

# Optimum storage conditions for 'Abate Fetel' pears

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***ARC • LNR***

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# Introduction and Objectives



- Currently can store Abate Fetel (AF) at 1.5% O<sub>2</sub> and 0.5% CO<sub>2</sub> for 4 months
- AF susceptible to soft scald when stored at low oxygen
- AF susceptible to superficial scald

## Objective:

- To evaluate the effect of different storage regimes on the quality of 'Abate Fetel' pears in order to extend the storage life to possibly 6 months





# Materials and Methods



- Season: 2019
- Production area: Grabouw and Ceres
- Maturity: Optimum and post-optimum
- Treatments
  - 1.5% O<sub>2</sub> + 0.5% CO<sub>2</sub> at -0.5°C (**CA1.5**)
  - 1-MCP + 1.5% O<sub>2</sub> + 0.5% CO<sub>2</sub> at -0.5°C (**SF+CA1.5: -0.5°C**)
  - 1-MCP + 1.5% O<sub>2</sub> + 0.5% CO<sub>2</sub> at 1°C (**SF+CA1.5: 1°C**)
  - DCA-CF (0.7% O<sub>2</sub>) (**DCA**)
  - DCA-CF + 1-MCP (1-MCP applied pre-shipment) (**DCA+SF**)
  - 1-MCP + RA at -0.5°C (**SF+RA: -0.5°C**)
  - 1-MCP + RA at 1°C (**SF+RA: 1°C**)
- Fruit quality evaluation after 4 and 6 months (+ 6wk RA + 7 day at 20°C)



# Materials and Methods

## Fruit quality parameters:

- Total soluble solids (TSS)
- Titratable acidity (TA)
- **Firmness (kg)**
- **Skin colour (scale 1-5)**

## Physiological disorders:

- **Superficial scald (%)**
- **Soft scald (%)**
- All other internal and external disorders

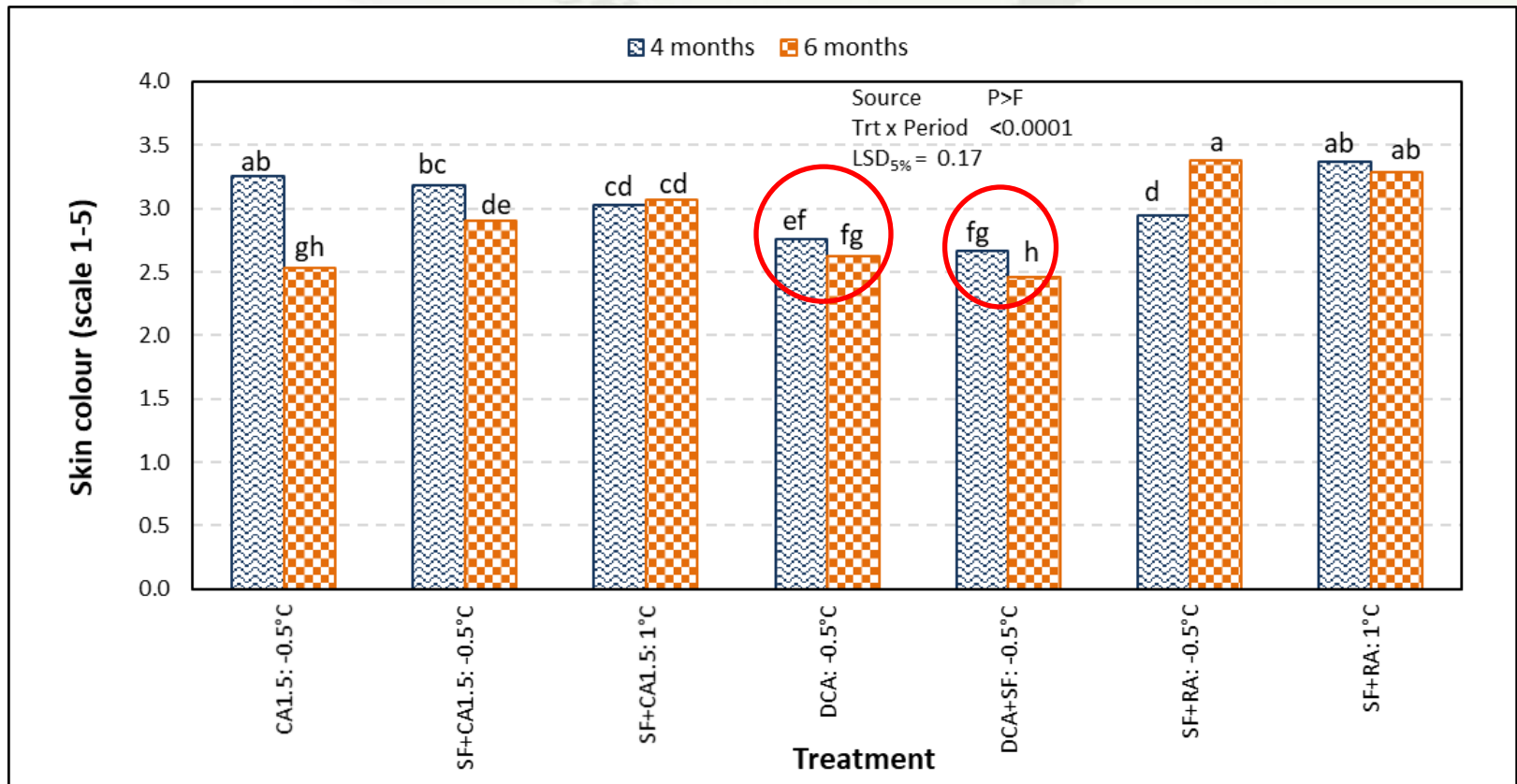
## Sensory evaluation:

