EP&DT UFPR
ENCONTRO DE PESQUISA
& DESENVOLVIMENTO TECNOLÓGICO

I ENCONTRO DE PESQUISA &
DESENVOLVIMENTO TECNOLÓGICO DA UFPR

22 a 23 de novembro de 2018 l Setor de Tecnologia l Curitiba - PR

Bacterial in microalgal cultures: Community composition

DENISSE TATIANA MOLINA AULESTIA, JULIO CESAR DE CARVALHO, CARLOS RICARDO SOCCOL
FEDERAL UNIVERSITY OF PARANA, GRADUATE PROGRAM IN BIOPROCESS ENGINEERING AND BIOTECHNOLOGY

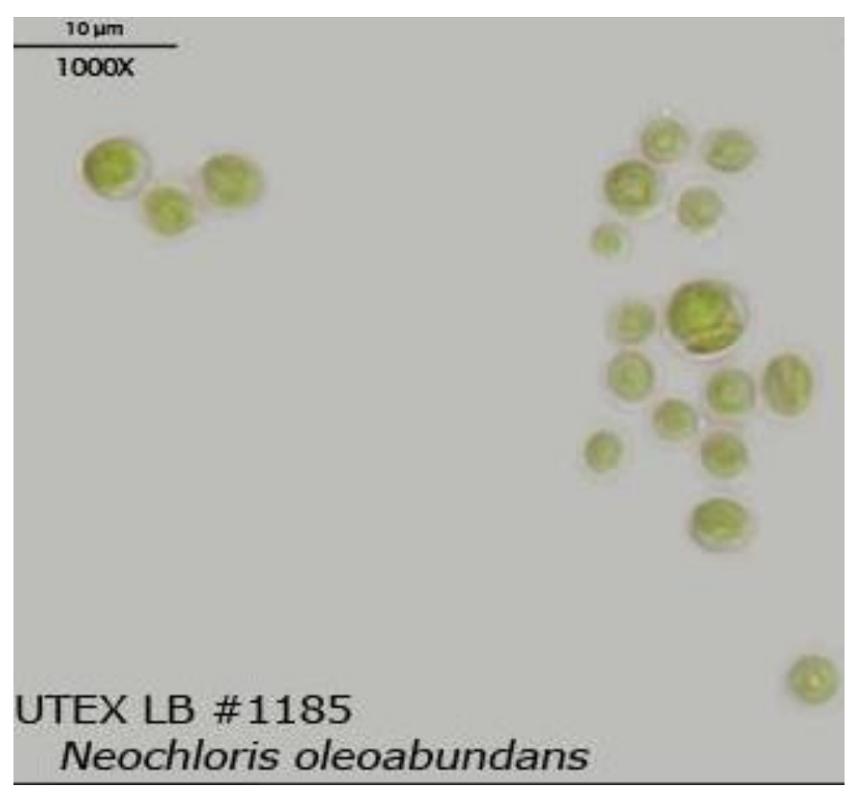
INTRODUCTION

Phycologists regard any organisms with α-Chlorophyll and a thallus not differentiated into roots, steam and leaves to be an alga (Lee and Shen 2004; Abeliovich et al. 2005). Nowadays, algae biomass can be produce in open systems and photobioreactors. These biomass is used in different industries: dietary supplements, pigments biofuels, cosmetics, pharmaceuticals (Day et al. 2012a; Huang et al. 2014a). At present, one of the most important problem in the algae production is the contamination. But in some cases xenic or polyculture are one relevant approach in the analysis of the population dynamics using different molecular techniques.

