



Menu Planning Nutrient Analysis Software for School Meals

Phase II

An independent review of three software programmes designed to help caterers plan school lunch menus to meet nutrient-based standards

July 2007

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Executive Summary

The School Food Trust (SFT) commissioned the 2nd phase of the independent review to evaluate the features of different menu planning and nutrient analysis software packages.

The first phase (looking at the packages Crisp, Nutmeg, and Saffron) has been completed. The aim of the current review was to identify and review other menu planning and nutrient software packages that are either in use or in the process of being launched and which are considered suitable for use by school caterers to plan and analyse the nutrient content of school menus.

An independent review group (subsequently known as The Partnership) of four Registered Dietitians and Public Health Nutritionists (SL; KC; DB; EG) was formed and successfully tendered to carry out this review.

Both qualitative and quantitative methods, largely dictated by Phase 1 of the review, were used.

Software packages were identified from a variety of sources including: food, school, and catering networks; individual contacts; an internet search; and other sources of information. Inclusion into the review was based on criteria specified by the SFT.

Three software packages met the inclusion criteria and were included in the review: Dietsure4schools, HPort, and Relish powered by NutriPlanIt. The menu planning and nutrient analysis web-based service 'Catering4Schools' provided by St Aidan's School was also reviewed and will be published as a case study on the SFT website.

Five steps were undertaken:

Step 1: A review of the software package at a meeting of the software manufacturer and two members of The Partnership.

Step 2. A review of the website for each software manufacturer

Step 3. A road test of the software package by a caterer

Step 4. An appraisal of the software package by a dietitian/registered nutritionist

Step 5. Structured interviews with key users

Key findings

- Three of the four software packages reviewed had not been publicly launched and were subject to ongoing development and trials. The review is a 'snap shot' of these four packages.
- None of the packages reviewed were located using commonly used internet search engines, such as Google.
- There is generally good nutritional data on seven of the nutrients (energy (calories); protein; carbohydrates; fat; the percentage quantity of fat which is saturated fat; fibre; and sodium. There is, however, a lack of nutritional information for foods commonly used in schools with respect to the remaining 7 nutrients (non-milk extrinsic sugars, vitamin A, vitamin C, folate, calcium, iron, and zinc) required to assess compliance of an average school lunch against the nutrient-based standards

- Other issues impacting on validity and reliability include:
 - variations in calculations of fibre being derived using 2 different analytical methods (Englyst and Association of American Chemists (AOAC)). The Englyst method measures only the amount of non-starch polysaccharide (NSP) whereas AOAC includes lignin and resistant starch as well NSP
 - variability in non-milk extrinsic sugars (NMES) data
 - It will not be possible for software packages to produce meaningful results for some nutrients unless these issues are resolved and standards are used consistently
- Not all recipes had been tested by caterers before being entered into the databases. Validation is necessary to minimize errors in nutritional analysis.
- The four software packages used different methods to calculate a five-day average of nutrients for comparison with the nutrient-based standards.
- In general all packages can be used successfully without additional nutrition expertise from a qualified dietitian or registered nutritionist.
- Although the review has produced a large amount of useful information, many of the interviews were with key users who were very early in their experience of software use.

Wider Recommendations

Four recommendations are made based on the conclusions:

- To allow users to easily compare and contrast the menu planning and nutrient analysis software programmes, all information should be accessible via a common website e.g. School Food Trust.
- Further consideration should be given to recommending a standard method for calculating the nutrient content of an average school lunch. This will enable software companies and others tasked with assisting school providers, such as dietitians and registered nutritionists, to take a standardised approach to recipe development, menu planning, and nutrient analysis. In turn, this will increase the validity of results for comparison with the nutrient-based standards.
- Local Authorities (LAs) and schools should be encouraged to seek local expertise (from a dietitian or registered nutritionist) to review the data to be entered by caterers to ensure that it is of a sufficiently high quality to provide valid results.
- Consideration should be given to capturing key user feedback once users have become more familiar with software. Possible methods for this include an on-line forum or an electronic survey.

All the reviewed packages can assess menus against the nutrient based standards due to be implemented in 2008/9. Due to differences in need, a recommendation is that users should identify important features of each software package and subsequently base any purchasing decision on the availability of a pre-specified list of features offered by each package.

All reviewed software packages can be trialled for a limited period. Although purchasing costs vary there may be scope for negotiating joint contracts, and ongoing support can also be flexible.

1 Background

For school caterers to effectively implement and comply with the nutrient-based standards^a that will become mandatory in primary schools by September 2008 and in secondary schools by September 2009, they will need to analyse their menus and evaluate the information. A number of software packages that automate this process are available. Evidence collected by the SFT suggests that potential users are seeking help to differentiate between software packages and to identify which package fulfils their specific needs. As a result the SFT has commissioned two independent reviews to compare and contrast the features available menu planning and nutrient-analysis software packages.

The first phase of the review, evaluating the software packages Crisp, Nutmeg, and Saffron, has been completed. The aim of the current review is to identify and compare the features of other available menu planning and nutrient software packages.

The independent review group is an informal partnership of four Registered Dietitians and Public Health Nutritionists; Sue Lloyd (SL), Kathy Cowbrough (KC), Dianne Boaden (DB) and Elaine Gardner (EG).

1.1 Aims and objectives

The aim of this review is to provide an independent comprehensive assessment of the software from the perspective of different types of user.

The objectives of the review are to:

- Survey menu planning and nutrient analysis software companies
- Contact and interview menu planning nutrient software companies to arrange a demonstration and obtain access to a trial copy of the software
- Trial software using a structured format using pre-defined criteria
- Design and monitor a test exercise (input a standardised set menu) with a school caterer to investigate the performance and ease of use of the software
- Contact key users and conduct a structured interview to capture:
 - a) Overall impression of software
 - b) Functionality of software
 - c) Outputs
 - d) What is missing from the software
 - e) Recommendations for the future and priorities for product developments and the type and level of support needed from the SFT
 - f) Key informant feedback to SFT

^a As published in the SMRP (2005) Turning the Tables: Transforming School Food. Main Report. Note: the nutrient-based standards have been revised slightly in the new DfES draft School Food Regulations http://www.schoolfoodtrust.org.uk/doc_item.asp?DocId=40&DocCatId=

2 Methods of information gathering

Both qualitative and quantitative methods, largely dictated by Phase 1 of the review, were used.

