

How the Cold Chain Can Help Reduce Food Loss and Greenhouse Gas Emissions

The cold chain can help increase the quality, reach and profitability of kinnow by enabling sales out of season and in distant markets.

INDIA

WORLD'S 2nd LARGEST PRODUCER of fruits & vegetables



KINNOW

Citrus fruit rich in micronutrients, common in the Punjab region of India and Pakistan



SEASONAL:
Kinnow is available only **3-4 months** a year



4-5°C

HIGHLY PERISHABLE:
Best kept at **4-5°C** and relative humidity of **85-90%**



Increasing yield and acreage - production is too large for local market

The study measured the effects of cold storage and refrigerated transport from Abohar, in northern India, to Bangalore, in southern India, a roughly **2500km** overland journey that is a **4-5 day drive** by truck.

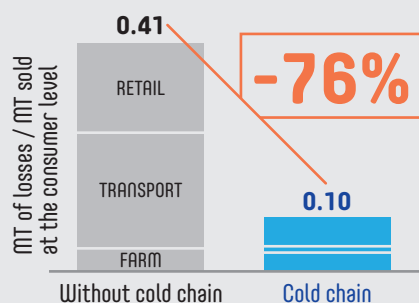
WITHOUT COLD CHAIN



WITH COLD CHAIN



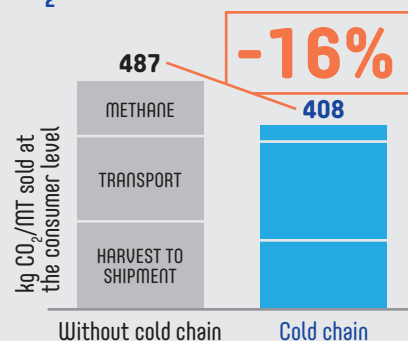
FOOD LOSS REDUCTION



RESULTS

Investment in the cold chain – specifically pre-cooling and transport refrigeration equipment – can reduce food loss **by 76%** and CO₂e emissions **by 16%**

CO₂e EMISSION REDUCTION



PAYBACK



Pre-cooling equipment:
2 YEARS



Refrigerated trucks:
(just over)
4 YEARS

REACH

Increase in geographical reach of the supply chain with cold chain investment



Bangalore, Russia, Dubai and Bangladesh

PROFITABILITY

Transporter profitability was

23%

from Abohar to Bangalore using the income from the outbound journey with kinnow



For more information about Carrier Transicold, go to Carrier.com or follow [@SmartColdChain](https://twitter.com/SmartColdChain) on Twitter