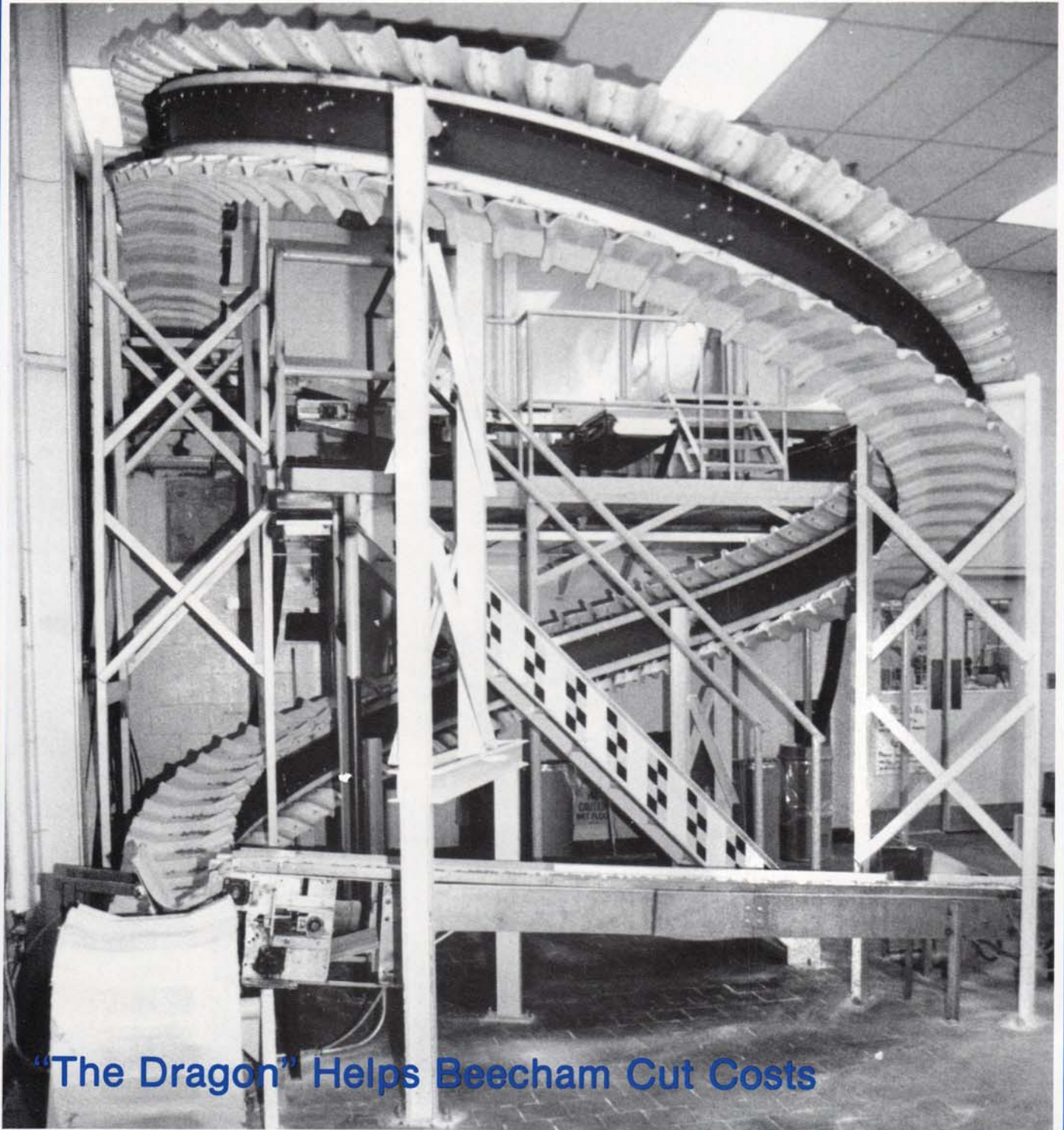


CONTINUOUS PATH CONVEYING

SPRING/1989



"The Dragon" Helps Beecham Cut Costs

HEAVY METAL REMOVAL - See Ad Pages 11/12

Product Losses Cut Sharply At Beecham Products Plant By Continuous Path Conveyor

The next time you pop a Sucrets lozenge into your mouth seeking relief from a sore throat, odds are great that a Continuous Path Conveyor by Serpentix Conveyor Corporation will have helped ease your pain.