2.1 Survey of Available Packages

Software packages were identified using two main routes:

- Networks:
 - School Food Nutrition Network (SFNN) from the Community Nutrition Group (CNG), a specialist group of the British Dietetic Association (BDA).
 - CNGlistserv, a network of over 200 dietitians working in the community, many of whom are in schools
 - Food Counts, a specialist group of the BDA.
 - Freelance Dietitians Group (FDG), a specialist group of the BDA
 - Nutrition Network for Wales
 - SENSE (Self-Employed Nutritionists Support and Enlightenment Group), an independent group of nutritionists

- Other sources of information:
 - The internet (general search)
 - The internet (company information)
 - The School Food Trust (SFT)
 - Individual dietitians and registered nutritionists who are known to work in this field
 - The Scottish Executive – school catering contact

2.2 Criteria for inclusion

Criteria for inclusion in the review was discussed by The Partnership, clarified with the SFT and identified as:

The software product:

- is available currently (or will be by May 2007)
- has a menu planning facility
- is able to analyse menus and make comparisons to the 2008/09 nutrient-based standards for schools
- has been specifically designed to be used in schools by school caterers

Software without nutrient analysis could be considered for inclusion provided that recipes had been previously analysed for nutritional content.

Some nutritional analysis software programmes, such as Microdiet, Compeat, DietplanIT, and WISP, are being used in by school caterers for planning meals. These did not fall into the remit of this review since they are designed primarily to be used by experts with nutritional training, such as dietitians or nutritionists, rather than by caterers.

Although many programmes have the facility for menu analysis the review included only those that have been developed to accommodate the complexity of menus offering choices, and to facilitate menu planning to ensure that the nutrient-based standards set by the Department for Education and Skills (DfES) are met.

2.3 Review of software packages by The Partnership

Companies producing software that was considered suitable for possible inclusion in the review were contacted by telephone to ascertain whether they met the inclusion criteria.

Details regarding these calls were recorded on a standardised form. (Appendix 1A) This included confirmation that where nutrient analysis was not available in the package, recipes had been adequately analysed before being uploaded to the system.

Those companies that met the criteria were invited to attend a review by The Partnership to demonstrate their software.

The review took the form of:

- a consultation with a minimum of two members of The Partnership. To ensure that a standardised approach was taken, one Partner (DB) was present at every review
- a review of each package (as demonstrated by company representative). This review was based on the guidelines used in Phase 1
- a standard recording sheet was used by both reviewers to ensure that all information was recorded and that there was comparability between companies reviewed (Appendix 1B)
- each review was reported using a standard format and agreed by both reviewers.

Each consultation also identified the type of user, and whether the software was in current use. Permission for contacting users was obtained from each software company. The availability of any reliability or validity studies was also sought from the individual companies.

2.4 Review of company websites

A member of The Partnership (KC) reviewed the website (where available) of each company to assess:

- ease and route of location
- clarity of information on the website, including methods for obtaining further information

2.5 Road test exercise

A 'road test exercise' was developed and, with permission from each company, was used to test each included software package for ease of use.

The 'road tester' was selected as representative of the intended target audience for these programmes and had:

- worked in school meals service for 17 years and as a consequence understands the service
- spent 7 years managing school meals provision in a large LA
- experience of setting up individual site contracts and managing provision in a multi-site environment
- no specialist qualifications in nutrition
- no prior knowledge/experience of the software programmes under review
- computer literacy with routine experience of Microsoft packages (including MS Outlook, MS Excel, and MS Word).

The same road tester was used in Phase 1 of the review ensuring consistency in this exercise. The brief for the road tester was consistent with that used in the Phase 1 review and was to:

- install and set up each of the software programmes
- use the manuals (which accompany each programme) and any available support services as necessary
- construct and analyse a standard one-week menu for a primary school
- make any necessary adjustments to the menu to ensure that it met the nutrient- based standards for primary schools.

The same menu was used as from the first review to ensure comparability between reports.

2.6 Dietitian's appraisal

A dietitian (DB) appraised each included programme, focusing primarily on the technical aspects of the software, including:

- the ability to adjust recipe analysis for compositional changes
- the analysis of NMES^b and NSP
- the quality of the McCance and Widdowson database (if supplied) and details of any other included databases
- healthy adjustments to recipes within the database (e.g. use of unsaturated fats, lower fat cheeses, or wholemeal flour)
- Potential accuracy of results (see box)

Because there are some common concerns around 'potential accuracies of the nutritional analysis results' the Dietitian who completed all the dietary appraisals also provided a review of 'Contextual Points on Menu Analysis'. This is found in Section 3.0 p10

Details of individual questions covered in the appraisal are in Appendix 1C

2.7 Key user interviews

Software companies were asked to supply a list of key users of their programme for selection for interviews.

^b Kelly, S A M, Moynihan, P.J., Rugg-Gun, A.J., and Summerbell, C.D., (2003) Review of methods used to estimate non-milk extrinsic sugars, *J Hum Nutr Dietet* **16** 27-38.

To meet the requirements of The Data Protection Act, companies approached key users to ascertain permission for their names to be included in the user list. For each programme, three key users (when available) were contacted for interview by a Partnership member. The aim was to include a range of different categories of user such as catering managers, head cooks, dietitians, and Local Authority users.

Telephone interviews were conducted by SL, EG and KC.

The structure of the interview was based on the 'Interview Guide for Present Users' that was used in Phase 1 of the review. See Appendix 2C and Appendix 1D for the interview guide and recording documentation.

3 Contextual points of menu analysis

This section highlights the common issues around 'potential inaccuracies' in the development and use of nutritional analysis software programmes used in schools. This assessment should also be read in context with the dietitian's appraisal of each programme.

3.1 Nutrient databases

McCance and Widdowson (M&W) database: 5th edition plus supplements and the 6th edition^c. This is the most commonly used database, included by the majority of nutrient analysis software programmes. Despite updates the database does not reflect the current eating habits of school pupils, or recent reformulations of foods such as breads, stock bouillon, sausages, burgers, and soups. Recipes and menus that include these foods can therefore generate results that may overestimate nutrients such as sugars, total fat, saturates and sodium (see example in Table 1). Other product reformulations, for example fat spreads fortified with folate, will also not be incorporated and will result in nutrients being underestimated. Despite the strengths of the McCance and Widdowson database, menu analysis would benefit from the availability of current nutritional information.

Table 1. An example of invalid nutrient estimation using sodium

Ingredient	Sodium (mg) per 100g of food	Reference
Stock cube, vegetable	16,800	McCance and Widdowson 6 th ed
Vegetable bouillon paste	11,100	RHM (02.09.05)

Accurate use of the databases requires knowledge and experience. A search for "white bread" using McCance and Widdowson supplied by Compeat v 5.7d gives both white bread (average) and white bread (sliced) as options. The 'average' bread

^c McCance and Widdowson, (2002) *The Composition of Foods Sixth summary edition*, London: Food Standards Agency.