- Appearance (1-10)
- Taste (1-10)
- Texture (1-10)
- Off-taste (1-10)

# Results and Discussion

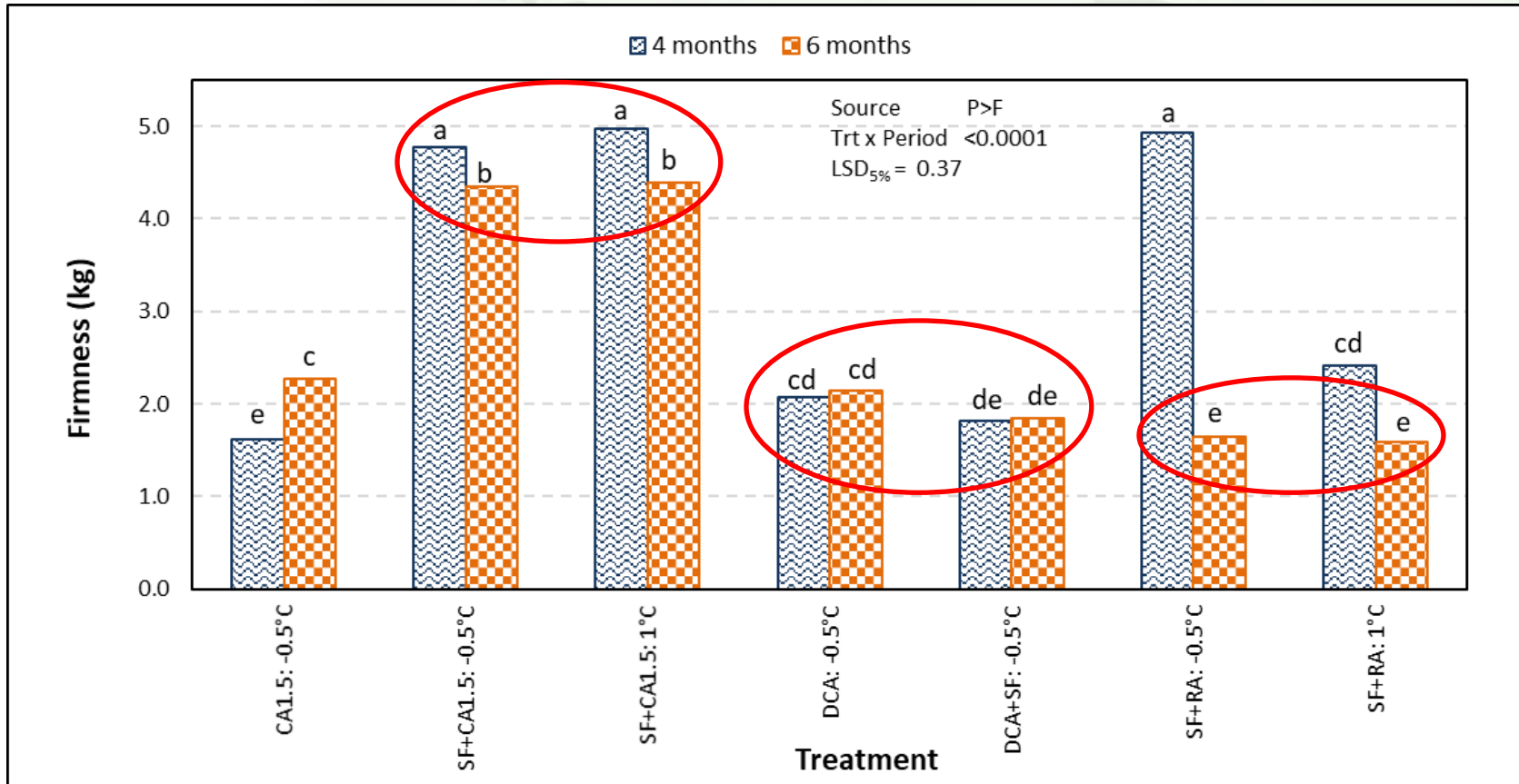


Optimum Abate Fétel from **Grabouw** production area after 7 day shelf-life



