Global Cooling
Precooling, Postharvest, & Ripening Systems
Preserving Freshness™
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Post Harvest Systems Preserving Freshness

7/8ths Cooling Basics

- For Precooling, we cool faster at the start, than we do at the end. This is because we have a larger "temperature differential (TD)", and heat transfer occurs at a faster rate.

- E.g., 80°*F* product, with 40°*F* air *(40°F TD)*, cools faster than does 40°*F* product, with 30°*F* air *(10°F TD)*.

- For this reason, to properly size the refrigeration equipment, we cannot simply take the cooling load in total, and divide by the number of hours to cool.

- We call it the rule of "7/8ths Cooling". In the first one-third, we do ½ of the total cooling; in the second one-third time, we do ¼ of the total cooling; and in the third one-third time, we do 1/8 of the total cooling. Add these together, and we have 7/8ths cooling. (in the fourth period, we would do 1/16th, in the fifth we would 1/32nd, etc., as we pass through the point of diminishing returns.

- Smart precooling operators target 7/8ths cooling, and finish with room cooling.