Sucrets lozenges are manufactured by Beecham Products in Aiken, SC, where a spiralling, 35-foot long

Serpentix conveyor dubbed "The Dragon" helps process the millions of candied Sucrets produced there for worldwide consumption.

While the sweet, soothing medication in each Sucrets can provide many with a better night's rest, Beecham engineers spent some restless nights last year seeking ways to replace a troublesome materials

transfer system being used in Beecham's lozenge production center.

Their solution called for replacing the two conveyors and its transfer points in the system with a single, 35 foot long Continuous Path Conveyor. Installed in October, 1988 the new Serpentix system quickly and dramatically cut product losses and related

LOZENGES FROM THE COOLING CONVEYORS can be seen on the slider belt transfer conveyor in lower center of bottom

photo directly below the left side of the spiralling Serpentix. They are discharged from it onto the Serpentix which dis-

charges them onto a second transfer conveyor (upper right) 13' 6" from floor level.





SUCRETS LOZENGES BEGIN IN THE Beecham kitchen as a large mass of taffy-like candy. After kneading by the machine in right foreground of photo above, the candy is transferred to the machine in left of photo. Soft lozenges are made by it from the candy mass and are fed onto cooling mesh conveyors in the adjoining (cooling) room.

production costs in the manufacture of Beecham's line of sore throat lozenges.

The hard, brittle nature of Sucrets lozenges, coupled with being hydroscopic and produced in eight different colors, presented the company's engineering staff in Aiken with a host of problems.

The main one, according to Plant Engineer Walter S. Van Dine, existed in the cooling room where soft lozenges from the Beecham kitchen are transported on three separate cooling mesh belts.

LOZENGES FROM THE KITCHEN ARE fed onto the cooling belt mesh conveyor at right. They are discharged in turn from it onto the slider belt conveyor seen above in the second photo from left.

