SERVE software scrutinised

By Anny Dentener

Software package: SERVE-NZ Foods & Recipes Version, v 3.99 (Demo disk)
Function: Nutrition calculation.
Website: www.serve.com.au
Rating: ✪✪(out of five stars)

SERVE has been providing nutrition software for 15 years, and specifically targets the food industry with its "Foods & Recipes" version. At a budget cost of NZ$700, can it deliver and fit in with the requirements of a food technologist? Typical jobs for technologists not only include nutrition calculations for the new ANZFA labelling requirements, but also working through "what-if" scenarios when developing new products against nutrition and cost targets, or reformulating products for the Heart Foundation's "Pick the Tick" programme. Software needs to offer time savings and convenience over the use of a spread sheet.

The software shows it dietician/nutritionist origins in several places. This is obvious in the Introduction in the Help file which opens with comments on the contribution of food to health and wellbeing. Similarly, when starting a new food formulation in "Create a new Recipe", cooking details including meal occasion and cooking methods can be entered.

A next screen allows entry of ingredients. As with other nutrition software reviews published in 2001, I have used an Anzac biscuit recipe to test the features of the software (Figure 1). Ingredients are called up from the NZ FoodFiles 2001 Crop and Food database (53 nutrients), or the new ANZFA food labelling database which only has compulsory labelling nutrients. The "Find" function allows a search of the database, and comparison before selection of possible ingredients on composition per 100 gram. The "Search" function also allows a database search for foods that have a "greater than", "less than" or "equal to" level of any one of the nutrients listed. It is even possible to narrow down the list with a sub-search for a second nutrient, for instance to find those foods/ingredients that are both low in sodium and high in calcium. Quite a handy feature when having to work to nutrition targets.

Ingredient amounts used can be entered as number of servings or as a weight in grams. Once entered the nutrition details for the full recipe amount of the biscuit dough, and energy contribution % (from protein, carbohydrates, fat and alcohol) are updated. However, it is not possible to see the amount per 100 gram or per serving, which is a definite disadvantage for those "what if" formulation jobs. A printed report can be generated which features whole recipe, serving and 100 gram. Since only the number of servings can be specified, the serving size varies as you adjust the formulation. Not very practical.

When entering ingredients it is not possible to see details of the formulation as it develops. While opening a separate screen provides an overview of the recipe as it stands, both screens cannot be active at the same time. Costs of each ingredient are shown in the recipe screen when they have been entered against that food (= ingredient) in the database, but not so the resulting "cost-in-use" in the recipe. The % cost contributions is not available on screen and can only be called up with the printed report preview function. The report shows the cost for the overall recipe and a serving only but not per kg, which would be more relevant for a food technologist. This limits the usefulness of this feature. Percentages of each ingredient in the final formula are shown in the printed report in descending order, but again this is not available on screen while developing the formulation. For a single stage recipe the % list would clarify the " % characterising ingredient". Once a multi-stage recipe is made, e.g. chocolate coated ANZAC biscuits, the link to the original cocoa level in the chocolate coating applied to the baked biscuit is lost and will need to be worked out separately.

To enable the moisture loss from baking the dough to a biscuit to occur it is necessary to "Create a Food" from the recipe. At that stage it is only possible to nominate the absolute water loss in grams for the whole recipe amount, but not % loss, yield % or target moisture level. The software warns if you try to loose more moisture than is present in the recipe. Once a "Food" is created, the direct link with that formulation is lost. The cost of the product does not get carried through from the recipe costing, and needs to be entered again. New foods or ingredients can be sorted into broad categories but no subfolders for projects can be created, making searching difficult once numerous products (and their versions) are entered. Nutrient values can be overridden, for instance to adjust vitamins for cooking losses. When adjusting nutrient values for foods, missing values come up as 0.0 and this does not result in an alarm later in calculations or reports. Dangerous, especially when several people use the same database and others are not aware of what information was omitted at the time. It is even possible to adjust data in the original database, which I consider to be unwise. This option will be deleted in future upgrades. When it is necessary to adjust a nutrient value, it is prudent to first copy the food as a new food and then make adjustments.

Analysing the nutrition calculation results shows the need to manually recalculate the energy values. The database does not attribute any calorific value to dietary fibre (8 kJ/g), as required under the new ANZFA labelling rules. Similar problems also occurred with other software reviewed. Even ANZFA's own NPC net calculator conveniently ignores dietary fibre as it is not compulsory to list it. The software allows printing of a Nutrition Information Panel sheet with "Servings per package", "Serving size" and "Nutrition information" per serving and per 100 gram. However data are not rounded and this will need to be done manually after print-off or transfer of the data. SERVE-NZ claims that data can be transferred in 16 common file types to other programmes (from Word and Excel to HTML). Limitations of the demo mean that I have not been able to verify these claims.

Similarly, the demo does not allow printing of reports and exporting of data, resetting the Nutrient print order for the label, adding Nutrients or adding new ingredients.

