

Selection of environmentally toxic microbial communities by bentazone herbicide pressure

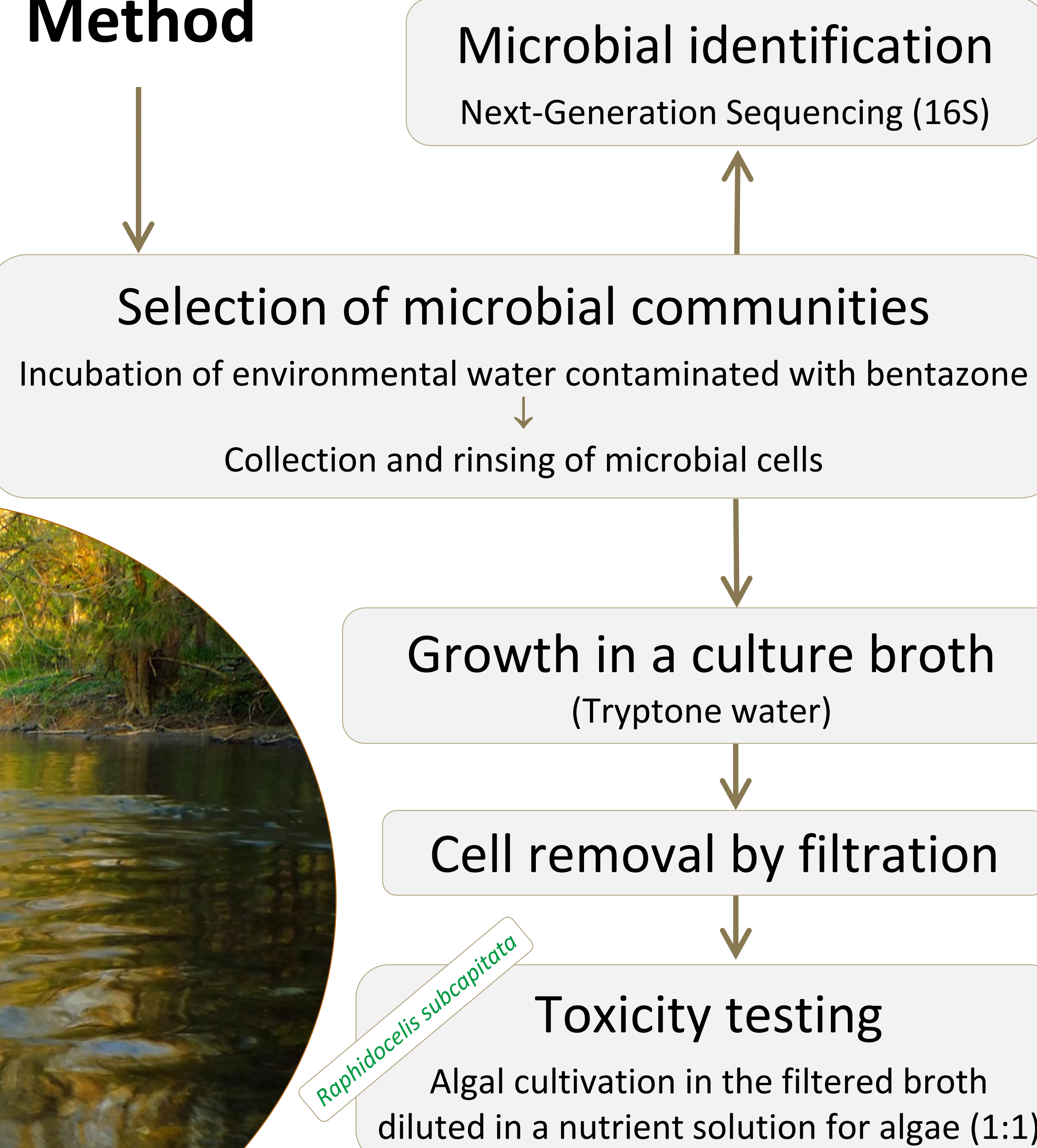
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Questions considered

- Which micro-organisms does the herbicide bentazone promote?
- Are these micro-organisms environmentally harmless?