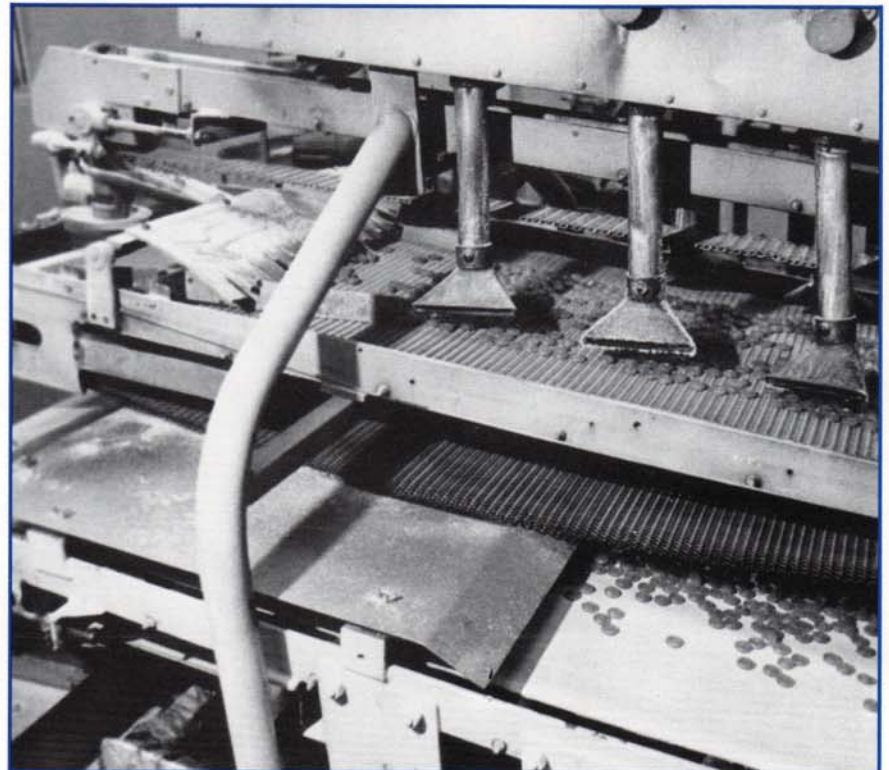


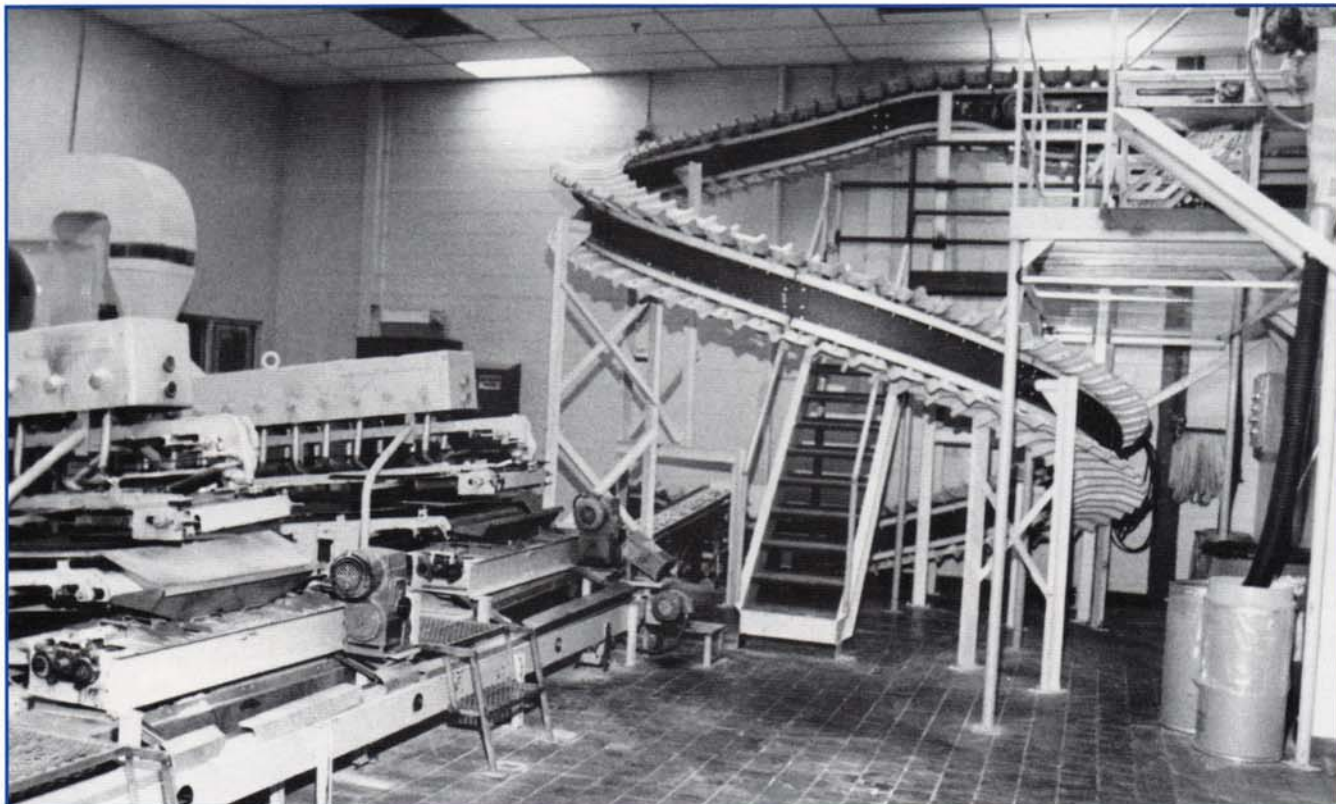
BEECHAM PLANT ENGINEER WALTER Van Dine checks lozenges at left as they are fed from the slider belt transfer conveyor onto the Serpentix Continuous Path Conveyor.