^d Nutrition Systems, *Compeat v 5.7*.

has a sodium concentration of 520mg per 100g and the 'sliced' bread 461mg per 100g.

Where schools opt for procurement of food consistent with sustainable development principles it is likely that farmers and suppliers will use the McCance and Widdowson databases as a reference tool for providing nutrition information rather than incur the expense of chemical analysis. Any errors or omissions in this database will therefore be reflected in the menu analysis.

To overcome the possible problems resulting from the use of McCance and Widdowson it has been suggested that alternative sources of nutritional compositions should be used:

*“Turning the Tables: Transforming School Food” (Sept 2005)^e
Recommendation 20: The Food Standards Agency (FSA) should make its food composition data, including any relating to non-milk extrinsic sugars (NMES), widely available in an electronic format. This will provide information on foods and nutrients contained in the standards, expressed using analytical or calculation methods which reflect the needs of the standards.*

3.1.1 Supplier databases and / or own added data

To compensate for the missing or outdated information in the McCance and Widdowson database many software programmes include additional databases from wholesale suppliers or manufacturers. Users can also build their own customised databases.

Manufacturers will usually be able to provide accurate data for nutrients for which information is required for food labelling. The DfES nutrient-based standards however require assessment of additional nutrients using different methods. It is essential that the potential problems of 'missing' nutrients are addressed by an expert, such as a catering dietitian or nutritionist with relevant experience, so that the database maintains its integrity and the resulting menu analysis is a valid record of the different types of foods commonly eaten by the pupils.

The absence of published data for NMES has resulted in each company, or manufacturer, entering information for individual food items into the database. There is no assurance that this has been done with accuracy or is based on a valid method.

3.1.2 Food portion and serving sizes

The methods by which schools arrive at their serving size are not always clear. The McCance and Widdowson database contains standard portion or serving sizes for many foods based on MAFF's 'Food Portion Sizes'^f which may not be relevant for primary school children, nor reflect the increase in food portions since 1990. Some programmes give guidance using standard serving sizes from Hungry 4 Success

^e School Meals Review Panel, (Sept 2005), *Turning the Tables: Transforming School Food Main Report*.

^f MAFF, Second Edition (1990) *Food Portion Sizes*, London: HMSO.

(H4S) in Scotland.^g In the absence of a more informed approach, the serving size is simply the ingredients in the recipe divided by the number of portions that the dish provides.^h

Databases contain nutrients per 100g of food items. Users can add foods or ingredients, ensuring that foods sold by volume (such as mousses, ice cream and oils), are converted to nutrients per 100g using specific gravity values before being added to the database. A list of specific gravity values for a number of foods and beverages can be found in Food Portion Sizes pviii.ⁱ

3.1.3 Recipes

Recipes which are not calculated carefully, but are nevertheless entered into databases, will result in significant errors in the final menu analysis. If these recipes are subsequently shared in a recipe library the errors will be perpetuated. For example, margarine is often mistakenly used for nutritional analysis when the actual ingredient is a fat spread. “Margarine, soft polyunsaturated” is 82.8% fat (McCance and Widdowson 6th edition), whereas brands commonly used will contain significantly less fat, for example Phase Dawn (75% fat), or Summer County spread (55% fat). These types of errors are difficult to identify once the recipe has been entered into a database.

It is suggested that all recipes, before being entered into the database by an experienced user, should be checked to ensure that they:

- are written in a standardised format ideally using metric weights
- identify ingredients clearly; included detailed cooking instructions
- are kitchen and consumer (child) tested
- are coded so that they could be traced and updated
- are given a unique recipe name or identifier.

Software programmes that provide a selection of standardised, analysed recipes appropriate for the target population will help ensure nutrient accuracy of the menus provided that they are prepared exactly as instructed. Cooks should be encouraged to use standardised recipes to ensure that the menu analysis reflects what is offered to the pupils.

3.2 Menu analysis

Analysis of a menu offering choices is a complex task, and guidance for such analysis is needed.

Items that should be included when generating the nutrient content of an average school meal (for example the total amount of food provided, divided by the number of children eating it, averaged over a week), as well as the definition of 'a meal' need clarification. A meal can be considered as, for example, the main course plus starchy

^g Scottish Executive, (2002), *Hungry 4 Success: A whole School Approach to School Meals in Scotland*, Edinburgh: The Stationery Office.

^h MAFF, (1994), *Guidance Notes on Nutrition Labelling*, page 14, per serving and per portion.

ⁱ MAFF, Second Edition (1990) *Food Portion Sizes*, HMSO.

option plus vegetable plus pudding, with or without including bread and drinks such as juice or milk. Differing definitions, as well as differing methods of counting the consumers, will lead to inconsistent nutritional analysis.

Calculating the nutrient average of the food provided is relatively straightforward. However, calculating actual food consumption rather than the food provided is much more difficult, a process offered by only a few programmes.

4 Findings of the Review

4.1 Identified software packages

From the networks, individual contacts and other sources of information, software packages were identified. The parent company of each package was contacted and the profile of each package was discussed and recorded. These were individually compared with the criteria for inclusion resulting in four software packages meeting inclusion criteria. These companies were invited to participate in the review (see rows in **bold** in Table 2).

All companies participated in the full review process (company demonstration, road test, dietitian's appraisal, and key user interviews, with the exception of one programme which currently had no users).

4.2 Key findings

The 'key findings' for three software programmes are recorded in this section using the Criteria for Evaluation outline provided by the SFT (Appendix 2D) which was also used in the Phase 1 review. The review of the fourth menu planning and nutrient analysis web-based service, 'Catering4Schools' provided by St Aidan's School, will be published as a separate case study on the SFT website.

Table 2. Results of application of criteria

Name of Software Package/ Company	Currently in the market place	Has a menu planning facility	Is able to analyse menus and make comparisons with the nutrient based standards for all school levels	Has been specifically designed to be used in schools by school caterers	Comments	Included in review
DietPlan 6	✓	✓	Standards require input as default	x	Needs expert user	x
Dietsure4schools	✓	✓	✓	✓		✓
HPort	✓	✓	✓	✓		✓
Microdiet	✓	✓	Standards require input as default	x	Needs expert user	x
Nutricalc	✓	x	x	x	Needs expert user	x
Relish powered by NutriplanIT	✓	✓	✓	✓	Link with NutriPlanIT	✓
Catering4schools.com	✓	Partially. Set menus included	Partially. For set menus	✓	Information calculated by dietitian	✓
St Aidan's High School, Harrogate*						
Windiets	✓	? more for use by students??	?	x	Needs expert user	x

*This review will be published as a separate case study on the SFT website.

