

Specialized Storage Services

The Port of Wilmington's unique cold storage warehouse facility – a 700,000 square foot complex equipped with the most advanced technologies to protect perishable and frozen cargoes – has helped position the Port as the nation's main gateway for imports of fresh fruit and juice concentrates.

These specialized and customized warehousing facilities continue to attract shippers and receivers of fresh fruit, juice concentrates and meat cargoes to the Port of Wilmington thus strengthening its market niche as a distribution hub for refrigerated and frozen cargoes.

The 700,000 square foot complex is divided into five warehouses with 34

separate storage rooms. The temperatures in the cold storage chambers are precisely controlled to meet storage requirements of the individual cargoes.

The Port's reefer boxes have chilled storage and deep freeze capabilities. By closely monitoring and maintaining optimum temperature, the Port is able to assist fruit importers in extending their product's shelf-life.

To further support Wilmington's fruit importers, the Port constructed two controlled atmosphere (CA) storage rooms in Warehouse E. Fruits ripen only in the presence of oxygen and warm temperatures and by releasing ethylene gas. These rooms are capable

of suspending the ripening process and the release of ethylene by lowering the temperatures, reducing oxygen levels to two percent, and adding nitrogen to the room's atmosphere.

The CA room's greatest advantage, according to Rob Johns, Director of Operations, The Oppenheimer Group, is the flexibility it gives his company in its marketing campaign.

"With CA treatment, we can extend the fruit's good eating characteristics for longer periods by literally putting it to sleep," Johns explained. "When the market is hot and fruit is in great demand, the CA rooms enable us to store it at the Port and market fruit later in the season."

Another important service provided within the Port's cold storage facility is *cold treatment* which is used to prevent the importation of harmful pests to the local environment. In recent years, the Port's warehouses were used to provide *cold treatment* for Australian navel oranges to eliminate imported fruit fly and larvae in accordance with the USDA protocol.

According to the USDA APHIS PPQ procedures, the *cold treatment* includes storage of fruit in quarantine conditions for a specific period of time at a designated temperature. There is a detailed protocol established





by the USDA to effectively accomplish the *cold treatment* process.

The need to protect the cold chain while also safeguarding the domestic agricultural industry led fumigation specialist, Royal Fumigation Inc., to develop a proprietary system – RapidCool™ – a process of re-cooling fruit after fumigation. By applying the RapidCool™ system, the cold chain is re-established in a matter of hours. The ripening process is slowed and the shelf life is lengthened.

Last winter, Royal used RapidCool™ successfully on lots of 220 pallets of fruit, from which it extracted 200,000 BTUs per hour in Warehouse F. During the 2002-03 season, the lot size per application by RapidCool™ is expected to increase to 500-750 pallets and, with additional cooling equipment, pushing extraction to almost 1 million BTUs per hour. With the RapidCool™ system, Royal hopes to see a drop in temperature of approximately 1°F per hour. Currently, Royal Fumigation is in

the final stages of establishing the commercial feasibility of RapidCool™.

The Port’s Engineering and Maintenance Department continuously works to repair, maintain and upgrade the warehouses. In the past two years, high-speed doors that open and close within two seconds have been installed. This \$200,000 upgrade is invaluable in maintaining temperature control, especially during the warmer weather.

Lighting fixtures have also been upgraded in the warehouses. They provide 10 times greater illumination while also conserving electricity. In the past few years, DSPC has invested \$150,000 in lighting improvements.

“DSPC continues to upgrade the refrigeration equipment in the warehouses as part of an on-going preventative maintenance program to increase reliability and longevity of the equipment,” said John Reece, Manager of Engineering and Maintenance, DSPC.

Sophisticated temperature monitors, designed by Mike Webster of Ictech, were also installed in the warehouses this year. This new equipment provides a real-time picture of the temperatures in each of the cold store rooms – updating information every five minutes and simultaneously storing all information for historic purposes. This data is web-based and accessible to DSPC engineers and its customers on request.

The Port of Wilmington’s value-added services in the handling of perishable cargoes and its commitment to improving and maintaining its cold store infrastructure has earned it a leadership position in this niche market. In combination with the Port’s advantageous location, excellent transportation access, highly experienced and productive labor, and sophisticated web-based inventory control systems, the Port of Wilmington is an excellent choice for discharging, storing and distributing imported chilled and frozen cargoes.