

Hi-Tech Software bonanza

By Anny Dentener

Help these days is only a mouse click away when looking for ways to get your projects done quicker and better. Similar to a good reference library, tailor made software is now an essential tool for food technologists. Software makes it possible to quickly do tasks which were previously considered long and tedious, or even to do jobs that were previously considered impossible.

Software is available for a wide range of activities from nutrition calculations and setting up HACCP plans through to recalculation of sterilising cycles for canned food after a process hiccup. Whilst a few sell for less than \$1000, packages commonly cost around \$3000-\$10,000. With the addition of consumer data entry stations, the setting up of a sophisticated full sensory evaluation system can require up to \$50,000. In some areas there is still only "choice of one". More choice, however, allows for comparison on suitability of features, user friendliness and of course cost. Fortunately several packages offer web download demos or limited trial time fully functioning software. Downloadable demos or readily available demo CDs are essential so potential customers can easily review software features. However, presence in print media is still needed to get noticed amongst the clutter of the world wide web.

Examples of what is available:

With the new ANZFA regulations gazetted no food manufacturer can avoid the requirement for **nutrition calculations**. Traditionally done with spreadsheet packages, the use of a software package with a data base for all ingredients allows for quicker calculation, which is especially useful when formulating against dietary and cost constraints. The NZ Food Composition Database from Crop and Food Research has been used as the reference database in *FoodWorks* (www.xyris.com.au). A

dozen US diet calculation packages are reviewed on www.nutribase.com. The food industry focussed package *Genesis R&D* (www.esha.com) is available from ESHA. It also provides a standard US nutrition label with % RDA.

For **product development** the web offers numerous recipe sites but turning a recipe into commercial reality often benefits from the use of Design of Experiments (DOE) software. This approach allows the developer to arrive quicker at an optimum formulation, tying it in with the best process parameters for the plant. Examples of DOE software are *Design Expert 6* from Stat-Ease (www.statease.com), *ECHIP* from ECHIP, Inc (www.echip.com), *Guideline* and *Unscrambler* from Camo (www.camo.no) or *Modde* from Umetrics (www.umetrics.com). Some statistic packages such as *MiniTab* (www.minitab.com) also offer some DOE but tend to be more limited in scope and less user friendly.

When the needs of **sensory evaluation** researchers go beyond that found in a textbook or even a standard statistical software package, help in design, data collection and analysis could be at hand from Compusense in Canada with *Compusense Five* (www.compusense.com); from Biosystemes, France, with *FIZZ* (www.biosystemes.com) (in English); or from the United States with *Sims 2000* from Sensory Computer Systems (www.sensorysims.com).

To predict the **microbiological shelf life** of a food the *Food Spoilage Predictor* for "Tiny Tags" loggers from Energy Engineering (energy@nznet.gen.nz) predicts when spoilage will occur due to Pseudomonas growth under nominated storage conditions. Up to 1000 micro-organism/formulation combinations are covered with the Leatherhead Food Research

Association package *Food Micro Model* (www.foodmicromodel.com), whilst modelling of micro-organism growth can be achieved using the free package *MicroFit 1.0* (www.lfr.bbsrc.ac.uk/microfit) from the UK Institute of Food Research.

Campden & Chorleywood Research Association (www.campden.co.uk) offers several packages of a specialised nature. Part of the *Cake Expert System* is the **water activity and mould free shelf life prediction** module *ERH/ a(w) CALC*. Useful where water activities of components need to be balanced out to avoid moisture migration causing parts to dry out (e.g. apricots in muesli). The *CTemp* software calculates the thermal, nutrient and sensory effect on foods for **in-container heat treatments**. When a process failure occurs it calculates the extra process time

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needed. The *Safefood Process Design System* and the *HACCP Documentation Software* (v 3.0) help with food safety goals. Regionally available **HACCP software** are *HACCP ProActive* from ServeTech (www.safetyware.com) and info on *doHACCP* can be found at www.arrowscientific.com.au.

Ice cream makers (and their ingredient suppliers) should have a look at TechWizard vs2 from Owlsoft (www.owlsoft.com). It offers least cost formulation, comparison of freezing curves, nutrition label calculation and production linked features.

I suggest you have a browse and see what suits you. Detailed software reviews will be published in future issues.