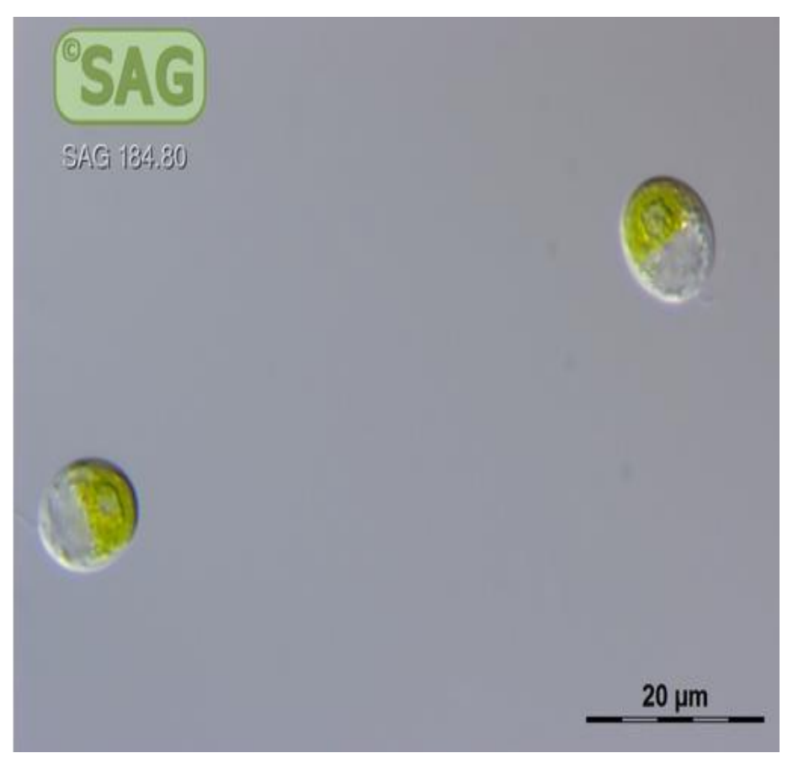
OBJECTIVES

Identify possible prokaryotic contaminants present in the cultures of *Neochloris oleoabundans* UTEX 1185 and *Dunaliella salina* SAG 184.80, and two strains of cyanobacteria *Spirulina platensis* (*Arthrospira*) SAG 257.80 and *Spirulina maxima* (*Arthrospira*) SAG 84.79.