5 DietSure4schools

www.dietsure.com/4schools

5.1 Performance and features

The programme is web-based, requiring a computer with a broadband internet connection. A number of databases, including those supplied by McCance and Widdowson, and Brakes are provided containing a range of products, which enables many familiar ingredients to be included in school recipes and menus. Users can also build their own databases to include foods and recipes that would not otherwise be available.

The programme includes NMES (NDNS method) for the foods in the databases, and with a few exceptions, for manufacturers' data. Fibre (NSP) data is provided by McCance and Widdowson but there may also be fibre analysed by AOAC for some manufactured foods.

The programme is designed to account for changes in water content at the recipe entry page but currently there is no provision for compositional changes such as nutrient losses during preparation or cooking.

Recipe costs and ingredient requirements (for ordering purposes) can be obtained from the programme once the data has been entered.

The programme can test for compliance against food-based as well as nutrient based standards, although this feature is not yet available.

5.2 Programme assumptions

There is an assumption that the user entering the recipe understands the limitations of the databases and has an excellent knowledge of the foods used by the chefs as well as the cooking practices used in the kitchen. It is also assumed that the nutrient data contained in the programme is up-to-date and complete.

5.3 Ease of use

The web-based programme is very straightforward and easy to access. An e-mail address and password allows access to the website. Further security information is required for school use to allow or restrict access to certain area of the programme.

5.3.1 Speed of data entry

Creating a recipe is straightforward. The amount of time taken depends upon the number of ingredients in the recipe. (Table 3)

Table 3. Time required for data entry: DietSure4schools		
Information being entered	Time Required	Number of Clicks
One recipe	1 minute	7 clicks
One day's menu	6 minutes	50 clicks average
One week's menus	34 minutes	

5.3.2 Recipes

Loading recipes is straightforward and can be achieved in either two or three-steps dependent upon the inclusion of cooking instructions.

5.3.3 Output

The analysis output is easy to understand overall and the facility to examine results is useful. The input of a dietitian might be needed to produce menus that meet the nutrient-based standards and also to adjust recipes for weight loss during preparation and cooking.

The menu analysis calculates all possible combinations of lunch menu choices for the 5-day week before comparing them to the nutrient-based standards published in the 2005 School Meals Review Panel report. The menu is given one of three ratings: Excellent, Pass, or Fail depending upon the number of meal combinations that meet the nutrient-based standards. A summary of the best and worst meal combinations are also displayed. Results are displayed in a printable format.

Only a limited number of interviews with current users were possible because the programme had not been launched. Many users had received training in the previous week so the feedback did not reflect that of a regular user.

5.4 Training

A user with basic IT skills could operate this programme using the online help without any further training. A copy of the user guide is sent via e-mail after subscription has been authorised and can be used to help navigation around the system. Training is available, if required, at an extra cost dependent upon numbers, length of training and location. This training is delivered in a classroom style manner, and the software developers are responsive to the needs of the client.

5.5 Website information

- Availability: The website at <http://www.dietsure.com/4Schools/> is the home page for dietsure4schools. The front page gives basic information of the features of the software, and details of how to obtain a free five-day trial.
- Ease of finding: As with all the menu planning and nutritional analysis programmes for schools reviewed in this report the site is not easy to find unless the name of the programme is known. Using the search terms, 'menu-planning analysis for schools' and 'nutritional analysis programmes for schools' did not find the website. Searching for the name of the parent company, Nutrition Systems, or the main nutritional analysis programme, Compeat, will locate the website www.compeat.co.uk but the school menu analysis programme Dietsure is not mentioned. Using the term Dietsure gives more hits. The website www.dietsure.com gives a hyperlink to the 4Schools site.
- Clarity of website: The main home page is easy to read with basic information about the programme including cost, with additional side menu (panel buttons) leading to information about:

- What is Dietsure 4 Schools?
- Why a subscription?
- How does the menu analysis work?
- System Requirements?
- Ordering information
- Terms, and conditions
- About us
- Contact us

The Dietsure4schools programme is password protected from the home page.

5.6 After-sales support

As part of the subscription service access to software support is available by e-mail or telephone during office hours.

5.7 Unique selling points

The parent company, Nutrition Systems, has over 20 years' experience of nutrient analysis products.

Using DietSure4Schools menus can be analysed in several ways. In common with other nutrient analysis programmes a nutrient average of the menu items can be generated by dividing the total nutrient value by the number of pupils. This gives a 'provisions' average. In addition, Dietsure can generate the nutrient average of an individual choice selected from a menu by analysing up to 30,000 random menu choices and categorising each of them as 'excellent', 'pass' or 'fail' depending on the percentage of individual selections made from the menus which meet the nutrient-based standards. Menus not reaching 'excellent' or 'pass' can be investigated and the user is given prompts to select dishes that 'pass'.

The software is designed to allow schools that use it to meet the current requirement for nutrient standards. The information given on menu choices that meet the standards may also be useful to schools.

5.8 Cost

The basic cost of the programme for one year's subscription is £199.00 + VAT. Up to four additional users can be added to this licence at £79.00 + VAT per user per year. Discounts may be available on application. Training is available, the cost of which is dependent on number of participants, length, and location.

5.9 Summary of key findings

5.9.1 Ease of use

- Easy to set up and use by anyone with basic IT skills.

5.9.2 Summary of programme strengths

- The menu is analysed using 30,000 random samples of the choices that a child might chose from a menu. This method of finding an average of the nutrient options available to pupils produces very reliable information about the average nutrient content of meals chosen by a pupil.
- When compiling the menu it is possible to see the week at a glance so the user can visually check whether there are, for example, duplications of vegetables or fruits, hidden repetition of foods e.g. mince.
- It is easy to account for compositional changes e.g. weight change
- There is the facility to share recipes and menus. This feature could be of benefit to schools that are not part of a large contractual group.
- Since it is a web-based system, updates to the programme and databases are made automatically without the user's input.

5.9.3 Summary of programme weaknesses

- When entering an ingredient into a recipe it is not possible to examine its nutrient profile, which would help to produce a healthier menu.
- It is not currently possible to print recipes for cooks to use in the kitchen.

5.9.4 Review verdict: DietSure4Schools

This programme represents extremely good value. It is easy to use and the results are easy to interpret without expert help. The programme would suit many different users, from a single-site school through to a large local authority. This software has the advantage that it provides additional information on the nutrient content of menu choices.

This programme is constantly being updated in response to user feedback.

6 hport

www.hport.co.uk

6.1 Performance and features

The programme is web-based, requiring a computer with a broadband internet connection.

