



Reinventing microbial formulation: microcapsules for growth and delivery

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Agriculture is moving toward a new model offering both productivity and sustainability. This new model is based on better practices and different class of treatment products which are biosourced and biodegradable. These new biofertilizers and biopesticides are often based on microbes, either symbiotic of plants or antagonist of pests. One major challenge to develop performant microbial products is to deliver live organisms in the field and to promote their survival after delivery, in order to obtain the expected benefits for plant.

Kapsera is developing a promising formulation technology allowing efficient encapsulation and delivery of live microbes in the field. This technology is based on a microfluidic device producing new type of alginate capsule¹ therefore biosourced and biodegradable. These capsules have a unique structure:

- a suitable size for agriculture purpose and microbial encapsulation (150 to 500 μm diameter)
- a thin shell of alginate (below 50 μm) optimized for mechanical resistance and porosity for nutrients and gas,
- a liquid core allowing various tailor-made formulations to optimize products viability.

These capsules are ideal for:

- Survival and growth of microbes in liquid media inside the microcapsules,
- Easy and controlled release of live organisms in the field.

Kapsera technology opens the way for a redefinition of the gold standard in formulation of products plant treatment.

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¹ Controlled production of sub-millimeter liquid core hydrogel capsules for parallelized 3D cell culture, *Lab on a Chip*, Doméjean 2017