico lake (Latium). In Soils of Volcanic Regions in Europe. Arnalds, O., Bartoli, F., Buurman, P., Oskarsson, H., Stoops, G., Garcia-Rodeja, E. (Ed). Springer, Berlin, Heidelberg, New York. pages 197-229. ISBN 978-3-540-48710-4
- Sellitto V.M., Barron V., Palumbo G., Colombo C. (2007) Application of Diffuse Reflectance Spectroscopy (DRS) to study European Volcanic Soils: a preliminary examination. In Soils of Volcanic Regions in Europe. Arnalds, O., Bartoli, F., Buurman, P., Oskarsson, H., Stoops, G., Garcia-Rodeja, E. (Ed). Springer, Berlin, Heidelberg, New York. Pag 437 – 452 ISBN 978-3-540-48710-4
- Giuliano Langella, Fabio Terribile, Angelo Basile, Antonello Bonfante, Antonio Carbone, Colombo C., Michela Iamarino, Piero Manna, Luciana Minieri, Simona Vingiani (2013). Future Soil Issues. In: Costantini E. Dazzi C. . The Soils of Italy, World Soils Book Series,. WORLD SOILS BOOK SERIES, p. 303-348, Springer Science+Business Media Dordrecht 2013, ISBN: 978-94-007-5641-0, ISSN: 2211-1255, doi: DOI: 10.1007/978-94-007-5642-7_11
- Colombo C., Palumbo G., Angelico R; Ceglie A., He, Ji-Zheng; Liu, (2013). Molecular Size Distribution and Shape of Humic Substance and Ferrihydrite Coprecipitated Complexes. In Jianming Xu Jianjun Wu, Yan He "Functions of Natural Organic Matter in Changing Environment" Springer Netherlands, Volume: ISBN 978-7-308-10271-1 pag. 108-110.

I certify that the above information is accurate and correct.

Date: 13/06/2015

Signature:



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