The versatility of the programme is due to the use of the 5th and 6th editions of McCance and Widdowson's database plus supplements. Users can also build their own database of ingredients.

The programme allows the user to:

- enter recipes to make recipe cards
- create a menu
- analyse a menu against the DfES nutrient-based standards; Hport reports that it checks menus against all the DfES food-based standards
- make changes to recipes to ensure compliance with the nutrient-based standards and food-based standards
- cost recipes
- create a pick-list for the caterer
- create orders for produce.

All features are easy to use, and navigation around the system is straightforward. The features of the programme meet the needs of caterers.

6.2 Ease of use

Navigation from the home-page is straightforward via the 'menu planning' link using a username and two passwords. The connection appears reliable and free of technical problems.

Navigation of the extensive website is managed by level of access. Separate log-ins are necessary for access to different sections: menu planning; cooking; learning; or monitoring, e.g. a cook could have access to the cook's folder only whereas the dietitian entering the recipes would require access to the menu planning areas.

6.2.1 Speed of data entry

Recipes are compiled as a first step to data entry. Data entry is straightforward and information is entered fairly quickly into the menu plan once the recipes have been compiled. Examples of timing and number of clicks are given in Table 4.

Table 4. Time required for data entry: hport		
Information being entered	Time required	Number of clicks
One recipe	55 seconds	7
One day's menus	5 minutes	31
One week's menus	27 minutes approx.	

6.2.2 Recipes

Adding a recipe to the database is straightforward. The time required depends on how many items and ingredients need to be included. The most time consuming activity of the package is entering personalised recipes even though it was possible to locate all ingredients for the test menu. All recipes are automatically stored as a 'recipe preparation card' which includes information such as:

- Healthy methods of preparation
- Quantities for 100 portions (regardless of portion size originally entered)
- The food groups involved e.g. meat, vegetable, herbs and spices
- Nutritional analysis per portion
- Cost per portion

All recipes, which can be printed, are kept in the 'cook's folder' together with ingredient pick-lists on either a daily or weekly basis.

A number of useful features offered by this package include:

- The facility for each recipe to be given a name and a recipe code number
- The option to select the 'measure' or unit size of ingredients being entered. This is described in a number of ways so that the user can use the description most suited to them
- The option to rename a menu item e.g. peas cooked in unsalted water can be saved as 'garden peas'. This is helpful when translating the recipes into menus
- The facility to create a new user database of foods or to add foods from manufacturers.

6.2.3 Output

Accessing output is straightforward. Each recipe can be compared, by portion, with the nutrient-based standards. Cost can also be compared, as can any combination of nutrient and cost. Recipes can also be viewed with their nutrient profile per portion.

The menu can be compared with both the nutrient and food-based standards. The comparisons are shown as tables of horizontal bar graphs that record the required elements against the standards for each day. If the standard is met the standard is ticked; failure to meet the standard is indicated by a cross.

Menus and recipes can also be displayed using the Food Standards Agency traffic light labelling system for fats, saturated fat, sugar and salt. This additional feature indicates how healthy individual recipes are on a three point system (healthy, okay, or less healthy).

The page also has links to the 'food-based' standards linked to 'Hungry for Success' for both primary and secondary age pupils. A further link takes the caterer to the School Food Trust website and the DfES food-based standards.

The nutrient-based standards are applied to the provision of a week's menu so that when there are 5 (or more) 'food group' compliant menus the average is tested against the food-based standards. The menu used during the road test had 5

compliant days. These scored a ✓ against each of the 14 nutrient-based standards. The results showed the standard and an average over the 5 day period.

Menus can be altered if necessary to meet the nutrient-based standards and there are suggestions for exchanges for dishes, which can be sorted by cost which is beneficial for budgeting. Changes can be made to the recipes on a nutrient-by-nutrient basis, although this requires good knowledge and understanding of the nutrient content of foods.

The programme allows for adjustments due to compositional changes during preparation and cooking, but clearly states that users should consult a dietitian to ensure that such adjustments are valid.

6.3 Training

The programme can be used without specific training. It has a clear display on each screen without unnecessary headings or captions. There is neither a 'help' facility nor any user guide but instructions at each stage are clear and concise and navigation through menu analysis is seamless. It was the view of the catering road tester that a person with only very basic computer skills could easily use this programme.

hport has no standard format for training but training is available and tailored to the needs of the user. Depending on need the company will offer appropriate training via video streaming, phone, the internet, or video. Alternatively face-to-face training is offered at the company's Wiltshire headquarters.

6.4 Website information

<http://www.hport.co.uk/menuanalysis.html>

- Availability: the programme is available via <http://www.hport.co.uk/hport.html> or <http://www.hport.co.uk/menuanalysis.html>
- Ease of finding: As with all the menu planning and nutritional analysis programmes for schools reviewed in this report the menu analysis site is not easy to find. Entering hport as a search term in Google found <http://www.hport.co.uk/hport.html>
- Clarity of website: The home-page is clear and has side-links to:
 - Menu Planning
 - Food Preparation
 - Learning
 - Pupil choices
 - Contact details

There is no obvious route for further help or information on menu planning or nutritional analysis. There are, however, a number of links to helpful, mainly government, sites related to food in schools and healthy schools.

- Contact details via e-mail (enquiry@hport.co.uk) or telephone are on the home page. There is also a registration facility.

6.5 After-sales support

Both e-mail and web-based after-sales support is offered to users. The telephone after-sales support is offered Monday to Friday.

The after-sales support is free of charge. The programme has not been marketed for the past six months and hence has no users. It was therefore not possible to investigate the quality or speed of after sales service. However all queries on the review were answered promptly and hport staff were very helpful.

6.6 Unique selling points

The programme has seven unique selling points:

- The programme is based on a catering framework rather than a nutrition framework; therefore the content and facilities are familiar to some caterers
- The programme can be used on-line or downloaded to desktop computer.
- Menus can be printed and foods represented in 'food groups' e.g. meat, vegetable, herbs and spices etc
- Advice on preparing food in the healthiest way is included on the recipe card
- Any presence of allergens is reported on the recipe card and on the menu. This is based on information about the ingredients or can be added manually. Any alteration to ingredients will update recipes globally with respect to the presence of common allergens
- Point of sale data can be collected using the programme
- The programme can be linked electronically to white boards in a classroom or cafeteria to display information from individual pages e.g. menus, nutrient analysis etc.

More generally the programme is easy to use and provides simple to interpret information measured against DfES nutrient-based and food-based standards. In common with other software programmes using McCance and Widdowson's databases as the source of nutrient information, the accuracy of the menu analysis is largely dependent upon the completeness and currency of the information supplied.