# Results and Discussion

Optimum Abate Fétel from Grabouw production area after 7 day shelf-life

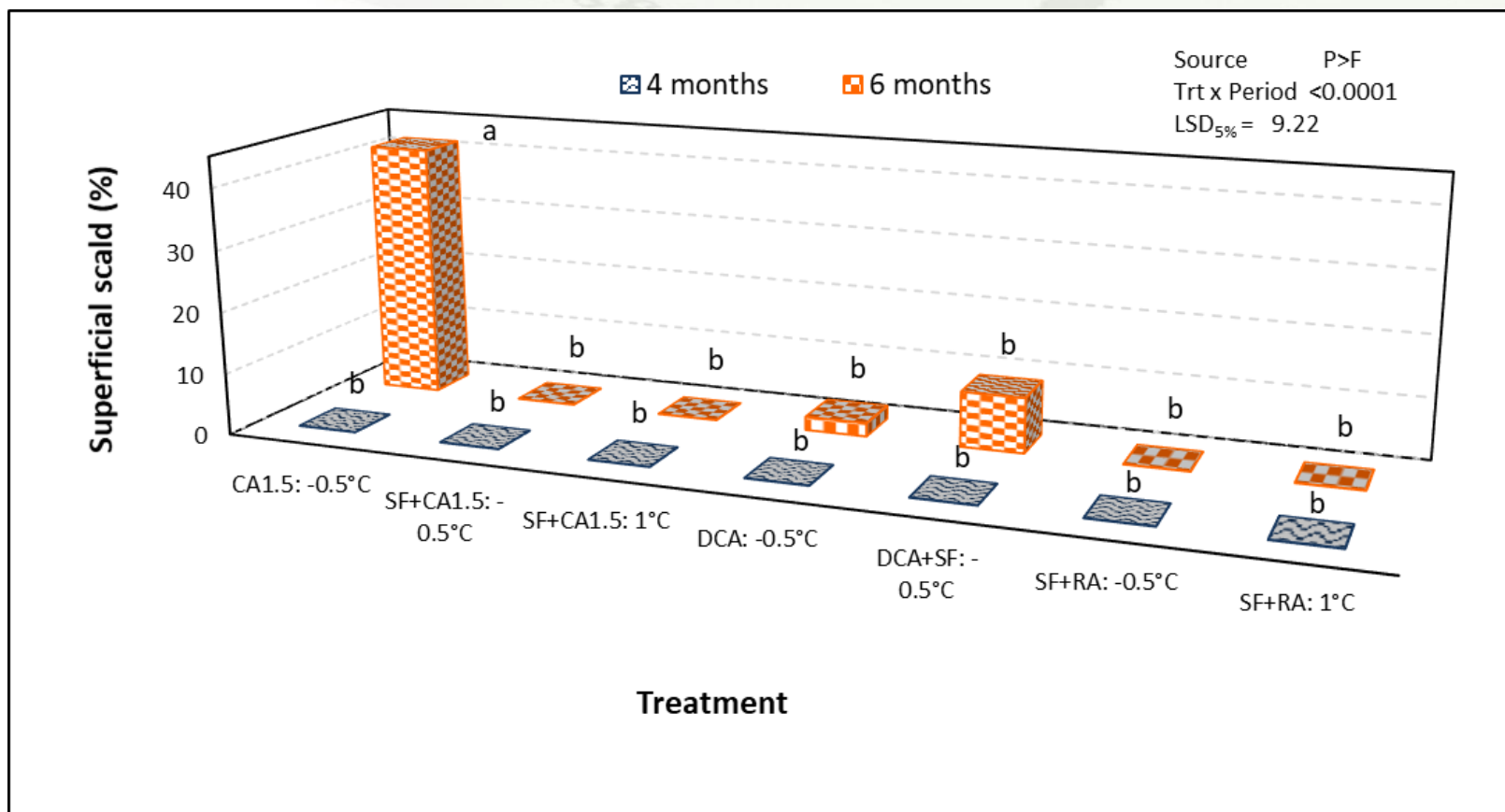




# Results and Discussion

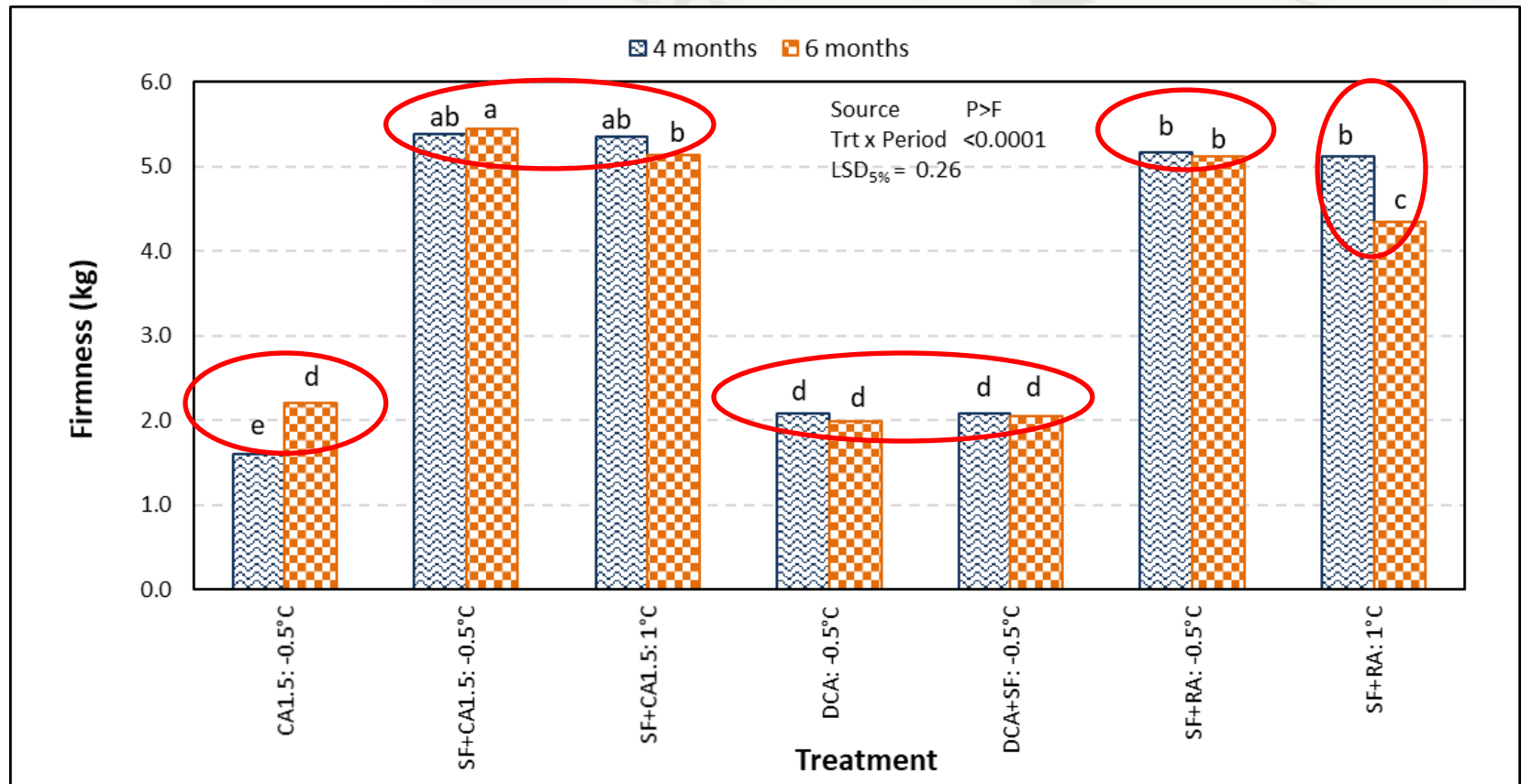


