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Ecological functions and environmental fate of exopolymers of *Acidobacteria*

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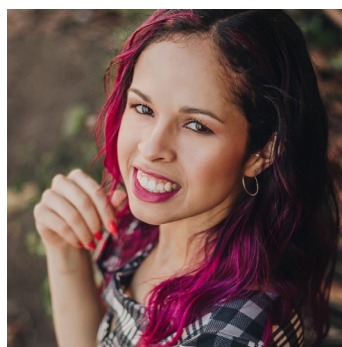
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About the author Publications

Ohana Yonara de Assis Costa was born on 3rd June 1990 in Manaus (Amazonas), Brazil. In 2011, she completed her BSc degree in Biomedicine at the Catholic University of Brasilia (UCB), Brazil. During her bachelor, she worked with microbial community diversity in goat rumen and metagenomic library screening. In 2012 she started her MSc studies in Genomic Sciences and Biotechnology at the Catholic University of Brasilia (UCB), Brazil. Her MSc research was the first work to evaluate the microbial diversity in the ethanol production process using high-throughput sequencing in Brazil, research performed under the supervision of Prof. Dr. Betania F. Quirino. In 2014 she obtained her MSc degree and started working as a research assistant in projects involving microbial community analysis in oil palm trees and protein expression for ethanol production. In 2016 she moved to The Netherlands to start her PhD research at the Department of Microbial Ecology of the Netherlands Institute of Ecology (NIOO-KNAW) within the International collaboration between CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior-Brazil) and NIOO-KNAW on the Ecology and Genomics of *Acidobacteria* under supervision of Prof. Dr. Eiko Kuramae and in collaboration with the Institute of Biology of Leiden University under the supervision of Prof. Dr. Jos Raaijmakers. The findings of her PhD research are described in this thesis.

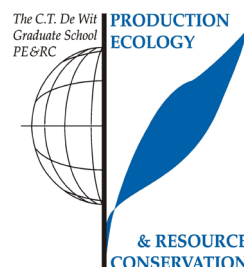


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- Costa OYA**, Zerillo MM, Zühlke D, Kielak AM, Pijl A, Riedel K, Kuramae EE (2020) Responses of *Acidobacteria Granulicella* sp. WH15 to high carbon revealed by integrated omics analyses *Microorganisms*, v. 8, p. 244.
- Kuramae EE, Derksen S, Schlemper TR, Dimitrov MR, **Costa OYA**, Silveira APD (2020) Sorghum growth promotion by *Paraburkholderia tropica* and *Herbaspirillum frisingense*: putative mechanisms revealed by genomics and metagenomics. *Microorganisms*, v.8, p. 725.
- Costa OYA**, Pijl A, Kuramae EE Identification of bacterial and fungal co-occurrence networks during assimilation of acidobacterial extracellular polymers in soil. (*Chapter 5, submitted*).
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- Tupinamba DD, Cantao M, **Costa OYA**, Bergmann J, Kruger R, Kyaw CM, Barreto CC, Quirino BF (2016) Archaeal community changes associated with cultivation of Amazon Forest soil with oil palm. *Archaea*, v. 2016, p. 1-14.
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- Bergmann JC, **Costa OYA**, Gladden JM, Singer S, Heins R, D’haeseleer P, Simmons BA, Quirino BF (2013) Discovery of Two novel β -glucosidases from an Amazon soil metagenomic library. *FEMS Microbiology Letters*, v. 11.
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- Cunha IS, Barreto CC, **Costa OYA**, Bomfim MA, Castro AP, Kruger RH, Quirino BF (2011) *Bacteria* and *Archaea* community structure in the rumen microbiome of goats (*Capra hircus*) from the semiarid region of Brazil. *Anaerobe*, v. 17, p. 118-124.

Education Statement

PE&RC Training and Education Statement

With the training and education activities listed below the PhD candidate has complied with the requirements set by the C.T. de Wit Graduate School for Production Ecology and Resource Conservation (PE&RC) which comprises of a minimum total of 32 ECTS (= 22 weeks of activities)



Review of literature (4.5 ECTS)

- Microbial extracellular polymeric substances: ecological function and impact on soil aggregation (2018)

Writing of project proposal (4.5 ECTS)

- Physiological and ecological survival strategies of soil bacteria belonging to the phylum *Acidobacteria* (2016)

Post-graduate courses (4.6 ECTS)

- Stable isotope applications in microbiology and environmental studies; Wimek-HIGRADE (2017)
- The power of RNA-seq; EPS (2018)
- Introduction to R for statistical analysis; PE&RC (2018)
- Data carpentry genomics; WUR (2019)
- Multivariate analysis; PE&RC (2019)

Deficiency, refresh, brush-up courses (1.5 ECTS)

- Basic statistics; PE&RC (2018)

Competence strengthening / skills courses (3.6 ECTS)

- Effective Communication; Leiden University (2017)
- Communication in science; Leiden University (2018)
- Time Management; Leiden University (2018)
- In Design; WUR Library (2018)
- Scientific Artwork; WUR Library (2018)

Scientific integrity / ethics in science activity (0.4 ECTS)

- PhD Workshop: principles of good academic research; NIOO (2016)
- Scientific conduct; Leiden University (2017)

PE&RC Annual meetings, seminars and the PE&RC weekend (1.8 ECTS)

- PE&RC Weekend (2018, 2019)
- PE&RC Day (2018, 2019)

Discussion groups / local seminars / other scientific meetings (5.9 ECTS)

- NIOO Seminar/ME meetings (2016-2019)
- Metagenomics Journal Club (2017-2019)

International symposia, workshops and conferences (8.8 ECTS)

- Thunen symposia; poster presentation; Braunschweig (2016)
- ISME Symposia; poster presentation; Leipzig (2018)
- Ecology of soil microorganisms; poster presentation; Helsinki (2018)
- Thunen symposia; oral presentation; Braunschweig (2019)

Supervision of MSc students (3 ECTS)

- Optimization of cell growth and EPS production of 5B5 and WH15 strains belonging to *Granulicella* sp. of phylum *Acidobacteria*
- A survey of the soil microbial communities inhabiting heavy metal contaminated rhizosphere

The research described in this thesis was performed at the Department of Microbial Ecology of the Netherlands Institute of Ecology - (NIOO-KNAW); O.Y.A. Costa was supported by an SWB grant from CNPq [202496/2015-5] (Conselho Nacional de Desenvolvimento Científico e Tecnológico, Brasil).

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