NMES values are from FSA^j and produce different figures compared with other methods. Clarification of methods to be used, or publication of existing NMES data, would be extremely helpful to software manufacturers.

Figures for fibre analysis use the Englyst method if this is selected from the nutrient list shown. At present only nutrient data from McCance and Widdowson is available.

The cooked values area of the programme needs to be completed by an experienced dietitian or nutritionist. Weight change can be calculated for an ingredient or single ingredient food within a recipe or menu from the 'Cooked Values' section of the programme, using weight change on preparation (WCP). Global changes for weight

^j University of Newcastle, Sept 2003

loss cannot be made on an ingredient by ingredient basis. For example, if fruit sponge is an item in McCance and Widdowson's database then a weight loss figure is possible on the system. Alternatively if the ingredients for fruit sponge are added to the database then a weight loss value can be given for each ingredient.

Nutrient losses can be estimated for an ingredient or single ingredient food within the 'Cooked Values' section of the programme.

Reliability and validity testing: hport Ltd report that they have undertaken reliability testing on 300 beta accounts and validity of the nutrient analysis has been conducted by a registered dietitian.

Overall the programme is comprehensive with a number of additional features such as cook's folder and access to classroom teaching and learning. As with other programmes it assumes that the data entered is accurate. The programme makes provision for weight change on preparation and hence allows for nutritional analysis of food as eaten, rather than as the uncooked ingredients.

6.7 Cost

At the time of the review it was not possible to determine the cost of the programme to schools operating in-house catering.

Additional costs: At the time of the review it was not possible to determine the additional costs that schools or LAs would incur

Additional Services: At the time of the review it was not possible to determine the cost for additional service that schools or LAs would incur

Group arrangements for schools/groups of schools/Local Authorities: to be confirmed.

6.8 Summary of key findings regarding the software package

6.8.1 Performance and ease of use

The on-line package is easy to use and has a logical structure that is self-explanatory. Ingredients and recipes are easy to enter but portions need to be added for each ingredient in a recipe. Print-outs are available. Minimal computer expertise is needed to use the programme. After sales support is available by e-mail and telephone.

6.8.2 Summary of programme strengths

- The programme is based on a catering programme and therefore is catering focused providing useful additional facilities such as pick-lists. This is the only programme included within this review that includes facilities to deal with raw and cooked weights of foods

- The entering of recipes and menus is simple, as is navigation, with no skipping between screens
- The analysis is clear and provides comparisons against the DfES nutrient and food-based standards
- Modifying recipes or menus to meet the food and nutrient-based standards is straightforward, and when menus need to be changed there are suggestions for substitutes sorted by cost
- It is easy to correct for compositional changes e.g. adding weight change values
- The presence of common allergens is indicated in recipes and menus
- The cook's folder with recipe and ingredients orders is convenient
- The programme is web-based and can be updated regularly.

6.8.3 Summary of programme weakness

- The user is required to enter the number of portions against each ingredient in a recipe, which can be time consuming
- References to production methods must be entered into the recipe otherwise it will not appear on the day's summary.
- hport report the NMES data was supplied by the FSA databank
- McCance and Widdowson is the sole source of nutrient data resulting in limited information on branded or bought-in products. hport report the option exists to add nutritional data that is made available by manufactures
- Examination of recipes is on a nutrient-by-nutrient-basis; it is not possible to see the entire profile of a food or ingredient

6.8.4 Review verdict – hport

The programme available at www.hport.co.uk/menuanalysis.html is an easily accessible and ready to use menu planning and nutrient analysis system. It is straightforward to use with little or no training and only basic IT skills. The software has been developed from a catering programme and is the only package that deals with the issues of raw and cooked values of nutrients. This is a key issue affecting the accuracy of all nutrient-analysis software programmes. Overall hport menu planning and nutrient analysis software is a product that delivers what it promises and would be a valuable addition to a school's meal service provision.

7 relish from Pelican powered by NutriPlanIT

www.pelicanrelish.co.uk

7.1 Performance and features

The programme is web-based, requiring a computer with a broadband internet connection. Its versatility and accuracy is due to the use of the 5th and 6th editions of McCance and Widdowson's database plus an extensive database from wholesale suppliers. Users can also build their own database of ingredients.

The programme allows the user to:

- enter recipes
- create a menu from the programme cookbook or from own recipes
- analyse a menu against the DfES nutrient-based standards and food-based standards
- make changes to recipes to ensure compliance with the nutrient-based standards and food-based standards
- print a report as evidence for Ofsted or Healthy Schools inspections, or for parents
- cost recipes
- create orders for produce.

All these features are easy to use, although it can take a time before users become confident in using features such as creating an order for produce. Overall the features of the programme meet the needs of the user.

7.2 Ease of use

Users require a user name and password to gain secure access to their recipes and cookbooks. Once the user name and password have been obtained the log-in process is easy and the connection appears reliable and free from technical problems.

7.2.1 Speed of data entry

Recipes are compiled as a first step to data entry. Data entry is straightforward and information is entered fairly quickly into the menu plan once the recipes have been compiled. Examples of timing and number of clicks are given below:-

Table 5. Time required for data entry: relish		
Information being entered	Time required	Number of clicks
One recipe	1 minute	6
One day's menus	5 minutes	42
One week's menus	28 minutes approx.	

7.2.2 Recipes

Recipes have to be added to the programme with each menu item, from single items such as peas to complete dishes such as apple pie and custard being defined as a

recipe. The process is, however, simple with the time taken dependent on the number of items and ingredients that need to be included. The most time consuming activity of the package is entering personalised recipes. Once the ingredients are added the whole recipe is then divided by the number of portions and users are reminded to save this by an on-screen prompt.

7.2.3 Output

Each school menu is evaluated by comparing the schools average daily or weekly nutrient levels against the target amount of each of these nutrients. The results are shown as an easy to read bar chart. The analysis for each nutrient is colour coded green (satisfactory), amber (warning) and red (unsatisfactory). Each nutrient has a tolerance which allows the transition from green (satisfactory) to amber (warning) to red (unsatisfactory). The on-line help does not clarify this.

The chart is in an easy to print format and does not need the input of a dietitian for interpretation. However caterers may need dietetic support to make changes to menus consistently not complying with the nutrient-based standards.

The analysis can be examined in detail by clicking on nutrients to see which dishes are contributing to high levels; also each dish can also be examined to assess how each ingredient affects the nutrient analysis.

7.3 Training

The programme is easy to use without training for those with a nutritional background. The on-line tutorial and help facility provide sufficient information for a user with basic IT skills to navigate effectively. However Pelican's view is that caterers will require training in order to maximise the benefit of using relish.

