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# Accelerated Shelf-life Testing

***Accelerated testing will confirm the performance of a product from production to the consumer.***

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**A**CCELERATED SHELF-LIFE TESTING is an important part of the shelf-life testing done during any product-development cycle. Key data on the chemical and physical changes to a product are required in order to effectively develop and market it. Companies may use various methods, and different methods are used for different products.

Accelerated shelf-life testing (ASLT), in the usual context meaning a cheap, fast method of estimating the shelf life of a new product, is a bit of a will-o'-the-wisp. Developing a sound, scientific, accelerated test takes a great deal of time and resources and probably won't stand by itself as a wise expenditure. Developing some accelerated methods as part of the shelf-life testing during development of a new product can be justified much more easily.

Shelf-life testing (SLT) as a new product is developed encompasses a wide range of tests. I label the whole process accelerated shelf life data accumulation (ADA). This means accumulating data from the earliest samples through to the final product in the final packaging. All along, the goal is to have representative product under test that is far

enough ahead of production product that any "red flag" problems can be identified in time to take systematic corrective action. That is opposed to suddenly getting inundated with returned product and product complaints because the behavior of the product during storage and distribution was not adequately tested.

Here's an example. A compound-coating product was formulated. It wasn't a chocolate-flavored product; in fact, it had no chocolate components in it at all. A fairly typical sequence of flavor selection, development of the coating formula, mixing and refining tests, fat composition, including butterfat to control the texture and augment the flavor, usage tests and shelf-life tests at varying temperatures were conducted. Everything went well and the product was introduced. About a year later, after several production runs, a rash of consumer complaints started to flow in complaining about the flavor. After reviewing several product-retention samples, several samples collected during development and returned samples, it was obvious that some of the product in the field had a serious off-taste ➤



*Phil Cartier is a consultant with over 30 years experience in the food industry. He retired from the Hershey Company in 2002 after 22 years of confectionery product development.*