



**Obstbauversuchsanstalt Jork**  
**Dep. of fruit quality and fruit storage**  
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Landwirtschaftskammer  
Niedersachsen

# Storage of raspberries and blackberries



Bild: Google Earth

# Former results of storage experiments with raspberries and blackberries:

## Optimal storage conditions:

Temperature: -0,5 °C (fast removal of field heat)  
O<sub>2</sub>-concentration: > 5 %  
CO<sub>2</sub>-concentration: 18 – 20 %

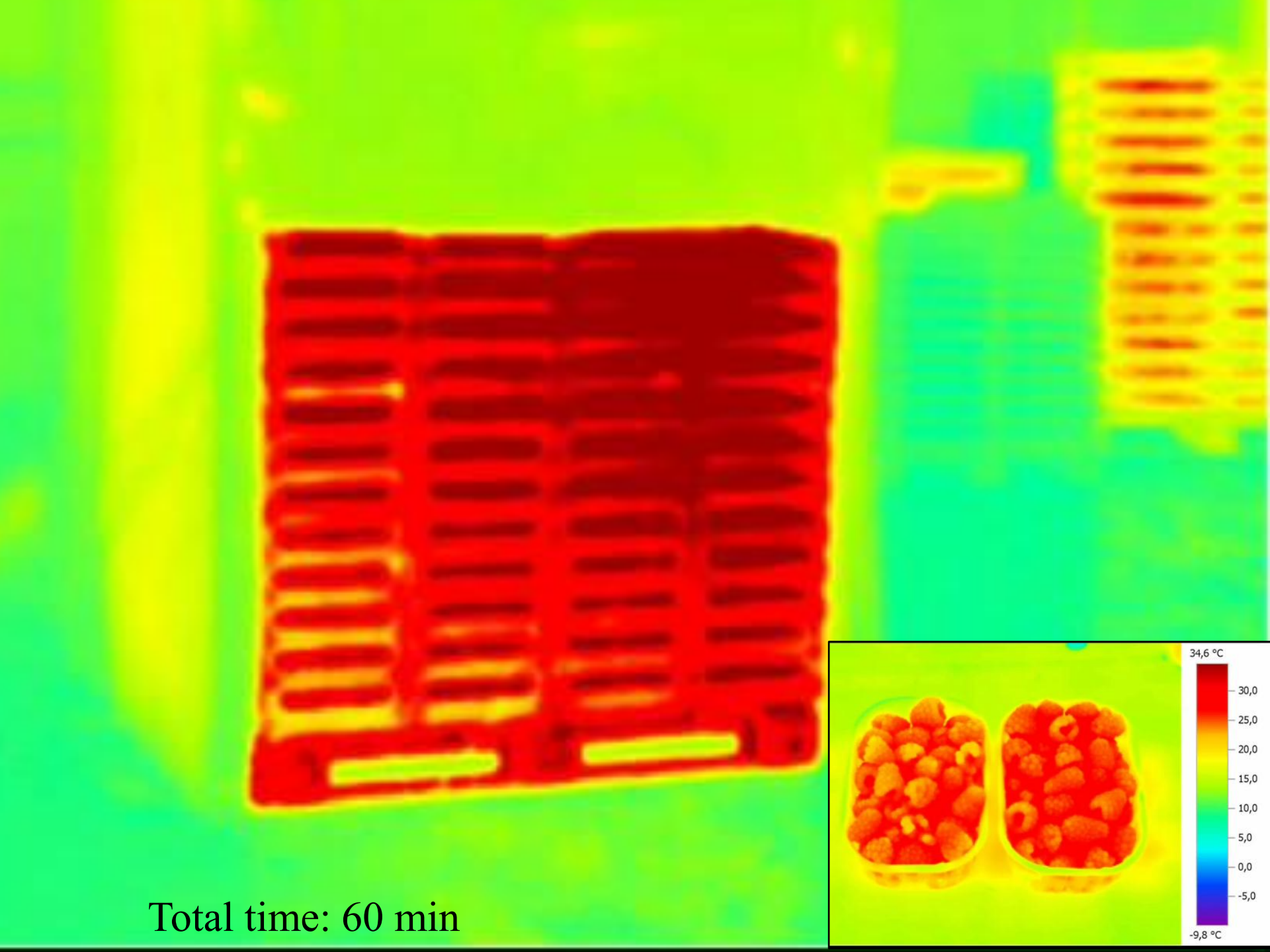
But:  
Fruit growers claim that the fruits look dull and mat after rapid cooling.  
In consequent, they don't use rapid cooling and store at 4 – 8 °C.