Training has been offered to schools and LAs on a one-to-one basis on site. Alternatively, groups of schools can join together to save on training costs. Initial dietetic support is provided to schools and LAs.

Currently the training options are;

- 1 day basic nutrition training (optional)
- 1 day 'relish' training: entering recipes, creating menus, cooking methods etc (mandatory)

7.4 Website information

- The website address is www.pelicanrelish.co.uk from where there are links to the Pelican Buying Company and Nutriplanner websites to access further company information
- Ease of finding: The homepage was found by entering 'relish' as a search term in Google
- Clarity of website: relish is described as a web-based nutritional analysis solution, with the home-page offering a 'take the tour' facility for a comprehensive demonstration.
- Contact for further information: A telephone number and e-mail address are given as contacts for further enquiries and information. There are also quotes about relish from customers.

7.5 After sales support

Both on-line and web-based after sales support with registered dietitians is offered to users. The telephone after sales support is available from Monday to Friday.

After the initial installation stage, after-sales support is charged to schools and LAs. Cooks or catering managers who have used the after sales support have been impressed by the responsiveness of the service, they have particularly liked that the dietitian at Pelican can access their cookbook while they are also on-line and so can help them in 'real-time'.

7.6 Unique selling points

The unique selling points of this programme are:

- The programme includes manufacturer's specific nutritional information as well as the McCance and Widdowson's nutritional database
- Due to Pelican's core activity as a procurement and supply chain operator, support for suggesting and providing suitable products can be provided together with the supporting nutritional information
- The company employs dietitians and can therefore offer support to caterers to meet the nutritional standards and enhance their knowledge of nutrition
- Telephone support allows a school's cookbook to be accessed remotely by a Pelican registered dietitian. This allows help to be easily delivered with both the caterer and dietitian viewing the same cookbook
- Menu balancing and interpretation to help with ensuring that menus comply with nutritional standards can be provided, via online access to a school's cookbook, by a Pelican registered dietitian.
- relish allows menus to be assessed against the food based standards as well as the nutrient standards.

The programme is easy to use and the output is simple to interpret against the DfES nutrient-based standards. Once the data has been analysed, changes indicated by

the traffic-light code can be easily made. Guidance and support is available from the Pelican registered dietitian.

Manufacturers have been required by labelling laws to provide data for only the eight main nutrients (energy (calories); protein; carbohydrates; fat; the percentage quantity of fat which is saturated fat; fibre; and sodium). As a result, the data that is needed for complete analysis and comparison against the 14 nutrient-based standards is sometimes missing. In response, relish has an ongoing programme to obtain the full list of 14 nutrients for all ingredients supplied by Pelican Buying. Gaps in nutrient values are currently left as missing values, or with dietetic support can be populated with the nearest equivalent from McCance and Widdowson. Recipes that contain ingredients with incomplete nutrients are highlighted in pink and are indicated with a warning label.

Non-milk extrinsic sugars have been added manually to all the McCance and Widdowson reference data using FSA or NDNS criteria. Manufacturers are being asked to provide values for NSPs by the Englyst method. However some manufacturers continue to use AOAC, since their products are sold outside the UK.

The software has a specific module that enables the menus to be compared against the food-based standards for both primary and secondary schools.

Full details of the nutrient profile of each ingredient can be obtained by following links from the programme menu (recipe → ingredient → nutrients), which is beneficial when changes to the menu are required.

Compositional changes during preparation or on cooking are discussed during the dedicated relish software training. Nutrient losses on preparation and cooking are currently accounted for by choosing the relevant cooked ingredient from the McCance and Widdowson data or from cooked (as served) supplier specific data of the ingredients and foods included in recipes. Weight loss of some, but not all, foods could be as high as 30%, which could significantly affect results based on portion sizes. Future development will provide weight loss information for all foods.

Overall the programme is comprehensive as long as valid data is entered. There is an assumption that the supplier and McCance and Widdowson data can adequately reflect the nutrient composition of the food. In addition, the programme is continually being updated. However, reliability and validity testing has not been undertaken to date.

7.7 Cost

Operating licence to schools operating in-house catering

Approximately £500 per year for Pelican members, rising to £600 for non-Pelican members. This is the basic cost for the system including maintenance and updates.

Additional costs:

On-site training by a registered dietitian is approximately £350

Additional services:

- Optional support from a registered dietitian to balance and interpret the nutritional analysis (2 x 3 week menu cycles) is £200.
- Telephone support from a registered dietitian is from £100 for 10 phone calls. This is mandatory in the first year, and optional thereafter
- Basic nutrition training. An optional one day foundation course from a registered dietitian, concentrating on school food and the food and nutrient standards is £350.

7.8 Summary of key findings regarding Pelican software package

7.8.1 Performance and ease of use

The on-line package is easy to use. Recipes are compiled using supplier and McCance and Widdowson data. Once the recipes are in relish the ingredients are sub-divided by the allocated number of portions. Menus are constructed by the caterer from the recipes and are analysed using the software. The analysis is achieved at the click of a button. The analysis is shown on screen and is interpreted from green, amber and red bar charts; print-outs from any screen are available.

Minimal computer expertise is needed and help is given via the telephone and in 'real time' through shared access to the user's profile by the Pelican registered dietitian.

7.8.2 Summary of programme strengths

- The programme is easy to use once the personalised recipes have been added.
- Full details of the nutrient profile of each ingredient can be seen which helps to identify healthy options of foods and recipes.
- The extensive list of suppliers' products gives access to a wide range of up-to-date nutritional information for inclusion into recipes and menus.
- Once the menus have been compiled the resulting graphs are easy to read and comparison with the DfES nutrient-based standards is straightforward. Recipes can also be easily changed to ensure compliance with the standards,
- Since it is web-based the programme can be updated by the software hosts, and without the need for input from the client.
- Menu balancing and interpretation can be provided via on-line access to the school's cookbook. A Pelican registered dietitian can assist caterers with ensuring menus comply with the nutritional standards

7.8.3 Summary of programme weaknesses

- All ingredients that are used need to be entered into the programme as a recipe, even when these are single items in a meal. This prevents individuals transferring a food item directly from McCance and Widdowson's database into a menu.
- The data provided by the suppliers currently is not always complete but there is a rolling programme of analysis to ensure that there is a full set of nutrients (fibre content using the Englyst method and NMES) for each food in the future.
- Compositional changes, such as weight loss or nutrient loss during cooking, are currently accounted for only by choosing appropriate cooked or uncooked McCance and Widdowson and supplier product nutritional information. Advice on using this feature is include in the relish training.

