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University study highlights greater carbon footprint of container shipping

A study comparing the environmental impact of the two main methods of shipping fresh produce reveals that container ships produce 27 per cent higher emissions of greenhouse gasses than specialised reefer ships.

The research, carried out by the Agribusiness and Economics Research Unit (AERU) of Lincoln University in Christchurch, New Zealand, set out to assess more fully the shipping emissions generated in fresh produce supply chains – which has received less attention in previous studies.

Using the kiwifruit industry as an example, the study focused on shipping emissions and measured greenhouse gasses (GHGs) on outward and return journeys, while accounting for different shipping routes, ship utilisation, and the volume and weight of cargo.

When the emissions of port activities, refrigerant losses and transport of fruit from orchard to port are included, the 27 per cent greater GHGs produced by container shipping increases to 36 per cent higher than by specialised reefer shipping.

Walter Wildöer, chairman of the 360 Quality shipping association, said: “This report clearly demonstrates that shipping fruit in specialised reefer vessels creates a significantly smaller carbon footprint than shipping with container lines.

“A specialised reefer service picks up its perishable cargo and heads directly for its destination port, with limited port calls only scheduled en route to add further cargo. A container ship, meanwhile, makes far longer round trips, with frequent stops. It is the same difference as between a taxi, which picks up from origin A and drops at destination B; and a bus, which takes an indirect route and stops many times. However, as this report shows the carbon footprint of the taxi per unit is also demonstrably smaller than that of the bus.”

The Lincoln University report supports the theory that reefer shipping is more efficient in transporting perishable cargoes. A report on the shipping industry by independent shipping advisor Drewry shows that the international specialised reefer industry has a capacity of 304.5 million cubic feet and transported 43.55 per cent of perishables last year, while container shipping

took 56.45 per cent of perishables but has an overall refrigerated capacity of 1,997 million cubic feet.

“As shown by the Drewry report, the reefer industry is using its resources much more efficiently, taking 43.55 per cent of perishable cargo using 13.2 per cent of the shipping industry’s capacity, compared with the 56.45 per cent taken by container shipping lines, but with 86.8 per cent capacity,” says Wildöer.

“The findings of the Lincoln University report have implications for anyone involved in the fresh produce business wanting to ensure their environmental impact is as small as is possible. This includes exporters, importers and retailers - as well as end consumers, who are becoming increasingly hungry for information on the environmental impact of their purchases.”

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Notes for Editors

- Agribusiness and Economics Research Unit (AERU) of Lincoln University in Christchurch, New Zealand provides research for organisations. Its research focuses on agribusiness, resource, environment and social issues. Its clients include government departments in New Zealand and abroad, international agencies, NZ businesses and organisations, individuals and farmers.
- The study includes all emissions with a material contribution to carbon footprint; the lifecycle emissions of energy; transport emissions; and the operation of ports.
- The study excludes emissions up to the orchard gate (ie emissions involved in fruit production); emissions associated with capital goods; and human energy and emissions.
- The Drewry Shipping Consultants report quoted above is “*Reefer Shipping Market Annual Review and Forecast – 2010*”.
- The majority of fresh produce exported over water is transported by ship – not by air.
- Specialised reefer vessels carry fresh produce in specialised holds on the ship, notably fresh produce including bananas, kiwifruit, grapes, apples, pears, citrus and exotic fresh produce. Container ships carry a wide variety of cargo, including fresh produce in individually refrigerated units.

For more information, or to arrange an interview with a spokesperson, please contact:



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