Post-optimum Abate Fetel from Grabouw production area after 7 day shelf-life



# Results and Discussion

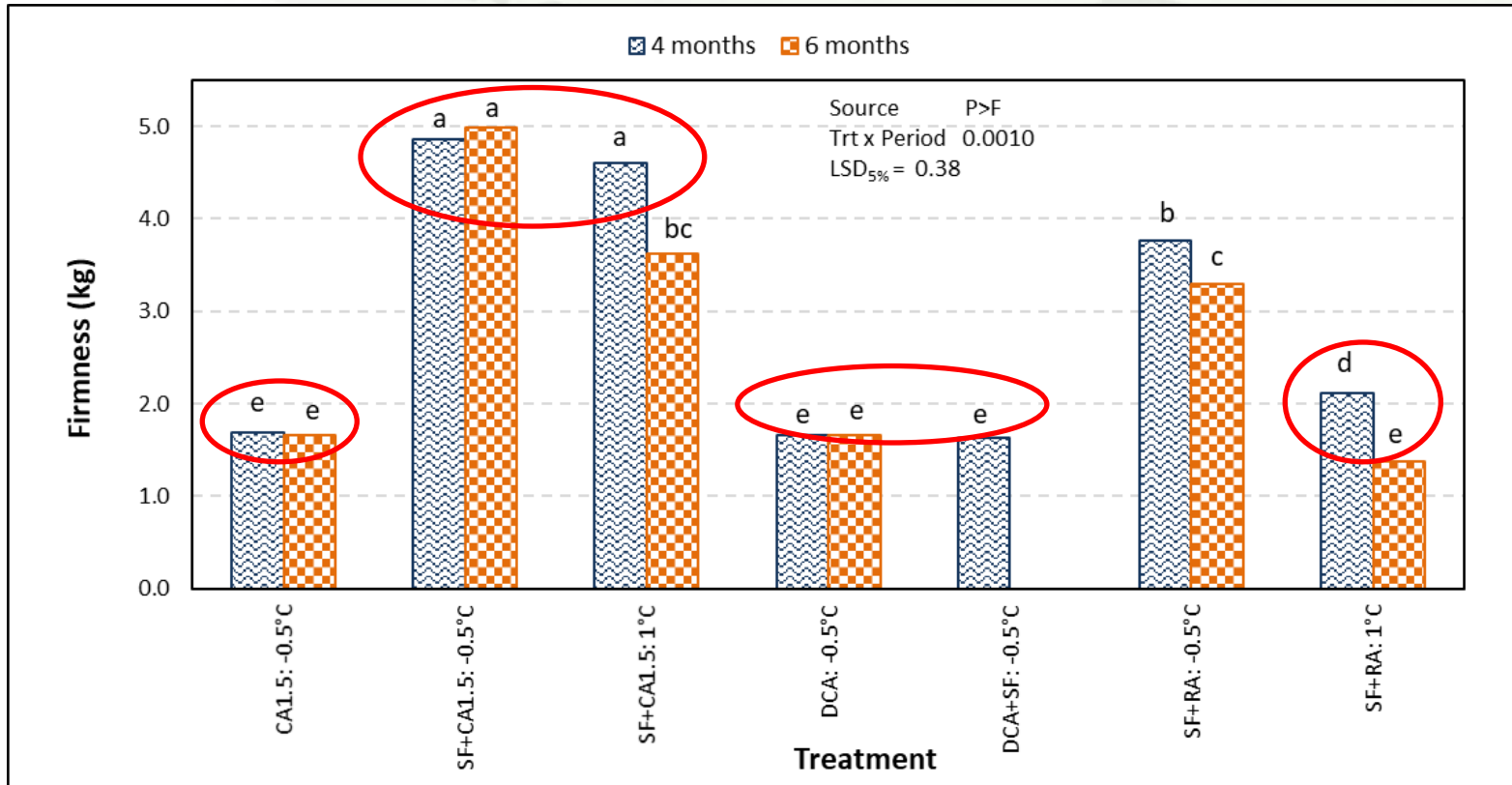
Post-optimum Abate Fetel from **Grabouw** production area after 7 day shelf-life





