Mango quality and internal defects

In GreenCHAINge an innovative "smart chain" is being developed.
Overall goal is to improve the intrinsic quality of the product on the shelf.

Objective

Obtain uniform and RTE (Ready to Eat) mangos on the shelf.
Understand reasons for internal defects like pulp-browning.
Improve quality by controlling reasons for internal defects.

Results

Measuring the internal defects of > 3000 mangos transported from Brazil to the Netherlands, in 9 shipments between Nov '16 and Jan '17 shows that pulp-browning correlates with:

- Decreased firmness.
- Increased internal dark yellow color.
- Higher ripening temperature.

Additional experiments showed that pulp-browning correlates with increased storage time.
Making 1 cm^2 mango cubicles to mimic "cut mango pieces" shows that an increase in internal breakdown correlates with browning of the mango cubicles.

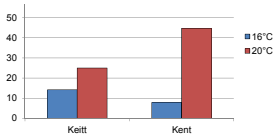
Conclusion

Internal pulp browning is most observed in ripe mangos.

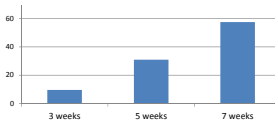
Relevant for industry

A better understanding of the factors that trigger internal defects / browning can help to improve the current logistics chain, minimizing practices that contribute to the problem.

"Nice to see that the common hypothesis "browning correlates with ripening" is verified"



Percentage of internal breakdown increases at higher ripening temperature, for both cultivars Keitt and Kent.



Percentage of internal breakdown increases upon longer storage (respectively 3 weeks, 5 weeks or 7 weeks at 16 °C).

For detailed information about this project result please visit www.wur.eu/greenchainge.

Information
Eelke Westra
T +31 (0)317 48 02 08
E eelke.westra@wur.nl
www.wur.eu/greenchainge