LEAST COST FORMULATIONS, LTD.

824 Timberlake Drive, Virginia Beach VA 23464-3239
Phone: (757) 467-0954   FAX: (757) 467-2947
e-mail: sales@lcfltd.com   URL: http://www.lcfltd.com

YOUR "SURVIVAL KIT" FOR THE 21st CENTURY

LEAST COST FORMULATOR^{tm}

This is an indispensable program for managing materials in process. It can formulate virtually any product, (sausage, ground beef, pickles)from a constantly changing array of raw materials (meat, poultry, salt, spices, water, casings, etc.) Because the Least Cost Formulator finds the least expensive mix of raw materials that will make a product that meet your standards, it is a proven way to increase profits while making a more consistent, quality product. It can formulate to nutritional, order of predominance and PFF regulations. This program is a must for developing new products, generating purchase plans, and scheduling day-to-day operations. The Least Cost Formulator can simultaneously optimize an entire product line, allocating scarce high-value trims to the right products for maximum savings. Fully integratable with powerful lot-based formulation and inventory management features.

Runs on standard IBM PC's and compatibles, and other computer systems.

QC DATABASE MANAGER^{tm}

An invaluable Analytical Information Management System for meat processors. Records, summarizes and analyzes literally thousands of lab test results for raw materials, work-in-progress and finished products. Specifically designed for the food industry, the QC Database Manager can also record micro information and export average analyses to the Least Cost Formulator. As sample results are entered, the QC Database Manager automatically checks entries for validity and then updates moving averages for fat and added water. Reports include sample logs, item averages, and cross-vendor or process comparisons.

Runs on an IBM PC or compatible.

QC ASSISTANT^{tm}

This remarkable tool is invaluable in every area of processing and blending. Among its 20+ functions, it can accurately analyze a meat's fat and protein content based on simple, inexpensive moisture test. The QC Assistant can also cost in-house trims, validate laboratory data, and calculate blend corrections for ground beef, sausage or preblends. It can determine how to pump a ham or roast beef to a proper PFF value. Predicts the day or hour to remove a dried sausage product from a drying room, eliminating costly and wasteful destructive sampling of product.

The QC Assistant is available on a convenient pocket computer. A standard IBM PC version is also available.

MARKET FORECASTER^{tm}

An exceptional software package that makes sales projections for products of materials based on historical monthly data. This sophisticated forecasting system will project up to one year ahead based on state-of-the-art optimization of a manually or automatically-selected model. (The Market Forecaster can choose from nearly a thousand possible models.) You can download new sales data from an accounting system and the Market Forecaster will export its forecasts to other systems. The program identifies a demand pattern from all data provided and makes either optimal summarized or detailed projections. Very useful for buyers, sellers, production schedulers and marketing managers.

Runs on an IBM PC or compatible.

Least Cost Formulations also provides process control courses and extensive consulting services for technical, R&D, QC/QA and food safety issues.

LEAST COST FORMULATOR™

The Least Cost Formulator is a multi-product blending system designed for formulating all types of mixed-ingredient products, including processed meats, franks, sausages, sandwich meats, non-specific loaves, pizza toppings, ground beef patties, ham pickles and dry and semi-dry sausages, The Least Cost Formulator is an essential element in any management system designed to optimize purchasing costs while faithfully meeting nutritional and quality requirements.

Halve Product Variability and Reduce Costs by 2% to 10%

The Least Cost Formulator selects the best combination of available materials to make blends that consistently meet quality specifications and USDA labeling regulations at minimum cost. The system can handle products made directly from raw materials or from pre-blends. In addition, the Least Cost Formulator can help you:

- Improve product quality
- Define product standards
- Develop new products easily
- Increase product yields
- Optimize use of on-hand inventories
- Eliminate costly blend correction
- Provide an integrated solution to materials management
- Generate and meet nutritional labels

Take the Guesswork Out of Purchasing Decisions

With the Least Cost Formulator, you can study the effects of changes in product specifications, available materials and prices using the system's formulation and "What if?" capabilities. The Least Cost Formulator also helps you evaluate new products and prepare bids for new contracts and orders.