# Results and Discussion

Optimum Abate Fétel from Ceres production area after 7 day shelf-life

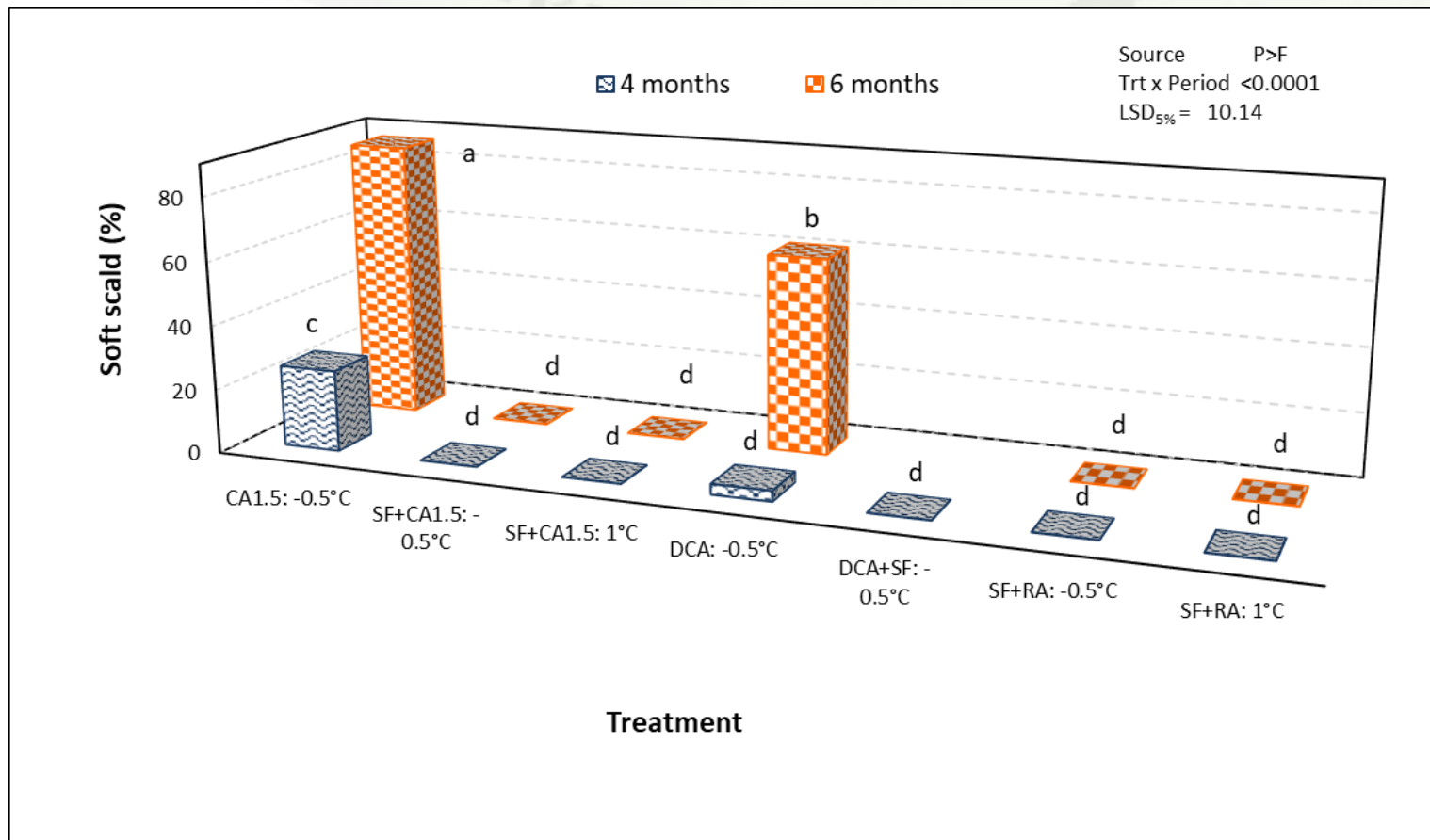




# Results and Discussion

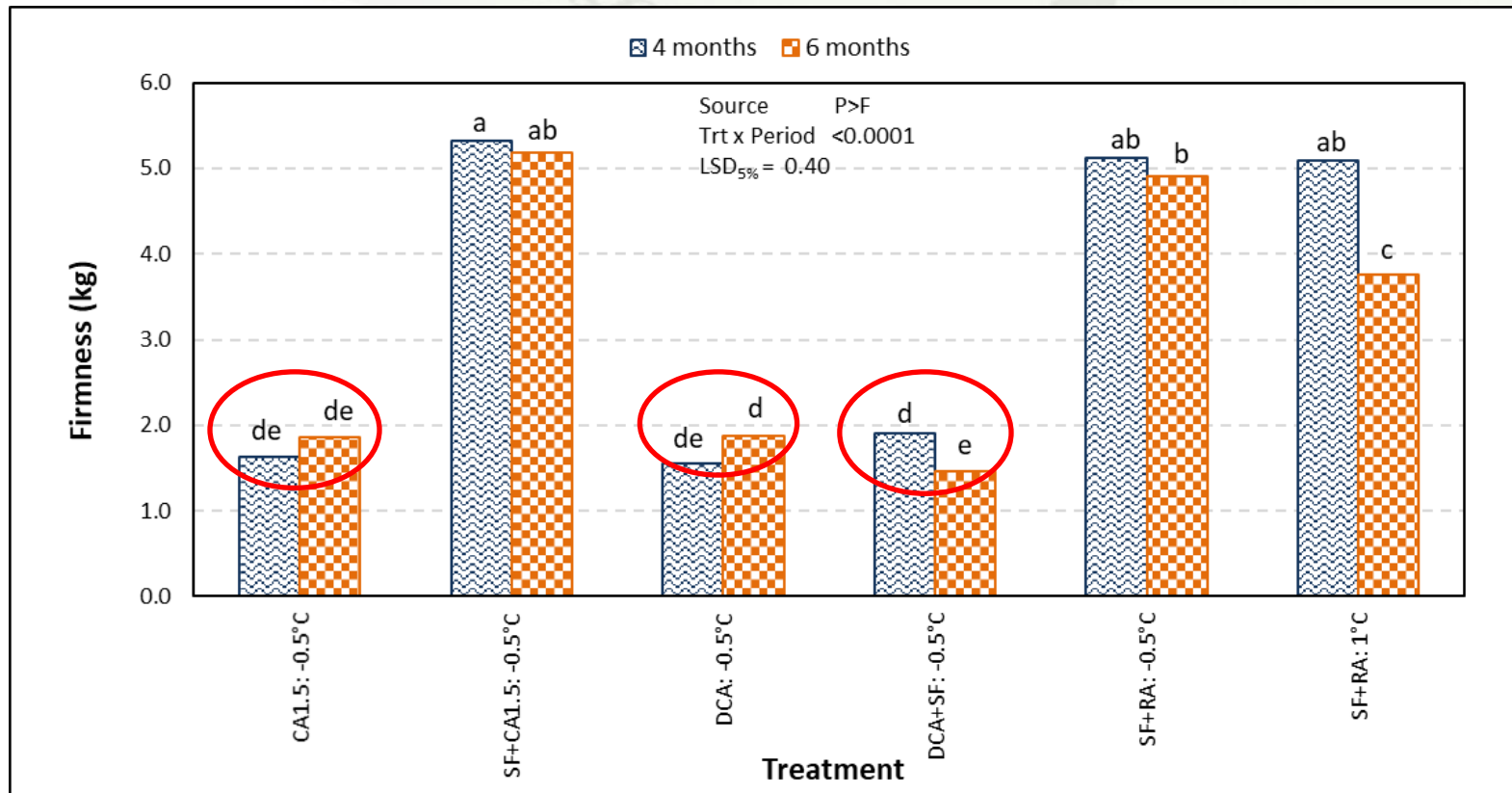


## Optimum Abate Fetel from Ceres production area after 7 day shelf-life



# Results and