Obtaining % RDI levels takes several steps. A person profile for the "ANZFA Adult" (or Child) needs to be created, but all RDI values can be adjusted to what is required. Asking questions about the activity level, height and weight may be relevant for a nutritionist, but it is not for labelling purposes. Values can only be entered for 21of the 29 ANZFA RDI values and 4 of the 8 Daily Values. Once the reference person is nominated against the recipe in the "Remove or Modify Recipe" section (name and place not well thought through) is it possible to obtain % RDI results for a serving of the recipe. In this case it is fairly meaningless as the initial recipe is the dough, not the finished biscuit which is only a "Food". The only way to circumvent this is to enter the resulting biscuit as a new recipe again, a cumbersome loop.

The "Contribution of ingredients to recipe nutrient amounts" report lists both the amount, and percentage contribution for a nutrient. A report from "Analysis of food contribution of selected nutrients" allows the selection of up to 9 nutrients and shows the absolute amounts (not percentages) contributed by each of the ingredients to those nutrients. However again these features only work for the dough and not the finished biscuit where the link with the recipe is lost. "Nutrient Information" lists 52 nutrients but only gives information for 31 nutrients, omitting some essential vitamins and sodium. For nutrients it provides useful "General" information, what happens if a person consumes "Too Much" or "Not Enough", and also shows "Where Found". Information for each Nutrient can be printed off.

Since I wrote this review over the holiday break it has not been possible to obtain references from end users.

Conclusion: SERVE has failed to fully make the transition from a dietician/nutritionist software to that of nutrition calculation for the food industry. It only just covers the basics. It does have some nice features

such as Search, and Nutrient Information. However, I became frustrated by its limitations in terms of "what if" formulation against a nutrition target, and the lack of overview on screen whilst doing this. The software is fairly stable.

Company: SERVE Nutrition Systems run by Mike and Hazel Williams, NSW, Australia.
Cost: Single license NZ$700

Demo download (only 40 foods) available from website.
Demo disk of SERVE-NZ for 30 day trial available, full database, limited functions.
Database: NZ Food Files 2001 nutrition database from Crop & Food loaded and the new ANZFA food labelling database with Australian food data. Alternative data bases: Australian AUSNUT (with folate, no sodium) or NUTTAB (sodium, no folate) and a US database.
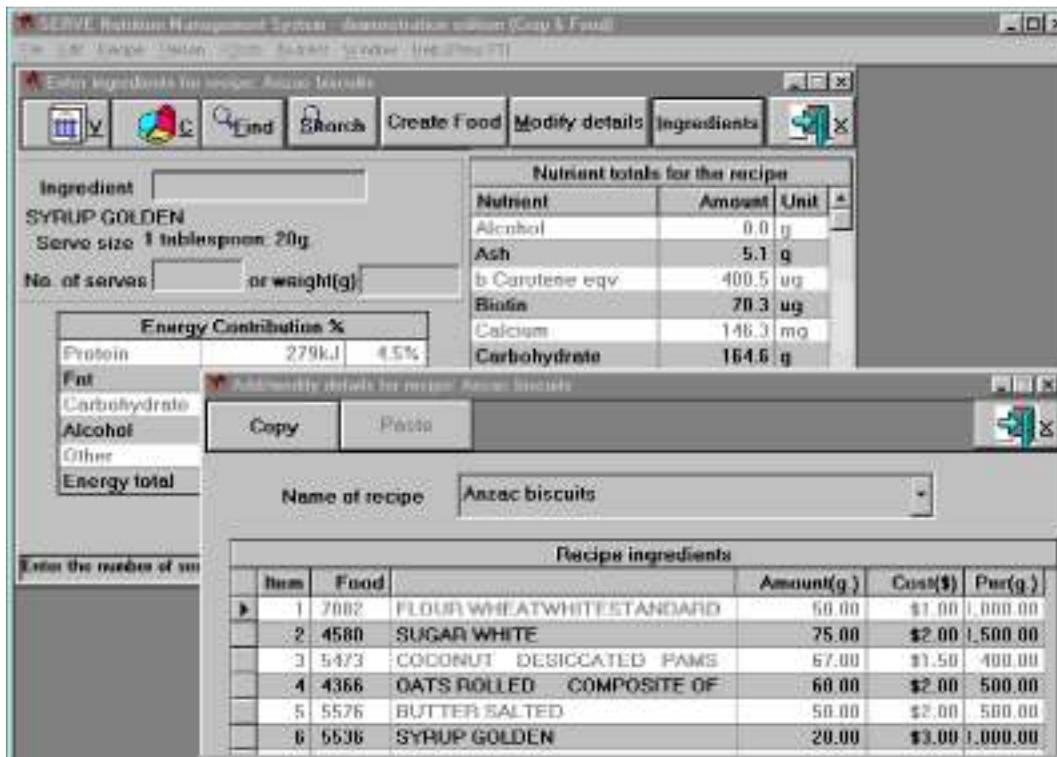

Figure 1: Main screens for entry of ingredients with nutrition information and the recipe/ formulation with ingredient costs for the Anzac biscuit dough.

Anny Dentener is an independent Food Technology consultant and founding member of the FoodInc Consulting Group (www.foodinc.co.nz) . E-mail: anny.dentener@xtra.co.nz