

Technology Offer

CSIC/AP/007

## New product to reduce physiological disorders in fruits



**New formulation of foliar calcium treatments especially for late season varieties of deciduous fruit species. By specific procedures of preparation and protocols of application, remarkable results are achieved in the mitigation of calcium related physiological alterations.**

### Intellectual Property

Know How Registered

### Stage of development

Technology in final phase for industrial scaling, TRL 6

### Intended Collaboration

Licensing and/or co-development

### Contact

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### Market need

Physiological alterations related to calcium in fruit are the main abiotic causes of the appearance of spots and other deteriorated areas that occur mainly during fruit storage. These physiopathies develop during the post-harvest phase, so the commercial value of the fruits is considerably devalued.

Calcium can only penetrate the fruit cuticle as an ion in an aqueous solution, so that foliar formulations must contain adjuvants that allow adhesion to the surface of the fruit and, at the same time, keep the calcium in solution as long as possible.



### CSIC solution

New calcium formulation contains coadjuvants based on food additives that allows the formation of a polymer with special characteristics of sticking, gelling, rehydration and reconstitution properties when the environmental humidity rises, and highly persistent on the fruit surface allowing the absorption of calcium even weeks after spraying the treatment.

The strategy of treatment designed concentrates its effectiveness around the time of maximum absorption of calcium by the fruit. This technology reduces inputs to the crop, production costs and diminishes calcium disorders, especially in late season cultivars of deciduous fruit species.

### Competitive advantages

- Ensures the entry of calcium into the fruit.
- Few repetitions of treatment is needed
- Improves fruit quality and self-life.
- Reduces calcium related physiological alterations, such as bitter pit (apples), vitrescent dark spot (peaches), *blossom end rot* (tomatoes)
- Proven efficiency in apple, peach, quince, cherry and tomato.