Discussion

Post-optimum Abate Felcel from Ceres production area after 7 day shelf-life

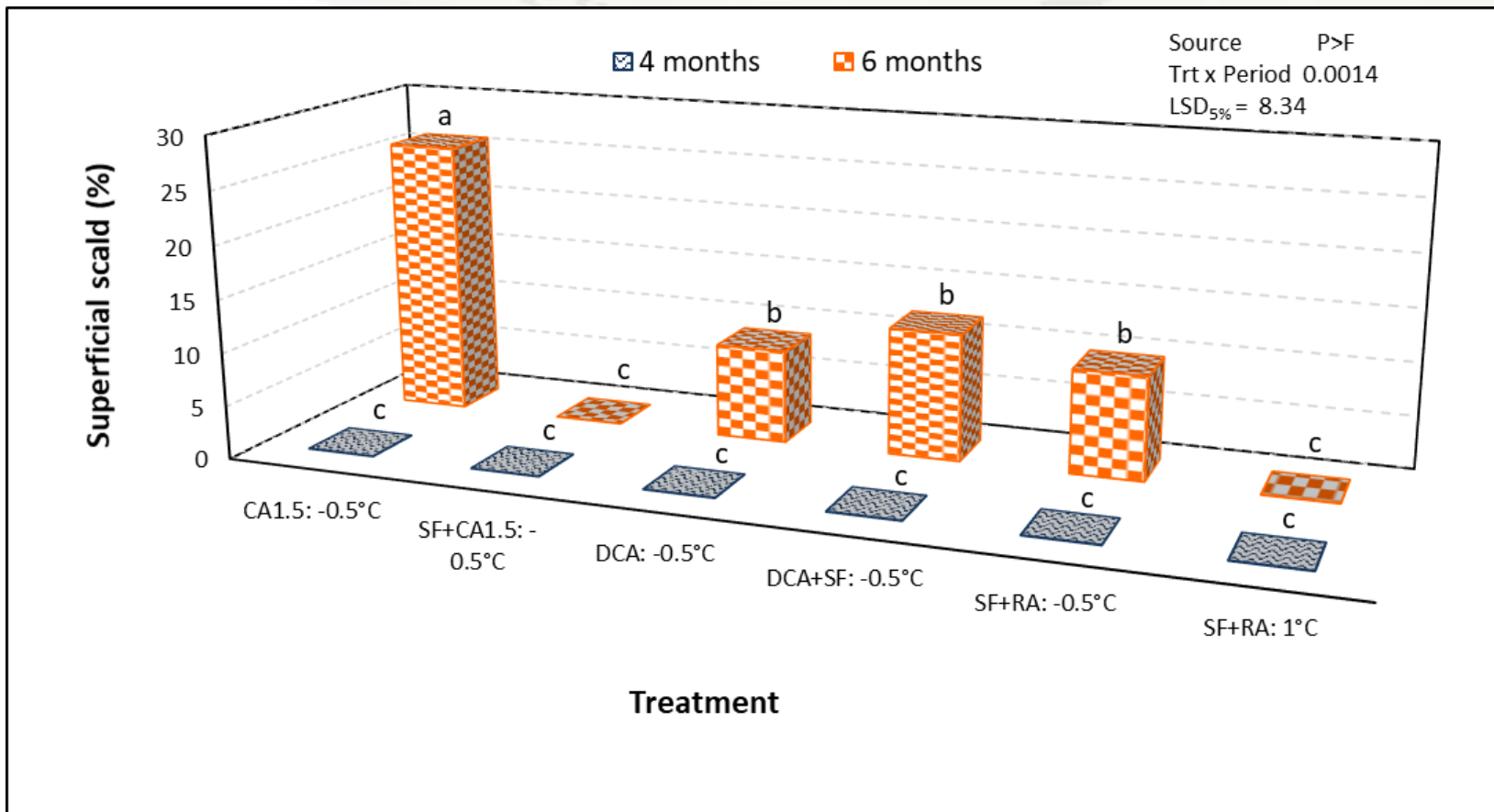




# Results and Discussion

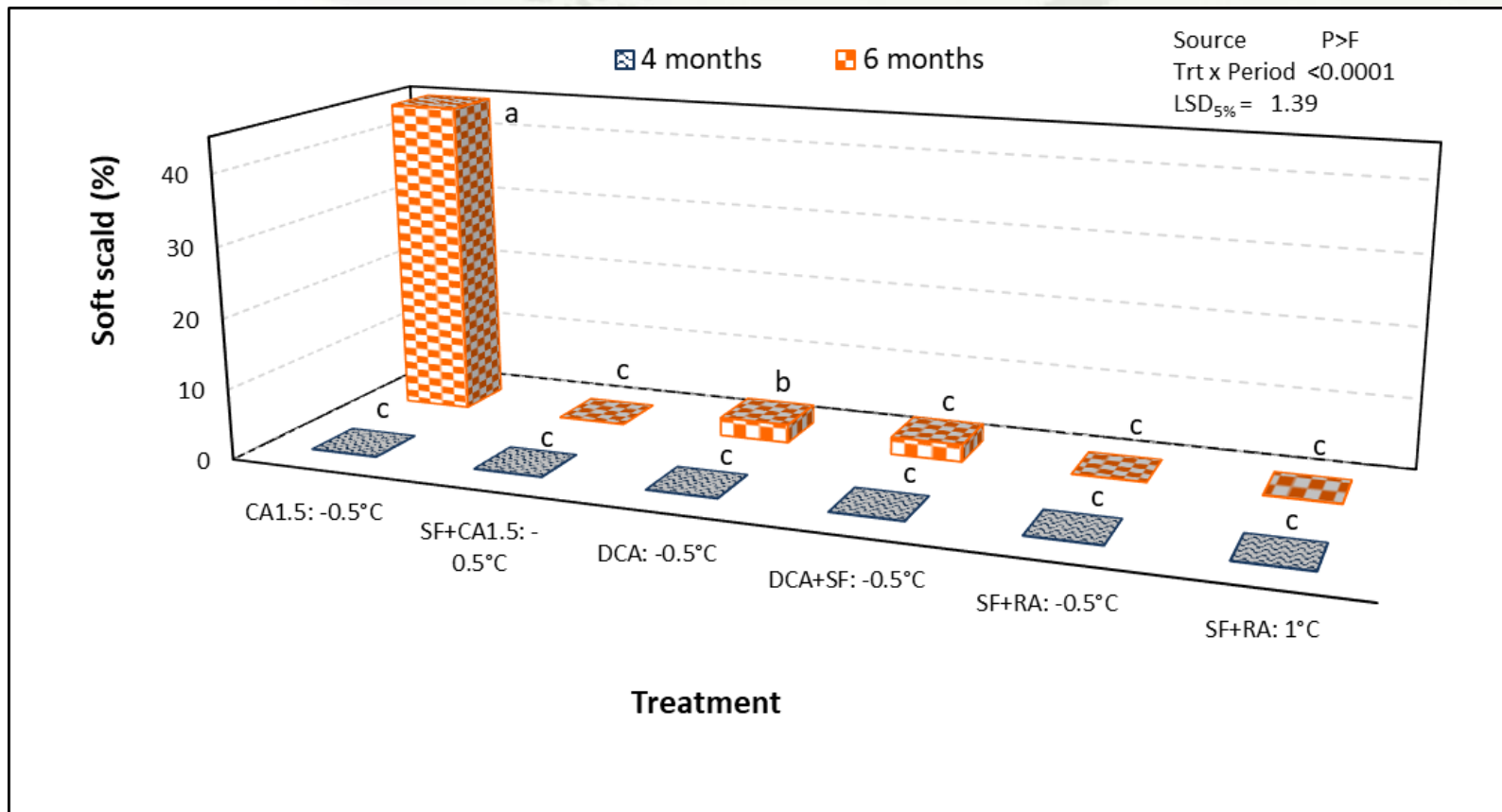


Post-optimum Abate Felcel from Ceres production area after 7 day shelf-life



# Results and Discussion

Post-optimum Abate Felcel from Ceres production area after 7 day shelf-life



# Conclusions

- 1-MCP + CA/RA
  - no physiological disorders after 6 months (except for post-opt fruit from Ceres)
  - CA stored fruit not ready-to-eat
  - Optimum RA fruit – ready-to-eat (except for post-opt fruit from Ceres)
- DCA and DCA+1-MCP
  - Only effective in one area and one maturity
- Store optimum fruit for 4 or 6 months
  - 1-MCP+RA – most cost effective option



1-MCP+RA;  $-0.5^{\circ}\text{C}$



1-MCP+RA;  $1^{\circ}\text{C}$

# Acknowledgements

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