The Least Cost Formulator is an easy-to-use, menu-driven system. A detailed System Description Manual and a step-by-step User's Manual provide extensive information on how to use the Least Cost Formulator for greater profitability.

The Least Cost Formulator is available for the IBM PC and compatibles using a variety of operating systems.

QC ASSISTANT™

The QC Assistant is a remarkable tool designed to analyze raw materials at a fraction of the cost - and similar or better accuracy - than conventional AOAC methods. In addition, the QC Assistant is invaluable in every aspect of meat processing and blending. This easy-to-use software program runs on a convenient pocket computer or a standard IBM PC. Using the QC Assistant you can:

- Perform raw material and pre-blend analyses quickly, accurately, and inexpensively

- Validate lab data
- Cost non-commodity or in-house trims in seconds
- Determine sample sizes for coring or grab samples
- Know how to blend or correct using up to six meats to a specific fat content
- Know how to pump hams or roast beefs to a specific PFF value
- Back-analyze products to infer estimates of excessive shrink, meat or lab variation

Save Money Every Time You Analyze Materials

To use the QC Assistant, you type in the moisture content of a skeletal trim or pre-blend on the hand-held computer. At the press of a button, the QC Assistant determines the moisture, fat, protein, and ash contents as well as the bind, color, and collagen constants. Analyses made by the QC Assistant are of comparable accuracy to those of certified laboratories. Best of all, you only need an inexpensive moisture measurement to get fast and precise results; you can save $$$ every time you analyze materials.

A Simple, Effective Solution You Can Use Immediately

The QC Assistant is designed for use by anyone who deals with raw material characteristics or costs; no computer experience is needed to make use of its amazing features. A step-by-step System Description Manual, complete with detailed examples, is included with the QC Assistant. Over 200 QC Assistants are in use in the meat industry throughout the world.

QC DATABASE MANAGER^{TM}

The QC DataBase Manager is a software program that documents and analyzes thousands of raw material and finished product lab analyses. The QC DataBase Manager gives you instant access to historical test results so you can put the information to work.

The QC DataBase Manager helps uncover the sources of processing variations and improve product quality. The system shows not only the average difference in samples but also the differences in variation. Use the QC DataBase Manager to identify which vendors vary more than others.

The QC Database Manager can transfer up-to-date information to other software applications (like the Least Cost Formulator™) and make them more useful. Instead of using estimated values in your formulation or cost accounting systems, the QC DataBase Manager can provide current moving averages for greater accuracy.

By tracking multiple analysis methods on comparison samples, the QC DataBase Manager automatically measures method biases and tells you how to correct them.

Make Full Use of Costly Lab Analyses

The QC DataBase Manager gives you a regular, consistent way of recording lab results. The system:

❑ Checks the validity of results as soon as they are entered
❑ Cross-indexes results by vendor or source

❑ Maintains a set of moving averages on vendors, raw materials and finished products
❑ Calculates and displays ratios, such as moisture/protein or PFF, instantly
❑ Stores up to 3 replicates per sample
❑ Maintains an unlimited sample history
❑ Automatically tracks and corrects differences between laboratory methods

More Information to Support Critical Decisions

Your expensive lab analyses can shed important light on issues in all parts of your operation. But usually the information you need lies buried and uncollated in a pile of paper or dusty cabinet. The QC DataBase Manager lets you record information systematically and retrieve information easily.

At a moments notice you can view past results to solve problems or answer questions. You can use the system to make better purchasing decisions and maintain better control.

The QC DataBase Manager is available for the IBM PC and compatibles.