The cooled lozenges were discharged from the three mesh belts onto a powered slider belt transfer conveyor. It runs approximately 18 inches off the floor at a 90 degree angle to the mesh belts, accumulating production from them.

Discharged from it onto the previous materials transfer system, the lozenges were transported to an upper level then transferred to elevated storage bins in the Sucrets wrapping and packaging area adjacent to the cooling room.

Limited space in the corner of the room where the lozenges had to be received, and the need to elevate them 13' 6" to the upper level for transfer to the storage bins were major factors in the basic problem, Van Dine explained.





His proposed solution included a projection that cost of the Serpentix conveyor and its installation could be recouped in less than three years. The projection was lowered dramatically after the first few months of operation when product losses in the cooling room alone dropped sharply.

Van Dine estimated in his initial justification for the Continuous Path Conveyor that \$9,476 in annual savings could be anticipated from: reduction of product losses caused by lozenges falling from the previous conveyors; product chipping and breaking; lower maintenance costs; reduced cleaning costs in the cooling room; lower energy consumption; overall operating economies; and, increased productivity.

"In the first few months we realized that first year savings in just reduced product losses (**not counting chipping, breakage, maintenance, clean-up, etc.**) could amount to \$10,000," Van Dine said. "At this point we are exceeding our justification projections by a goodly amount."

The cooling room system replaced by the Serpentix conveyor had two cleated, straight-line flat belt conveyors. They were installed at a 90 degree angle, with each section in-

clined 45 degrees to provide lifts of approximately six feet.

The system required a transfer point from the accumulator belt to the first lift section, another from the first to the second lift section, and a third one from the second section to the slider belt transfer conveyor on the upper level. At each transfer point the hard, brittle lozenges were dropped approximately eight inches because of clearances required for cleat movement.

Each drop caused excessive chipping or breaking, Van Dine pointed out. As they fell the lozenges would strike the other lozenges. Or, they bounced over the belt cleats or sides of the conventional conveyors and fell on the floor. All lozenges falling on the floor must be scrapped. Those damaged can be recycled, but must first be manually culled from the feeder belts transporting them to the storage bins.

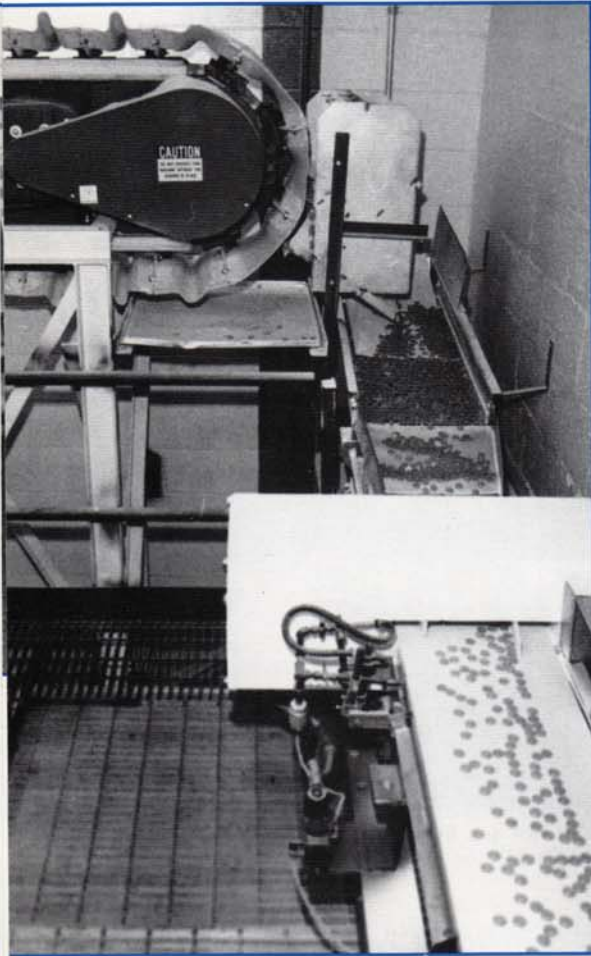
Beecham realized additional savings through company installation of the Serpentix conveyor. It was installed "over a long weekend," thanks to the simplicity of the system and easy to follow, detailed drawings from Serpentix Conveyor Corporation, Van Dine said. A local contractor