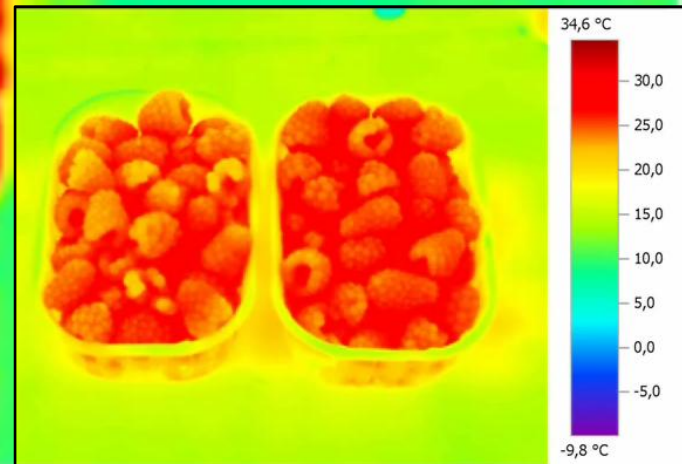


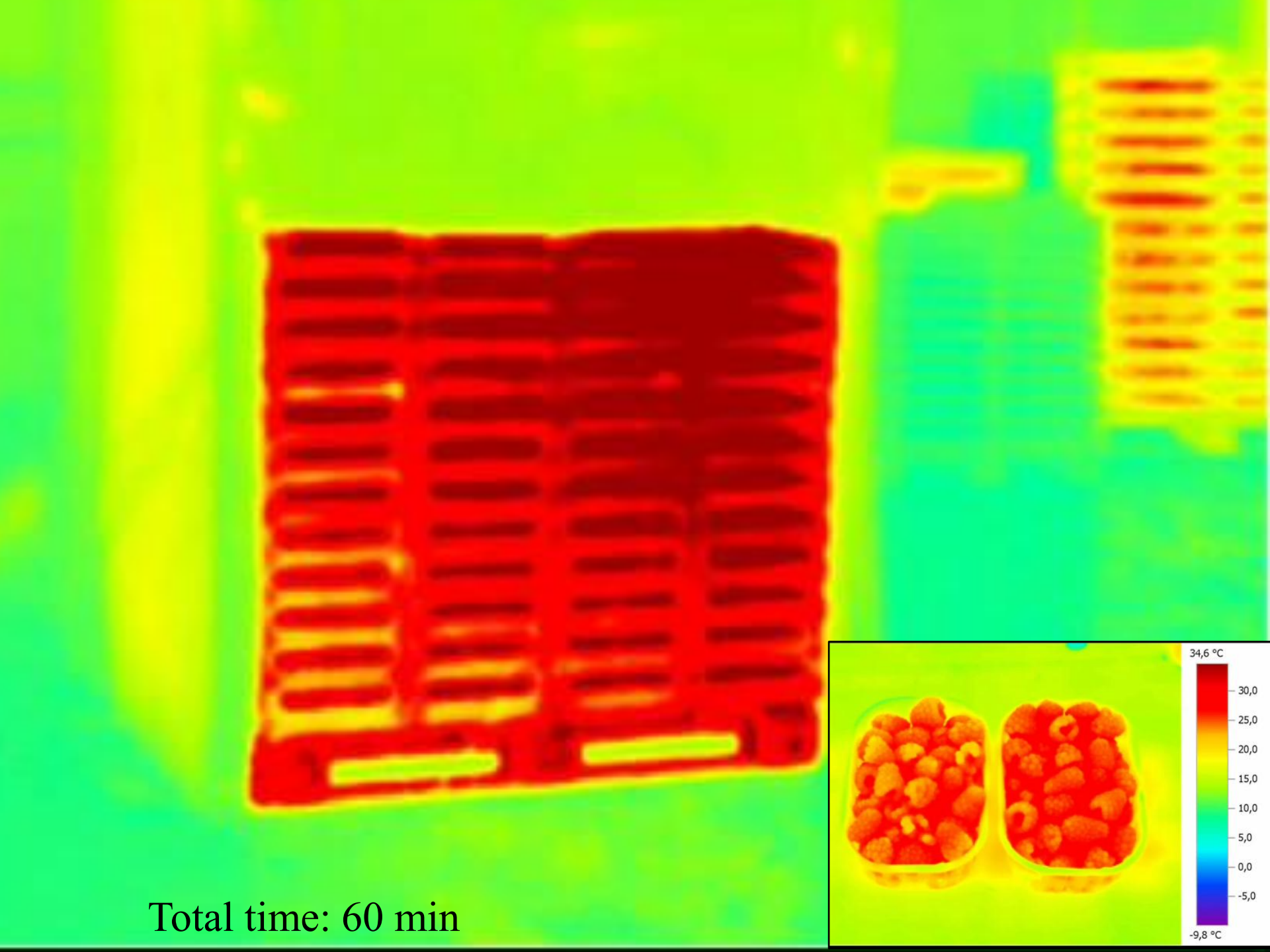




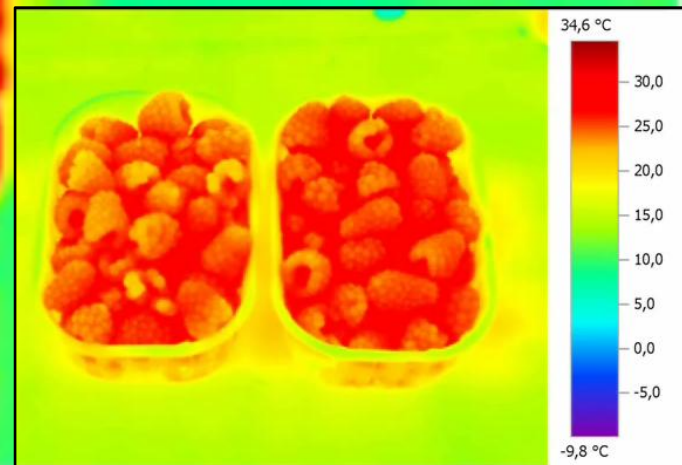


Total time: 60 min





Total time: 60 min





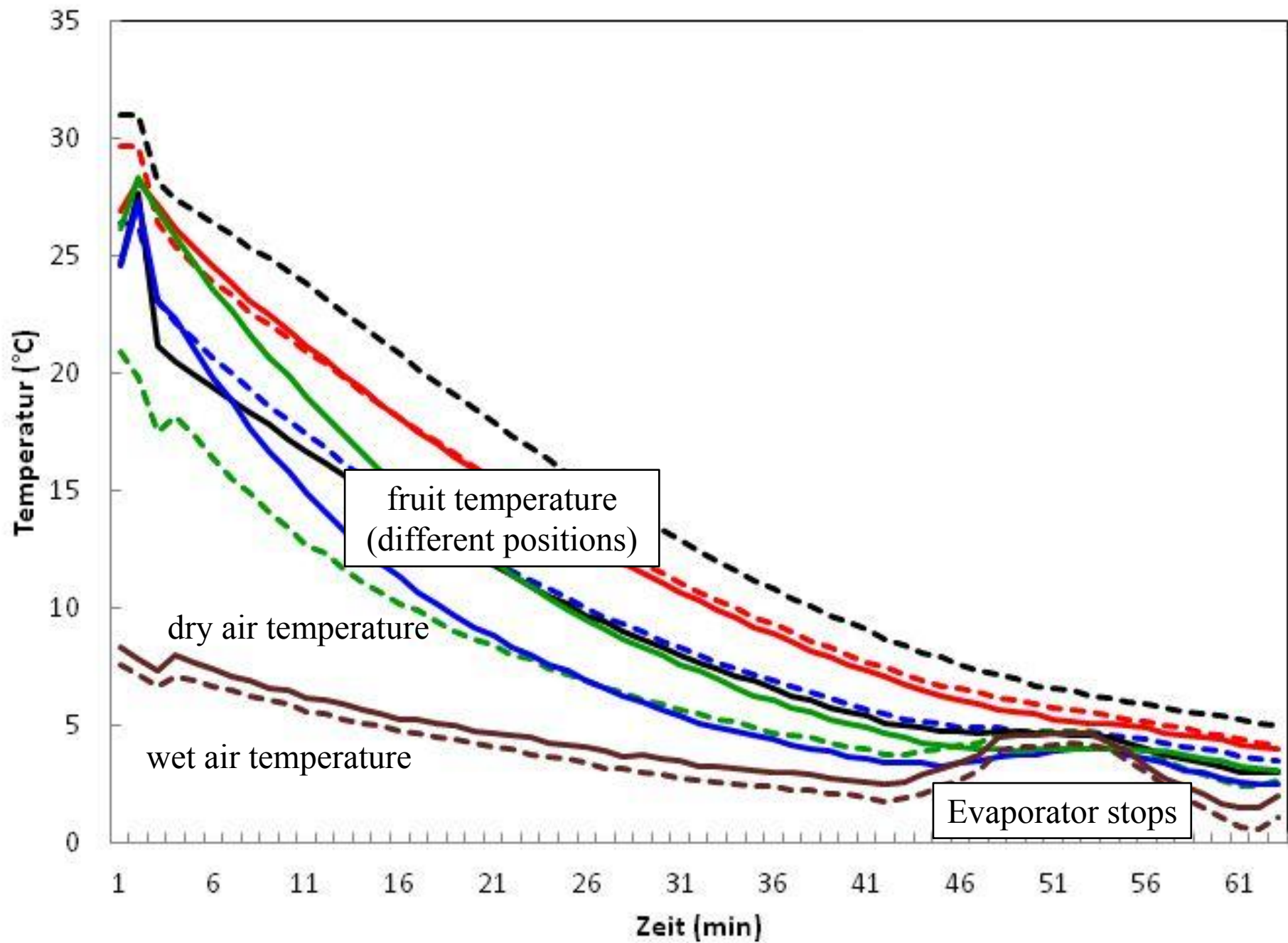


Raspberries with (A, B) and without (C, D) rapid cooling (pictures B and D were taken with flash)











# Results and conclusions

- ⇒ Rapid cooling is very effective to get rid of field heat (by convection and evaporation)
- ⇒ Low storage temperature is very important to maintain fruit quality
- ⇒ Fruit temperature could fall below dewpoint of surrounding air during or after the cooling process
- ⇒ Water condensate is sterile and disappear quickly when the fruit temperature exceeds air dewpoint
  - ⇒ Only an aesthetic problem
  - ⇒ Foil packaging reduce the problem
- ⇒ **An unbroken cold chain prevents condensation and maintains fruit quality**





# Thanks for your attention!



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