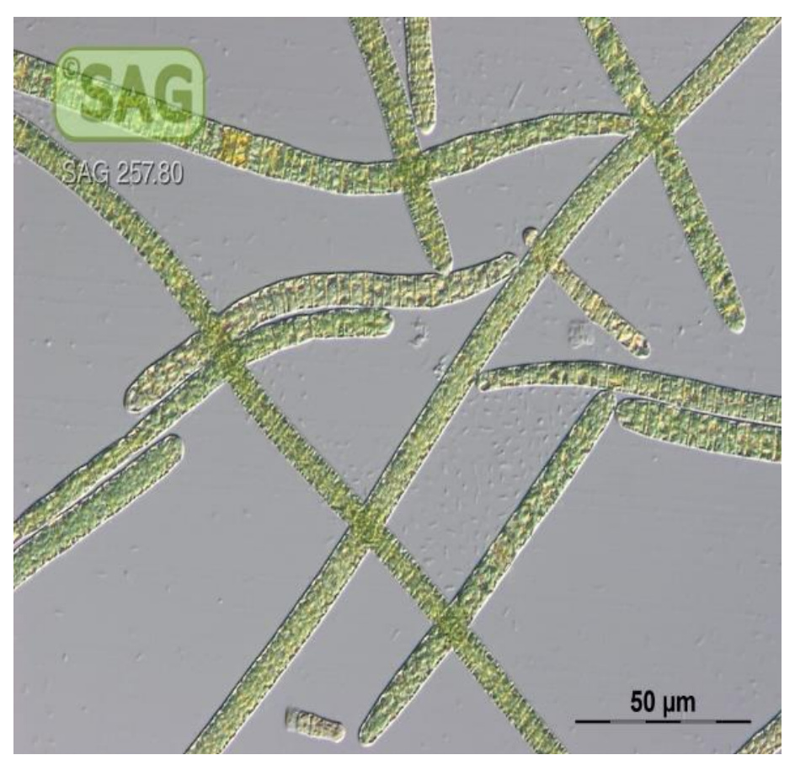
MATERIALS AND METHODS



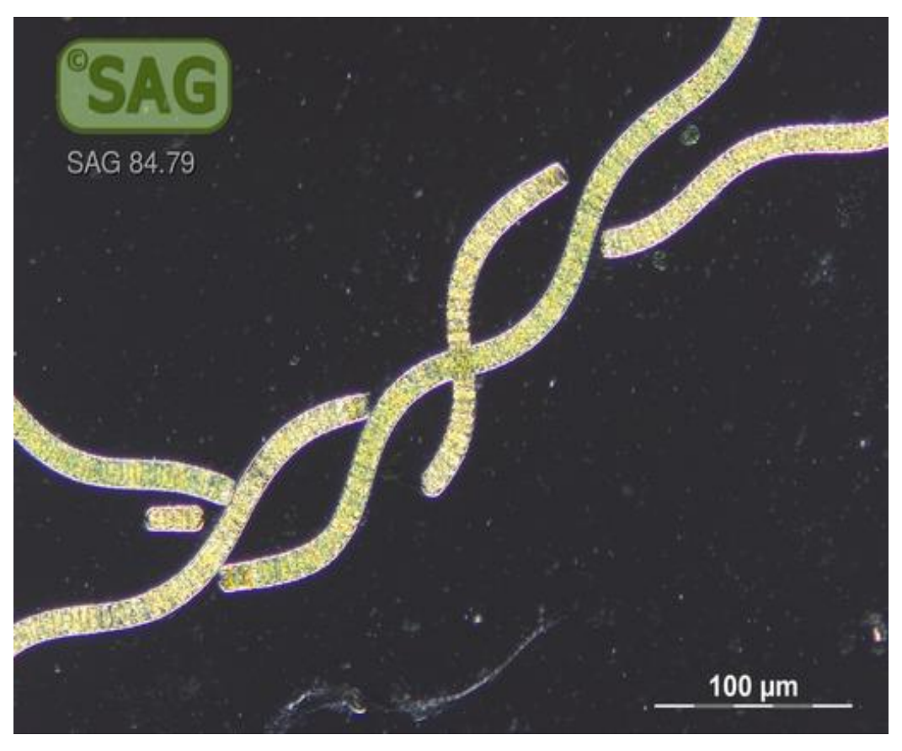
Neochloris oleabundans UTEX *1185*



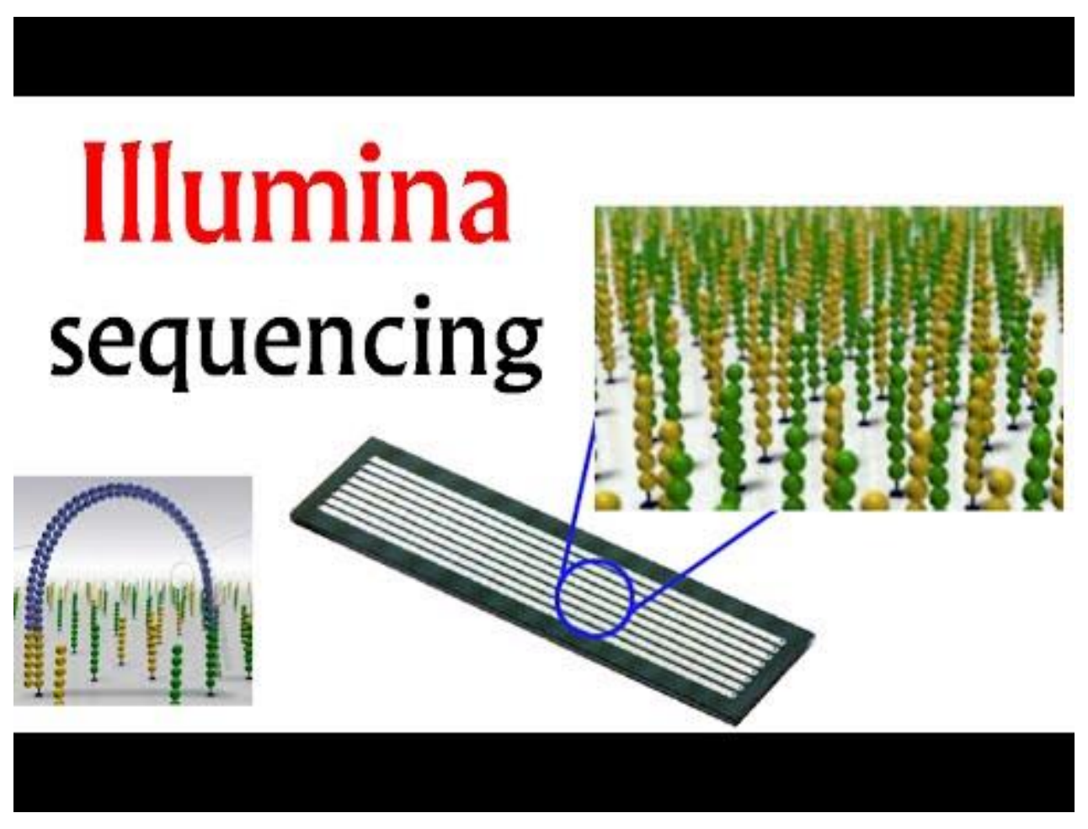
Dunaliella salina SAG *184.80*



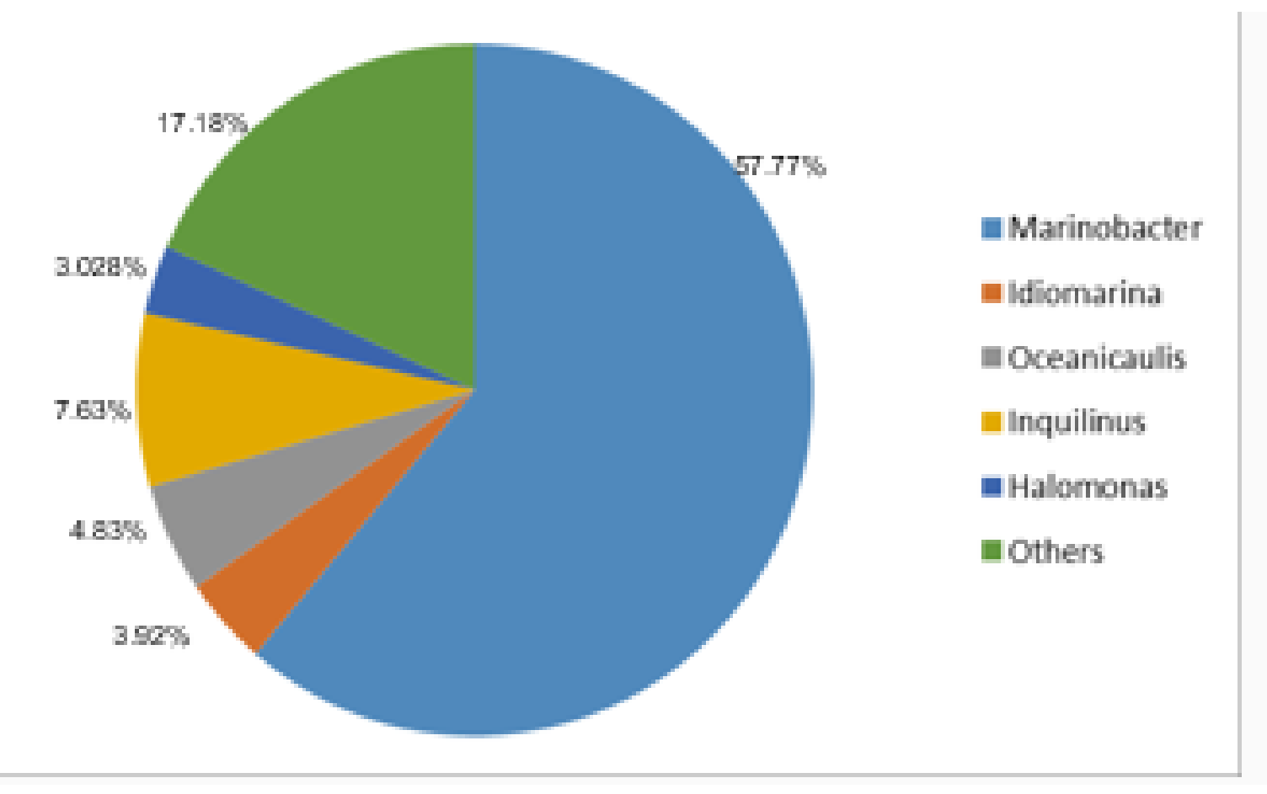
Spirulina maxima SAG 84.79



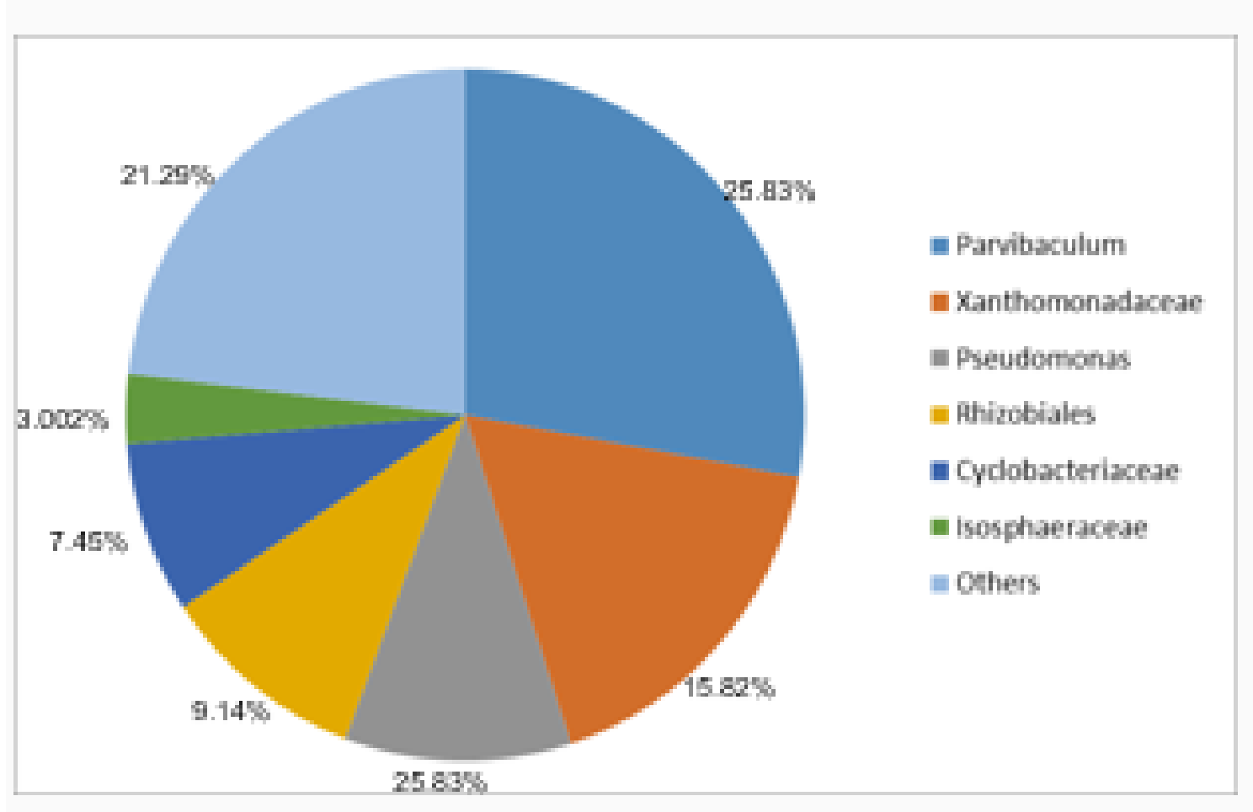
