

# Master Thesis

## Dynamic Pricing for citrus fruits

### Aim/Content of the thesis

The Mediterranean area is home to a lot of citrus orchards because of its warm climate. Citrus fruits are not only used as fruits, but as animal food or for extracting fruit acid, too. These fruits are often diseased by bacteria or fungi before being picked. After harvesting them, they are sensitive to temperature, so the transport and storage of these fruits are very difficult. Like all other fruits, they are perishable. Hence, it is possible to apply methods from revenue management, especially dynamic pricing.

The aim of this thesis is an extensive overview over dynamic pricing methods in agriculture, especially for citrus fruits and its side products. It should include recent approaches from practice as well as relevant literature. If there is not enough literature concerning citrus fruits, we will extend the literature review to groceries in general and its applicability to the citrus industry. Moreover, we expect you to implement at least one method.

This master thesis originates from a third-party project called „ImPUISe - Innovation in the supply chain of citrus fruits and its side products in the Mediterranean area“. This project is funded by the EU/BMBF through DLR Projektträger (Domain: European and international co-operation).

### Requirements

- Student in business administration or similar study course with clear quantitative focus
- Ability to independently do a literature research by revising original resources with quantitative models
- Good knowledge in operations research/management science and statistics
- Basic programming and modelling skills (e. g. Matlab, C, or Python)
- English thesis very welcome

### Introductory Literature

Akçay, Y., et al. (2010): Joint dynamic pricing of multiple perishable products under consumer choice. *Management Science* 56(8), 1345–1361.

Adenso-Díaz, B., et al. (2017): Effects of dynamic pricing of perishable products on revenue and waste. *Applied Mathematical Modelling* 45, 148–164.

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