

Paper Number: ICR0243

Title of Paper: Modeling Product Quality Changes as a Result of Temperature Variability in Shipping Systems

Presenter: D. J. Tanner, Food Science Australia, Australia; N. D. Amos, ZESPRI Innovation Company Limited, New Zealand

Session: D2-4

Person Contributing Discussion or Question: Nicolai, Bart M., Catholic Univ. Leuven?, Belgium

Comment or Question: Which kind of container design improvements are you considering?

Presenter's Reply: There are a number that we are discussing with commercial companies, which prevents disclosure at this time.

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Person Contributing Discussion or Question: R.D. Heap, Cambridge Ref'n Tech., 140 Newmarket Rd., Cambridge CB25DP, UK

Comment or Question: You have correctly identified the problems of packaging ventilation and precooling. I am disappointed to find that fruit is loaded warm, as it has been known for 20 years plus that transport equipment is not designed to cool, but to hold temperature.

Presenter's Reply: You are quite correct, however commercial constraints early in a fruit season with respect to rigid shipping schedules and market demand sometimes necessitate movement of product before field-heat removal is completed. There are also instances in other industries worldwide where best practice is not followed. Whilst this is not desirable, it is still important to consider such consequences so as to provide case studies for education.

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Person Contributing Discussion or Question: Richard Lawton, Cambridge Refrigeration Technology, 140 Newmarket Rd. Cambridge, CRT (Cambridge Refrigeration Technology)

Comment or Question: Have you considered using a splitter board to control door end temperatures of fruit?

Presenter's Reply: Yes, as well as a number of alternative measures to improve airflow distribution throughout containers.

Paper Number: ICR0334

Title of Paper: Cold Chain Management of Perishable Distribution in Northern Communities of Canada

Presenter: J-P. Emond, F. Mercier, E. Laurin and M. C. N. Nunes; Laval University-FSAA, Canada

Session: D2-4

Person Contributing Discussion or Question: S. Estrada-Flors, Food Science Australia

Comment or Question: (1) I think that your priority will be training in order to implement any other improvements. (2) You mentioned that low temperature was the main issue in this cold chain. However, the truck transport showed 13.5EC, which is high. Can you comment?

Presenter's Reply: (1) Yes, as a matter fact, training is crucial in order to improve conditions in Northern Regions of Canada. (2) Well, we can also take advantage of the inequal (tE) distribution for chilling sensitive produce by setting the produce in the warmer places in the truck and the lower temperature requirement produce in the colder area.

Paper Number: ICR0472

Title of Paper: Ventilation Effects and Requirements in Containerised Refrigerated Transport

Presenter: R. Heap and R. Marshall, Cambridge Refrigeration Technology, United Kingdom

Session: D2-4

Person Contributing Discussion or Question: Smale, N.J., Australia, P.O. Box 52, North Ryde, NSW 1670, Australia

Comment or Question: In regards to the calculation of required rates of fresh air exchange to maintain ethylene concentrations, below harmful levels, could you comment on the availability and reliability of sensitivity and production rate data?

Presenter's Reply: Production rates are readily derived from metabolic rates. Product sensitivity to ethylene is less simple – good data are available for some produce, e.g. kiwi fruit, but are not readily available for all types of produce.

Paper Number: ICR0472

Title of Paper: Ventilation Effects and Requirements in Containerised Refrigerated Transport

Presenter: R. Heap and R. Marshall, Cambridge Refrigeration Technology, United Kingdom

Session: D2-4

Person Contributing Discussion or Question: Eric Granryd, Royal Institute of Technology, 10044 Stockholm, Sweden

Comment or Question: Thank you for a very clear presentation! Could you please elaborate briefly about the 'results' exemplified in the paper (§ 5, pg 4)

(1) At which temperature are the data for metabolic heat appearing?

(2) The ventilation rates given apply for a certain mass of product. Can you indicate which mass?

Presenter's Reply: (1) For simplicity, values at 10EC are used. (2) The rates are per container load, a volume of about 66 cubic metres.