TWO OF THE THREE COOLING BELT mesh conveyors can be seen at left. The third one is out of the picture at left and the kitchen where the lozenges are formed is in the room behind the mesh conveyors. The wall at right separates the lozenge wrapping and packaging room from the cooling room.

provided assistance and a Serpentix representative was used in the final assembly stages, and for startup and training.

Simplicity of the Continuous Path Conveyor and the ease in cleaning it thoroughly and quickly were also critical considerations for Beecham, Van Dine added.

Since Beecham lozenges are produced in eight separate colors individual production runs per color are required. Because of this, complete cleaning and drying of the conveyor



system between each run is necessary to prevent cross contamination of the colors.

Unlike the conventional conveyors used in the old system, disassembly of the Serpentix is unnecessary for cleaning. It can just be hosed down with water then allowed to dry, Van Dine explained.

A completely dry belt is also critical for each run since the product conveyed is hygroscopic (dissolves in water). The Serpentix system is normally cleaned on Friday prior to a new production run on Monday, allowing for complete drying over the weekend. The drying process can be expedited simply by running the conveyor.

Van Dine said his recommendation to use a Serpentix conveyor at the Aiken facility was based on the following factors:

1. the convoluted rubber belt would gently cradle the fragile lozenges, and the convolutions (along with 20 degree angles on either side

SUCRETS DISCHARGED BY THE SERPENTIX conveyor are fed by the slider belt conveyor, in photo at right, to another slider that carries them into the wrapping and packaging room for discharge into overhead storage hoppers.

of the belt) would eliminate side loss of product, and prevent roll back on the inclines;

2. the belt attaches to the centered guide system of the conveyor and is pulled along its route, allowing the belt to extend out from the guide track. This eliminates the problem caused by the brittle lozenges working under the belts of slider conveyors and the conventional flat belt conveyors used in the previous materials transfer system. Under the belts the lozenges are crushed and cause heavy belt wear and severe cleaning problems. In most cases, the conveyor and its belt must be completely disassembled for proper cleaning.

3. a single Serpentix conveyor eliminates major transfer points and reduces the height of drops at each point.

4. cost payback on the Serpentix

conveyor could be realized within 2.83 years, based on product loss reductions, reduction of chipping and breaking of the lozenges, equipment operation and lower maintenance, overall plant cleanliness, and increased productivity.

The 140,000 square foot facility in Aiken is one of four plants operated in the United States by Beecham, according to Plant Manager Walter R. Uhle. It requires an employee force of 350.

Beecham is an international company involved in research, development, manufacture and marketing of a wide range of products. They include prescription and over-the-counter medicines, toiletries, cosmetics and health-oriented drinks. Manufactured in 29 countries, Beecham products are sold under some 300 different brand names in more than 130 countries. ■

THE BEECHAM PLANT IN AIKEN, SC, IN photo below, covers 140,000 square feet and employs 350 people. Manager of the facility is Walter R. Uhle.

