

Promising bacteria for glyphosate degradation

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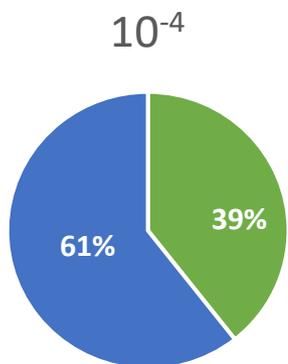
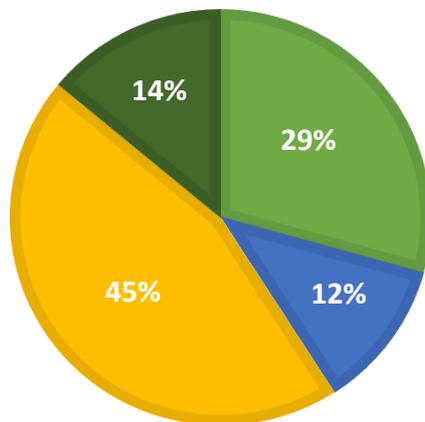
Soil contamination is serious. One of the main factors contributing to this is the accelerated development of agriculture, which led to a strong increase in the use of herbicides. Herbicides formulated through glyphosate, have a carcinogenic potential in laboratory animals, being classified by the WHO as a probable carcinogen for humans. Our research works in the area of decontamination of agricultural soils, using native microorganisms, where the pollutants are transformed into by-products that are less harmful to the environment. A sampling of a wine farm in Douro was collected, followed by isolation of bacterial by means of selective cultures and their respective pure culture. Subsequently, bacterial tests were performed *in vitro*, with normal and duplicate concentrations of glyphosate. At last, was isolated 379 bacteria. The results were as expected, with greater bacterial growth occurring in low soil dilutions of around 26%, as well as in recommended concentrations. Instead, growth at high dilutions and concentrations was found to be lower with a percentage of 12%. After bacterial tests, was found that only 4.80% of the bacteria have the potential for glyphosate degradation. We concluded that in soils where the use of herbicides is recurrent, there are promising bacteria for their degradation.

Keywords: Glyphosate, bioremediation, bacteria, soil

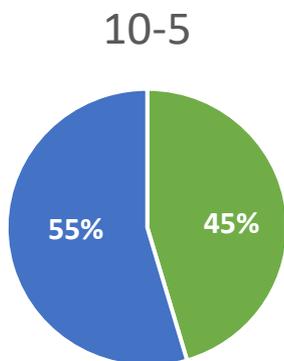
Results and Discussion

BACTERIA GROWTH

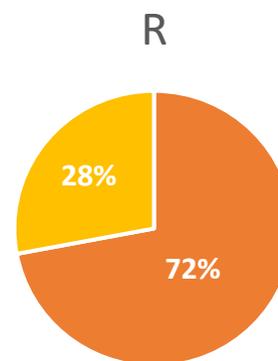
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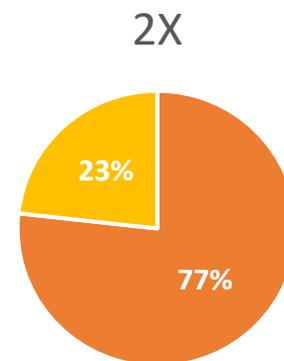
■ R ■ 2X



■ R ■ 2X

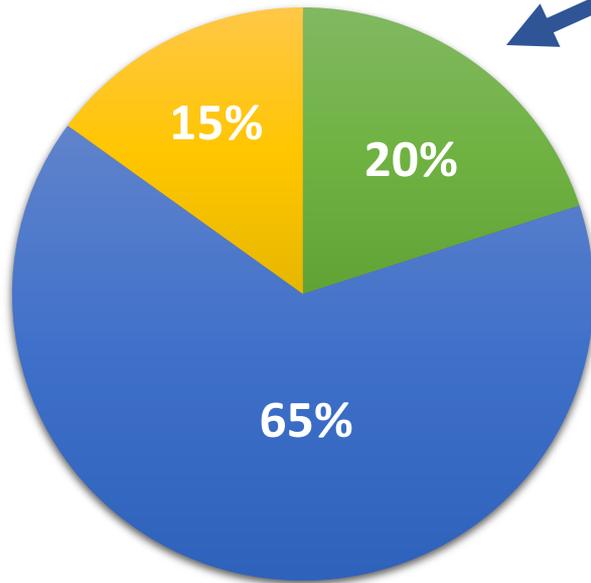


■ 10⁻⁴ ■ 10⁻⁵



■ 10⁻⁴ ■ 10⁻⁵

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■ Bottom ■ Middle ■ Up

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Conclusions

Total : isolated 379 bacteria

**4.80% bacteria have the potential for
glyphosate degradation**

Currently, we are proceeding to
**molecularly identify of promising
bacteria**

We also intend to extend our investigation
to **fungi.**



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Acknowledgments



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