



An introduction to the **OptiFreeze** technology for Flowers



In this newsletter:

- Introduction to OptiFreeze: how the technology improves shelf life and quality of flower cuttings.
- Partnership of OptiFreeze and Syngenta Flowers.
- What's next: getting ready for the technology to be fully commercialized.

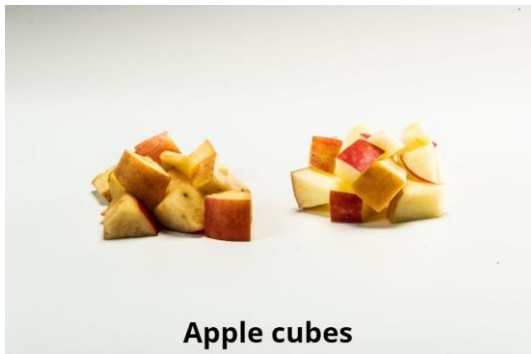
This newsletter is dedicated to the developments of the OptiFreeze Technology for Flowers.



How it all started...

OptiFreeze project - from fruits to flower cuttings

While intensively working on the development of the OptiFreeze technology for frozen products, there was a new application discovered. The technology applied to a plant tissue prior to cold storage (not freezing) resulted in remarkable shelf life extension.



First the technology was applied on cut fruits and vegetables, showing a significant improvement of their shelf life and quality after storage. The technology was then tested on ornamental flowers cuttings and showed great possibilities in extending their shelf life and improving quality.



Partnership OptiFreeze and Syngenta Flowers

From the beginning of the project Syngenta Flowers was assisting and supporting to reach the breakthrough results. A partnership agreement was signed and the OptiFreeze machine called OptiCept was transported to the farm in Kenya. Now the equipment is up and running!



The OptiFreeze-team brought a visit to the Syngenta Flowers production locations Kenya Pollen and Kenya Cuttings. OptiFreeze sold the first OptiCept line to Kenya Cuttings, where mainly Pelargonium and Poinsettia are being produced. [Read more in this article.](#)



OptiFreeze technology - a two step treatment

The technology is based on a liquid impregnation reaching a cellular level. Almost any type of solution can be introduced into a plant tissue and cells. As a start, the solution has to be defined – its composition depends on the effect that is desired; for example: to extend the shelf life – solution might contain carbohydrates, to improve rooting – solution might contain rooting hormone etc.

It is a two step treatment; first, plant tissue is subjected to VI (vacuum impregnation), where pressure changes cause the removal of the air fraction from the tissue and its replacement with a desired solution. Second, short electrical pulses (PEF) are applied leading to the creation of reversible pores in the cell membranes (electroporation). The solution that is already in the tissue (in the extracellular spaces) can now enter the cells. After applying both steps, the solution of choice is uniformly distributed in the tissue and inside of the cells.



What happens now...

OptiFreeze and Syngenta Flowers are running trials at Kenya Cuttings, one of Syngenta's flower production locations, and are getting ready for the technology to

be fully commercialized. Recently the best drying method was figured out. This is an important milestone to preserve the quality of the cuttings and avoiding fungal diseases. The team will now continue testing on shelf life improvement and on testing more crops. In the upcoming newsletters you will be able to learn more about the developments of OptiFreeze for Flowers.



Our mailing address is:

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This newsletter is dedicated to the collaboration between Syngenta Flowers and OptiFreeze and focuses on Flower cuttings.

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