The LaBudde Bindometer™

The LaBudde Bindometer is a remarkable tool designed to measure the "bind" or texture of smoked or comminuted meat products. Its accuracy is comparable to that of research instruments costing $10,000 to $20,000 and a measurement takes only seconds by plant personnel. The LaBudde Bindometer is invaluable in almost every phase of meat processing. This easy-to-use and effective measurement system is based on accurate force dial gauges and specially designed penetration probes. With the LaBudde Bindometer, you can:

❑ Develop new products to a specified texture reliably.
❑ Monitor outgoing product texture on every batch quickly, accurately and inexpensively.

❑ Reverse-engineer competitors' products easily and effectively.
❑ Save up to 1% of meat cost on every batch by cutting texture variability by up to 50%.
❑ Determine the effects of non-meat ingredients quickly and accurately.
❑ Determine the effects of different processing or cook methods quickly and accurately.
❑ Deliver more consistent quality to your customers.
❑ Cut slicing and packaging rework by up to 50%.
❑ Troubleshoot processing, slicing and packaging problems quickly.

Save Money Through Effective Texture Control

To use the LaBudde Bindometer, you simply hold the force dial gauge (with special probe attached) vertically over the product skin or flat surface of its interior. You press slowly and smoothly down until the probe punctures the surface. The LaBudde Bindometer reads the peak force used in the test. The entire procedure takes less than 10 seconds. You can easily make measurements on an entire package to obtain better accuracy or a measure of product variability, or you may measure different physical points on a product to obtain differences in texture at the center, by the skin, front and back, etc. The "bind" of a new material may be found quickly by testing as few as one test batch plus a control. Slicing or packaging rework problems may be diagnosed to the product in seconds.

A Simple, Effective Tool You Can Use Immediately

The LaBudde Bindometer is designed for use by anyone who deals with finished products; no laboratory or research expertise is required.

The LaBudde Bindometer system comes packaged as a kit which includes three precision force gauges spanning the range required by most meat products, specially designed precision stainless steel probes, several other attachments useful in other measurements with the gauges, and documentation describing the theory of meat product texture, the factors affecting texture, the step-by-step use of the Bindometer to make texture measurements, step-by-step procedures for evaluating new materials or process conditions, plus other simple process control procedures for characterizing outgoing product lots.

COLORGAUGETM

The ColorGauge Color Measurement System is a calibrated, accurate tool for measuring color of food products and other materials quickly, conveniently and inexpensively.

ColorGauge provides measured color in a variety of standard coordinates (CIE XYZ, Lab, Luv) based on a selected standard light source (Illuminants A, B, C, D50, D65, etc.). The system uses an easy yet sophisticated calibration methodology derived from the film development industry to provide accurate measurements over a wide gamut of color hues and shades.
ColorGauge can utilize images from a wide variety of sources, including common

computer scanners and digital cameras. Just scan or shoot the provided target to calibrate your device, then perform routine scans or shots to measure color instantly for large or small cross-sections of foods.

ColorGauge gives comparable results to expensive color meters costing thousands of dollars for a small fraction of the price. This simple, easy-to-use program offers convenience, flexibility and accuracy at a price affordable by any user.

Rapid, Objective and Accurate Assessment of Your Products

ColorGauge system gives you an objective, consistent way of measuring color and appearance for QC and R & D purposes. The system:

❑ Provides *calibrated* color measurements in standard coordinates.

❑ Provides *objective* color measurements to allow rapid consensus in evaluations.
❑ Provides *rapid* measurement for process control.
❑ Works on any *size* of sample.
❑ Allows calibrated images to be *saved* until no longer of interest.

More Information to Save Money and Improve Sales

Objective measurement of true product color is the key to determining accurate shelf-lives and code dating. It also allows rapid quotations for new products and maintenance of quality on existing products.

Changes in color are easily detected or classified as non-significant. Measurements

are so simple and inexpensive they can even be done by salesmen at their office location to speed competitive product proposals.

The ColorGauge Color Measurement System is available for the IBM PC and compatibles with Windows 95/98/NT/2000/XP and includes an ANSI standard calibration target.