

# Delivery system saves steps



Pneumatic sample conveying system passes through roof over the lab and terminates in edible oil refining facility (background) approx 1050 ft away. Note that system draws air from outside building

**James R. Eilers**, Section Editor

**K**raft Food Ingredients, Jacksonville, IL, has found a method to optimize timely delivery of quality samples, while at the same time eliminating the need to divert personnel from production or laboratory duties to act as sample couriers.

Samples at their facility are conveyed pneumatically from production areas to the quality testing laboratory. This system not only allows samples to be transmitted rapidly, reaching the lab in 40 sec or less, but also allows them to be sent as collected, rather than to accumulate until a courier collects samples for delivery. In this manner, samples are transferred to the lab as they are prepared without having to wait for someone to make the trip to the lab.

Two pneumatic conveying lines are used at Kraft to transfer samples of products from their edible oils and salad dressing processing areas to the plant laboratory. Lines exit their respective buildings, pass outside, and travel across the roof to the main building housing the lab in which they terminate. The lines from salad dressing and oil operations are approximately 750 ft and 1050 ft, respectively.

Samples are transferred by placing them in a side-opening "carrier." This cylindrical device looks much like the cartridges used at some drive-up banking facilities. Carriers are inserted into 4" O.D. aluminum tube that connects plant floor with the lab. Air moving through the tubes propels

carriers at approximately 25 ft per sec, delivering them in 30 to 40 sec.

Air movement in each line is created by a blower that runs constantly during plant-operating hours. Generally, air moves in the direction that would transport carriers from lab to plant. When necessary to transport samples from plant to lab, an operator presses a button to actuate a valve and reverse air flow. Flow reversal is delayed sufficiently to allow arrival of a carrier if one is currently in transit. When flow has reversed, operator inserts the carrier and sends it to the lab. After a preset period of time, the valve automatically cycles, returning air flow to its normal direction.

Since the majority of the tube lines are installed outdoors, all transfer air is drawn from outside the buildings. If warm, moist air was drawn from inside the plant, liquid condensation would form in cool months. Freezing temperatures would cause ice to build up until the system would cease functioning. By drawing air from outside, transfer air is at the same ambient conditions as outside air. Because its humidity level and temperature match the environment through which lines pass, condensation does not form inside the tubes.

Complete information about Kelly Turbovac sample delivery system is available from Kelly Systems, Inc. 422 North Western Ave., Chicago, IL 60612-1491. **FP**