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Evaluation of the soil fertilization with encapsulates of *Chlorella vulgaris* and a *C. vulgaris/Pseudomonas putida* consortium for the growth of meadow clover plantlets

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Freshwater algae, such as *Chlorella vulgaris*, are very rich in macro and micronutrients including constituents or metabolites like carbohydrates or proteins, but growth factors were also found in some strains, including *Chlorella*¹. Besides, organisms can be very useful as soil conditioners, improving soil stability and capacity to retain water². Moreover, if microorganisms are encapsulated, they are protected from the different environmental stress types; besides, they can also be gradually released to the soil³, along with the nutrients they can provide the soil with.

In this work three polymers were used to produce the encapsulates, maltodextrin (MD), gelatine (G) and arabic gum (GA). Several formulations with encapsulates of *Chlorella vulgaris* (A), alone or with the bacterium *Pseudomonas putida*, were tested. Studies of the plant growth were carried out using commercialised fertilizers (Substral) as a control, and also spray dried *Chlorella vulgaris* and *Chlorella*/bacteria (AB) consortium. Best developed plantlets, with the highest dried biomass of roots and stem/leaf parts, were those that were grown with soil fertilized with MD/G/AB 1:2:1, MD/GA/A 1:1:1 and 1:2:1 (w/w).

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3. Bashan, Y. et al. (2002) *Biol. Fertil. Soils* 35:359-368.