Spirulina platensis SAG 257.80



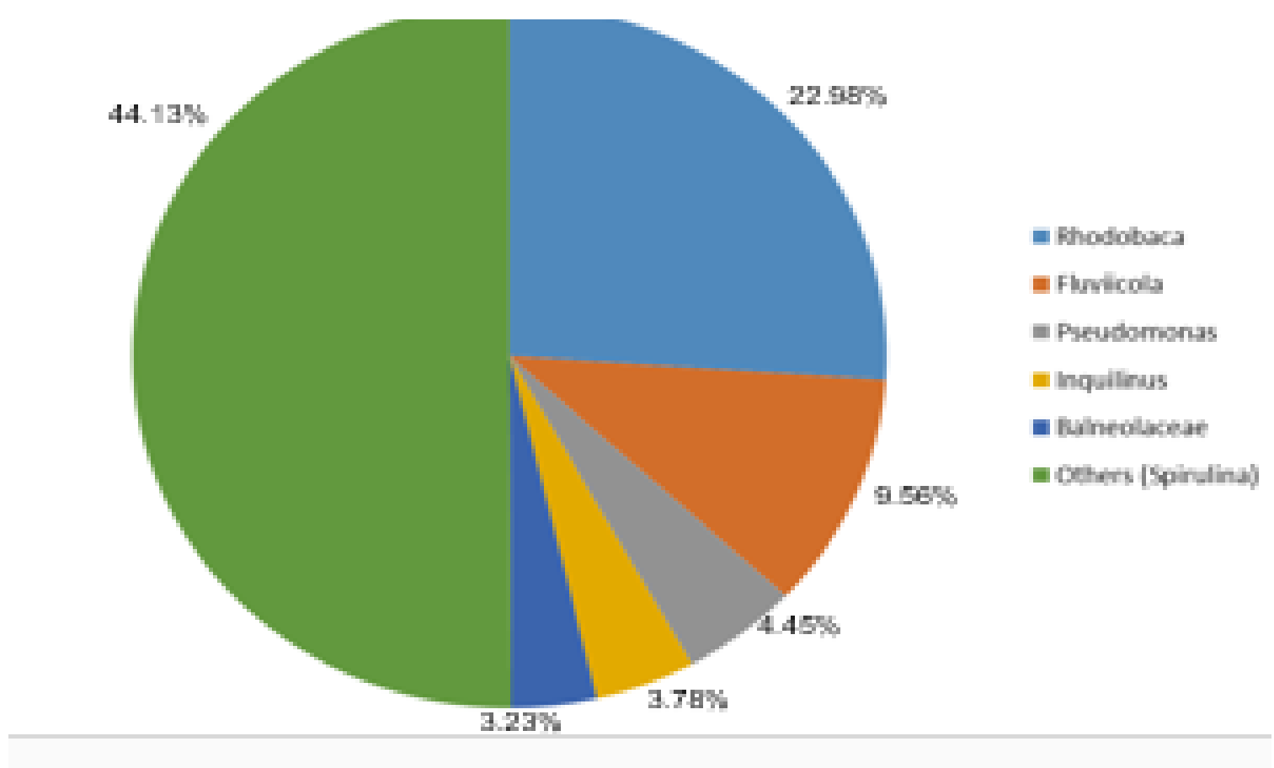
RESULTS E DISCUSSION



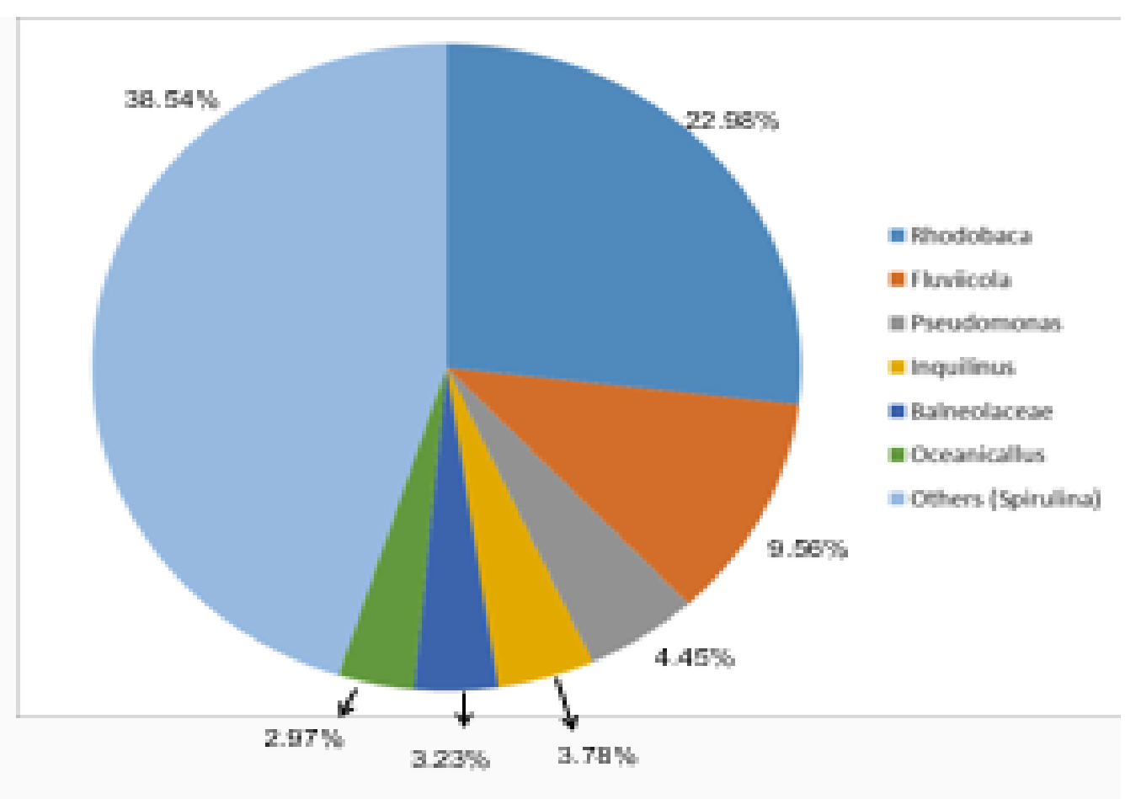
Dunaliella salina (63)



Neochloris oleoabundans (115)



Spirulina maxima (101)



Spirulina platensis (93)

CONCLUSION

Metagenomic assay identified 372 microorganisms: *Dunaliella salina* (63), *Neochloris oleoabundans* (115), *S. platensis* (93), *S. maxima* (101).

The biological contaminants with the greatest abundance were: *Dunaliella salina*: *Marinobacter* 57.67%, *Neochloris oleoabundans: Parvibaculum* 25.83%, *S. máxima* and *platensis: Rhodobaca* 44.99% and 22.98% mass of bacteria contaminant.

REFERÊNCIAS BIBLIOGRÁFICAS

1. Abeliovich A. et all (2005) Handbook of Microalgal Culture. 577. doi: 10.1002/9780470995280
2. Day JG, Slocombe SP, Stanley MS (2012a) Bioresource Technology Overcoming biological constraints to enable the exploitation of microalgae for biofuels. Bioresour Technol 109:245–251. doi: 10.1016/j.biortech.2011.05.033
3. Huang Y, Liu J, Li L, Pang T, Zhang L (2014b) Efficacy of binary combinations of botanical pesticides for rotifer elimination in microalgal cultivation. Bioresour Technol 154:67–73. doi: 10.1016/j.biortech.2013.11.098
4. Lee Y-K, Shen H (2004) 3 Basic Culturing Techniques. Handb microalgal Cult Biotechnol Appl Phycol 40

Promoção:

Organização:

Apoio Institucional: