Curriculum vitae

Personal information

Full name:	Katia Lily Montenegro Rayo
Nationality:	Nicaraguan
Date of birth:	July 19th, 1964
Place of birth:	Estelí, Nicaragua
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Professional experience

2011-Present: Universitarian docent, Titular docent with doctoral studies. Laboratory of Biotechnology, UNAN-Managua. Bio and phyto-remediation of contaminated sites (pesticides and metals). Trace analysis of metals, pesticides and metabolites in environmental and vegetation matrices and food by Gas Chromatography with Mass Detector (GC/MS), High Performance Liquid Chromatography (HPLC) with UV-VIS detector and by ICP-OES (Inductively Coupled Plasma- Optical Emission Spectroscopy).

2008–2011: Universitarian docent, Titular docent with doctoral studies. Laboratory of organic contaminants, CIRA-UNAN[1]. Enviromental quality of water, soil, sediment, and biota. Trace analysis of pesticides and metabolites by GC with ECD (Electron Capture Detector), TSD (Thermo-ionic Specific Detector) and MS.

2002–2008: PhD student, Chemical Ecology and Ecotoxicology Division, Department of Ecology, Lund University, Sweden.

1999–2002: Licentiate (MSc) student, Chemical Ecology and Ecotoxicology Division, Department of Ecology, Lund University, Sweden.

1997–1998: Researcher in aquatic resources, Section of liquid chromatography, CIRA-UNAN[1]. Enviromental quality of water, soil, sediment and biota. Trace analysis of pesticides and PAHs (Polyciclic aromatic hydrocarbons) in environmental matrices by High Performance Liquid Chromatography (HPLC) with UV-VIS and fluorescence detectors.

1996–1997: Head of laboratory, Section of physical-chemical analysis, Central laboratory, INAA[2]. Water quality for human consumption.

1994–1996: Researcher A in Aquatic Resources, Section of gas chromatography, CIRA-UNAN[1]. Enviromental quality of water, soil, sediment and biota. Trace analysis of pesticides and metabolites and PCBs (Polychlorinated biphenyls) by GC/ECD).

1987–1994: Head of laboratory, Section of fresh waters, CIRA-UNAN[1]. Water quality for different uses (human consumption, protection of aquatic life, irrigation, industrial,

recreational). Spectrophotometry UV-Vis, Ion chromatography, Flame photometry, potenciometry, volumetry and gravimetry.

1985-1987: Chemical analyst, Central laboratory of fuels and oils, EPS/PETRONIC[3]. Quality control of petroleum products (Primary distillation, viscosity, flash point, volumetry, gravimetry).

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[1] CIRA-UNAN: Research Center for Aquatic Resources of Nicaragua - National Autonomous University of Nicaragua.
[2] INAA: Nicaraguan Institute of Aqueducts and Sewers.
[3] EPS/PETRONIC: Sandinista Popular Army/Nicaraguan Petroleum Institute.

Education

2008: PhD in the subject Ecology with specialization in Chemical Ecology/ Ecotoxicology, Department of Ecology, Lund University, Sweden. Supervisor: Prof. Göran Bengtsson, Goran.Bentsson@ekol.lu.se.

2002: PhL (Philosophy Licentiate, MSc.) in the subject Ecology with specialization in Chemical Ecology/Ecotoxicology, Department of Ecology, Lund University, Sweden. Supervisor: Prof. Göran Bengtsson.

1994: Chemical engineer, National University of Engineering "Simón Bolívar", Managua, Nicaragua.

1984: Chemical technician with specialty in Analyst, Polytechnic Institute of Chemistry "Mártires de Girón", La Habana, Cuba.

Academic merits

Publications

2008: Doctoral thesis: Hierarchical responses to organic contaminants in aquatic ecotoxicological bioassays: from microcystins to biodegradation. Department of Ecology, Lund University, Sweden. ISBN 978-91-7105-279-7.

2004: Introductory paper to the doctoral studies, No. 163: Ecotoxicological effects of DDT and glyphosate on aquatic organisms: a case study. Department of Ecology, Lund University, Sweden. ISSN 1100-1844.

2004: Reduced grazing rates in *Daphnia pulex* caused by contaminants: Implications for trophic cascades. Journal of Environmental Toxicology and Chemistry (ET&C) Vol. 23 No. 11 pp. 2641-2648.

2002: Licentiate thesis: Ecological implications of DDT and glyphosate — linking toxicology and trophic cascading. Department of Ecology, Lund University, Sweden. ISBN 91-631-3371-7.

Manuscripts

I. Bengtsson, G, and Montenegro, K. Growth or microcystin production preserved in pesticide–exposed cyanobacteria?. Eight draft.

II. Montenegro, K. and Bengtsson, G. Diversity–productivity relationships in pesticide–exposed Chlorophyta communities. Second draft.

III. Montenegro, K., and Bengtsson, G. Costs and benefits of toxin production in herbicide–stressed *Microcystis aeruginosa*. First draft.

IV. Montenegro, K., Barmen, G. and Bengtsson, G. Contribution of groundwater residence time and biodegradation to the persistence and effects of pesticides in aquifers. First draft.

V. Montenegro, K. Effects of pesticides on nitrogen mineralization, ammonification and nitrification in tropical soils used for tobacco cultivation. On going.

Teaching and supervision

2011-2012: Main teacher. Course of general ecology. Master Program in Environmental Management, Faculty of Sciences, UNAN-Managua. Themes: Introduction and basic ecological concepts; The physical environment; Population ecology; Community ecology; Ecosystems ecology; Human ecology.

2011: Main supervisor of Bachelor thesis: Effects of pesticides on the processes of mineralization, ammonification and nitrification in soils used for tobacco cultivation in the municipality of Estelí, in the period from February to May, 2011. Career of Environmental Sciences, FAREM-Estelí. Students: Ana Zuriel Cuba Rugama, María Nelly Herrera Dávila, Obelic Matey Calderón.

2011: Teacher. Course of Ecotoxicology. Regional Master Program in Water Sciences: emphasis on water quality, CIDA/ACDI/CIRA-UNAN. Themes: Ecological effects of contaminants on individuals and population in aquatic environments; Aquatic toxicity testing; Ecotoxicology of aquatic communities and ecosystems; Statistical analysis. Instructor in exercises of Probabilistic Ecological Risk Assessment (PERA) with the software @Risk.

2008: Invited lecturer and supervisor of literature projects. Spring course of Ecotoxicology I (BIO 644). Department of Ecology, Lund University, Sweden.

2004 and 2005: Instructor in exercises of Probabilistic Ecological Risk Assessment (PERA) with the software @Risk. Autumn courses in Risk analysis (MVE 201). Department of Ecology, Lund University, Sweden.

2004-2005: Supervisor of Bachelor thesis: Impact of mining on water quality in the Río Artiguas microbasin: emphasis on heavy metals. Career of Environmental Engineering, Central American University (UCA), Nicaragua. Students: Ligia and Tania Espinoza Benavides.

2004-2005: Supervisor of MSc. thesis: Physical-chemical and biological diagnosis on water quality of Río San Juan and four of its main tributaries. MSc. Program on Environmental Management CURN/UNAN-Managua, Nicaragua. Student: Sylvia Fuentes Huelva.

2004: Docent. Distant limnology course. MSc. Program in Water Sciences (Red CARA-CIRA/UNAN-Managua). Themes: Dissolved gases in water, Ionic composition of lakes; Nitrogen; Phosphorus; Essential micronutrients: Iron, Sulfur and Silica.

2003-2004: Supervisor of Minor Field Study (MFS) D20: Comparison of passive and active sampling of polar organic compounds in Nicaraguan waters. Sida-Sarec/Department of Chemistry and Environmental Chemistry, Umeå University. Students: Ingalill Rosén and Malin Granström.

2003: Teacher. Limnology course. MSc. Program in Water Sciences (Red CARA-CIRA/UNAN-Managua). Themes: Water properties; Physical processes; Chemical processes.

2003: Teacher. Fundamentals of Ecotoxicology course. MSc. Program in Water Sciences (Red CARA-CIRA/UNAN-Managua). Themes: Types and sources of organic contaminants; Transport and fate of organic contaminants in aquatic ecosystems.

2002: Teacher. Post-graduate course on Environmental Sciences (SIDA-SAREC /UNAN-Managua). Theme: Effects of contaminants on organisms' life-history traits.

2002: Supervision of MSc. thesis: Effects of glyphosate on the toxin production of *Microcystis aeruginosa*. Chemical Ecology and Ecotoxicology Division, Department of Ecology, Lund University, Sweden. Student: Heidi-Savelli Söderberg.

2001: Teacher. Limnology course. MSc. Program in Water Sciences (Red CARA-CIRA/UNAN-Managua). Theme: Properties and physical and chemical processes of fresh water ecosystems.

Participation in international congresses, meetings and workshops

May, 2012: Platform presentation at the 6th World Congress (22nd Annual Meeting SETAC-Europe) of the Society of Environmental Toxicology and Chemistry (SETAC). Berlin, Germany. Trade-offs in herbicide-stressed *Microcystis aeruginosa*: growth vs. toxin production.

August, 2007: Platform presentation at the 30th Congress of the International Association of Applied and Theoretical Limnology (SIL), Montréal, Canada. Productivity versus diversity in herbicide-disturbed algal communities.

July, 2005: Poster presentation at the Summer Meeting of the American Society of Limnology and Oceanography (ASLO), Santiago de Compostela, Spain. Tradeoffs between growth and toxin production in stressed cyanobacteria

August, 2004: Poster presentation at the 10th International Symposium of the International Society for Microbial Ecology (ISME), Cancún, México. Effects of glyphosate on the toxin production and growth of *Microcystis aeruginosa*.

October, 2002: Platform presentation at the 5th Annual Meeting of the Latin-American Society of Environmental Toxicology and Chemistry (SETAC-Latin America), Vitória, Brazil. Efectos de cascada causados por DDE y glifosato, expresados en la disminución de la eficiencia de pastoreo en *Daphnia pulex*.

June, 2002: Participant at the 9th European Ecological Congress, Lund, Sweden.

May, 2001: Platform presentation at the 11th Annual Meeting of the European Society of Environmental Toxicology and Chemistry **(**SETAC-Europe), Madrid, Spain. Impact of pesticides on grazing efficiency in zooplankton.

June, 2000: Poster presentation at the 10th Summer Meeting of the American Society of Limnology and Oceanography (ASLO), Copenhagen, Denmark. Impact of pesticides on grazing efficiency in zooplankton.

September, 1999: Participant at the 8th European Ecological Congress, Thesaloniki, Greece.

February, 1998: Participant at the International conference on pesticide use in developing countries: impact on health and environment, UNA-SIDA, San José, Costa Rica.

June, 1997: Nicaraguan representative in the seminar-workshop on water quality. Central American region INAA-SRE (Mexican Secretary of Foreign Affairs)-DGCOH, México D.F., México.

May, 1989: Participant at the Central American and Caribbean region workshop on analytical chemistry in sanitary and environmental research, UNAH-SSPH-AIQAA, Tegucigalpa, Honduras.

Managua, July 09th, 2012