Focus on aquatic environments

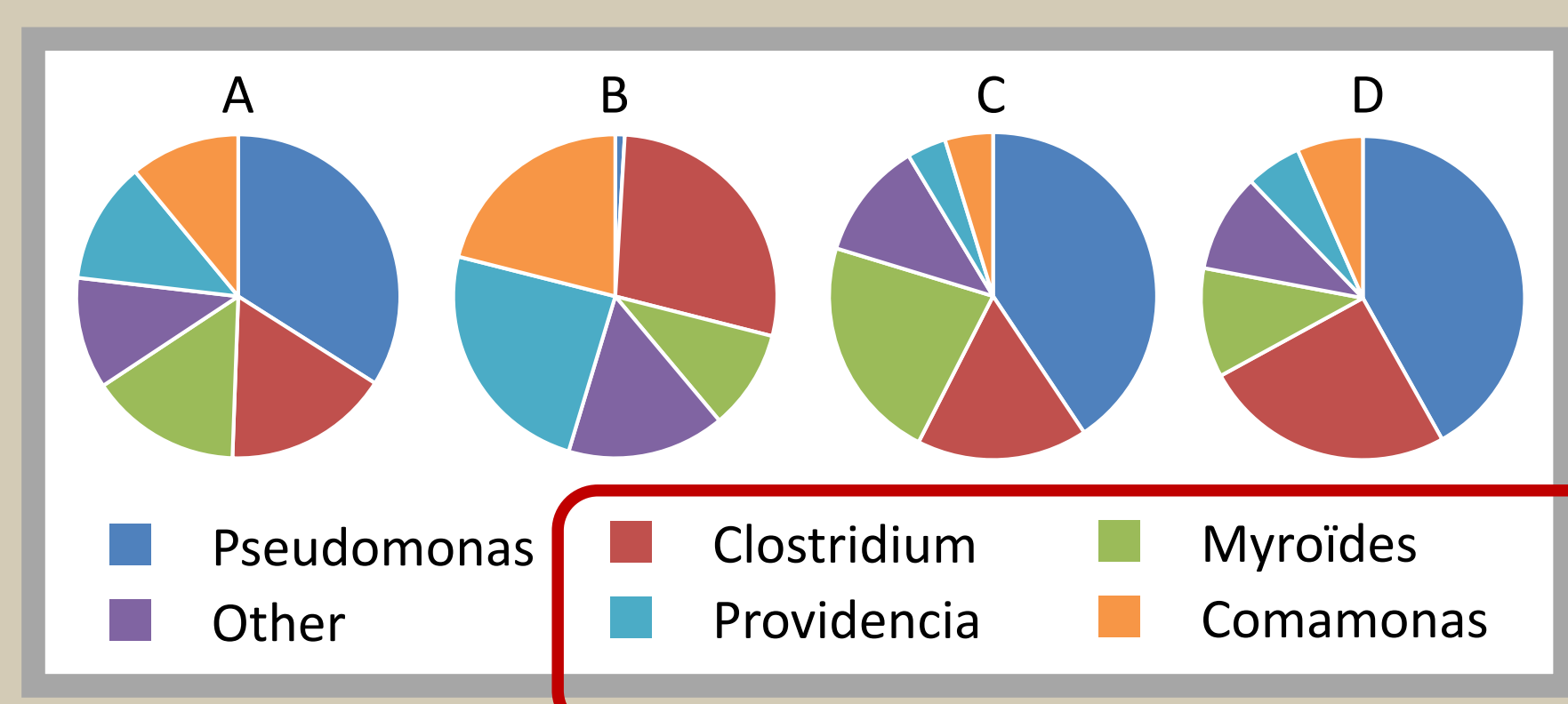
Method



Results

Bacterial composition

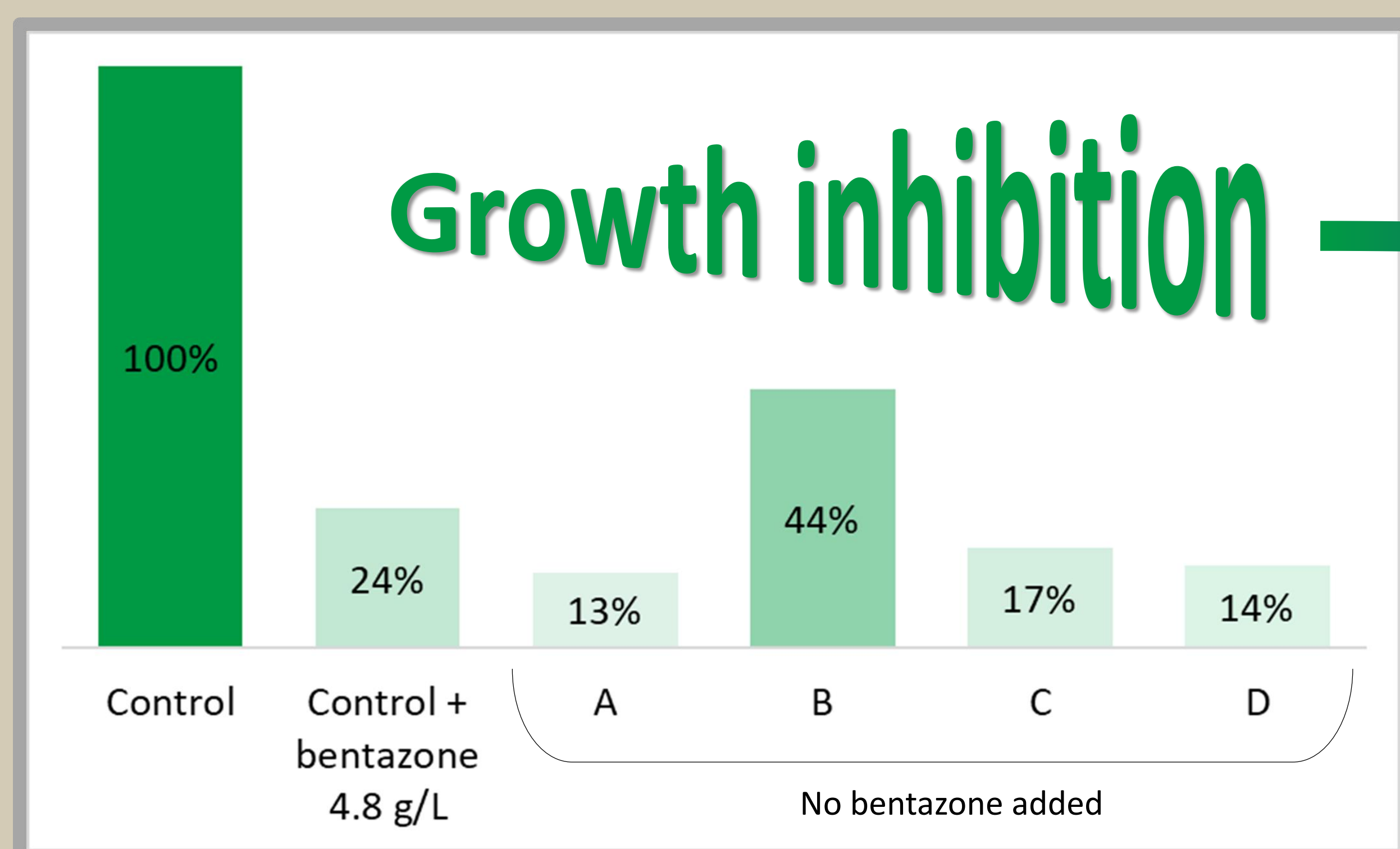
of microbial communities selected by bentazone from various ponds (A, C and D) and from rainwater (B).



Taxa common to A, B, C and D

Algal growth

in filtrates of the original broth (control) and of the broth modified by the microbial cultures (A, B, C and D).



Discussion/Conclusion

Taxonomic signature of bentazone pressure?

Maybe: microbial signatures of pesticide contaminations have been established in soils (Walder *et al.*, 2022).

Secretion of algicidal chemicals?

Probably: lots of bacteria, in particular strains of *Pseudomonas*, have been described as producers of algicidal chemicals (Coyne *et al.*, 2022).

Level of toxicity in laboratory testing?

Often higher than the addition of 4.8 g/L bentazone.

What happens in nature?

References

Coyne *et al.* (2022). Algicidal bacteria: a review of current knowledge and applications to control harmful algal blooms. *Frontiers in Microbiology*.

Walder *et al.* (2022). Soil microbiome signatures are associated with pesticide residues in arable landscapes. *Soil Biology and Biochemistry*.