7.8.4 Review verdict: relish

The programme available at www.pelicanrelish.co.uk is a ready to use menu planning and nutrient analysis system. It is web-based and therefore easily accessible. It is straightforward to use with little or no training and only basic IT skills are required. The programme has been designed by a dietitian and a nutrition software provider. The software is suitable for use by caterers, and is discounted for use by Pelican Members. The weaknesses that the programme displays are common to many of the menu planning and nutrient analysis software packages. Overall relish powered by NutriPlanIT is a product that does what it is designed to do and would be a valuable addition to a school's meal service provision.

8 Features of the software programmes compared^k

Table 6. Features of the software programmes compared			
Feature	Dietsure4schools	hport	relish powered by NutriplanIT
Analyses the nutritional content of recipes through connection to McCance & Widdowson database?	Yes	Yes	Yes
Includes nutritionally analysed 'ready to use' recipes suitable for schools?	Yes Comment: Users at different schools can share recipes	Yes	Yes
How many recipes/menus can the software store?	Unlimited	Unlimited	Unlimited
Is nutritional data on branded 'bought-in' products available?	Yes	No Comment: hport report that data can be added if it is provided to the company	Yes
Corrects for compositional (nutritional) changes during preparation?	No Comment: Uses McCance data	Yes	No Comment: Uses McCance and supplier data
Corrects for compositional (nutritional) changes during preparation and cooking?	Yes	Yes	No Comment: Uses McCance and supplier data
Accepts imperial/household and metric measurements for recipes?	Yes	Yes	Yes
Can search for recipes with specific allergens	No	Yes	No Comment: Pelican report that there are future plans to include this feature

^k All information correct at time of publication

Makes suggestions for alternative dishes to help create a menu that meets standards?	No	Yes	Comment: HPort reports that alternative dishes can be sorted by cost	Yes
Can import & export menus and recipes?	Yes Comment: Sharing recipes is an option	Yes		No Comment: Pelican report that there are future plans for a library to share recipes
Generates recipe sheets to give to cooks?	Yes	Yes		Yes
Can e-mail recipes, menus and bar chart reports to others as attachments?	Yes	Yes		Yes
Can edit nutrient standard benchmark to fit specific age or gender group?	Yes	Yes	Comment: HPort reports user should request access to this module when buying the software	Yes
Can set tolerance levels for each nutrient standard?	Yes	Yes		Yes
Can edit nutrition content of recipes?				
Uses established approach or method for computing an average school lunch?	Yes	Yes		Yes
Evaluates lunch menu against all the 2006 interim food-based standards?	Not at present	Yes		Yes
Generates bar chart output comparing menu analysis against nutrient standards?	Yes	Yes		Yes

Programme provides a cost breakdown of recipes and menus if ingredient cost data loaded?	Yes		Yes	Yes
Breakdown labour costs?	No		Yes	No
		Comment: report that this feature is available under the menu planning module		
Web-based version for schools?	Yes		Yes	Yes
Regularly updated by company?	Yes		Yes	Yes
Potential for classroom usage?	Yes		Yes	Yes
After sales support/customer care service?	Yes		Yes	Yes
				Comment: support given by registered dietitians

9 Costs of software (July 2007)

Table 7. Menu Planning Nutrient Analysis Software – The Direct Costs

User type: Local Authority			
	Dietsure4schools	HPort	Relish powered by NutriplanIT
Licence	£599/year Allows 1 user and unlimited number of schools	Price on application	Price on application
Extra licence	£299 extra user unlimited schools	Price on application	Price on application
Annual renewal fee	All costs are subscriptions	Price on application	Price on application
Training	POA; all users are different	Price on application	Price on application
Maintenance and support	Free	Price on application	Price on application
Customised database	User database	Price on application	Price on application
Recipe analysis service	N/A as integral functionality in-built into software or Dietsure4schools will refer customer base to nutrition professionals	Price on application	Price on application
Summary	£599.00 plus training	Price on application	Price on application
User type: School			
	Dietsure4schools	HPort	Relish powered by NutriplanIT
Licence- Primary school	£199.00	Price on application	Approximately £500 (Pelican member); £600 (non-Pelican)
Licence – Secondary school	£199.00	Price on application	per annum includes maintenance of database and product updates
Extra licence	£79.00/year	Price on application	Price on application £500 – 600
Annual renewal fee	All costs are subscriptions	Price on application	£350/per person; discounted for groups
Training	POA all users are different	Price on application	Nil
Maintenance and on-line support	Free	Price on application	Price on application
Recipe analysis service	NA as integral functionality in-built into software or Dietsure4schools will refer customer base to nutrition professionals	Price on application	£200 per annum (optional)
Summary	£199.00 plus training as required	Price on application	Approximately £500 plus support at £100 per 10 phone calls (mandatory yr 1, optional thereafter)

10 Conclusions

This phase 2 review has identified and assessed three web-based menu planning and nutritional packages that have a range of features. A fourth package was also reviewed and will be published on the SFT's website as a separate case study

A number of general conclusions can be drawn and recommendations made based on the findings of this review.

10.1 The software packages

Three of the four packages are undergoing trials and are being updated. All companies demonstrated that they were willing to respond to customer needs, problems, and suggestions to improve their packages in response. This is made possible since all the programmes are web-based and are therefore easy to modify. Modifications are often made overnight when demand or use is lower.

It must be noted that this review is simply a 'snap shot' of these four packages at the time of the review and any customer is advised to contact companies directly to be advised of any subsequent updates and to discuss any individual requirements.

10.1.1 Web search

At the time of the review, none of the packages reviewed could be located through web-search engines. Caterers looking for menu planning and nutritional analysis packages suitable for schools will need to be aware of these resources prior to web-searching. Potential users may be unaware of the number and range of software packages currently available.

10.1.2 Recipes

Using correct weights, ingredients and cooking methods is essential to enable school caterers to produce a consistent product that reflects the nutrients consumed by pupils. If recipes are to be shared then it is essential that they are accurate and have been validated by caterers. This had not always been done.

10.1.3 Analytical Issues

There is a lack of analytical data of the foods commonly used in schools in respect of the 14 nutrients required for the Nutrient Based Standards. For many foods, information for only the eight nutrients required under the Food Labelling Regulations is available which may compromise the validity and use of the menu planning results for the other nutrients.

This issue is also compounded by the following issues:

- Nutrient losses in preparation and holding have rarely been considered
- Food wastage is not considered
- Analysis of fibre uses two different methods
- Data from the analysis of NMES is variable and may not be easily available.

Nutritional analysis of menus, particularly for some nutrients, may be invalid unless these issues are tackled consistently by all software providers. Problems regarding analytical issues when introducing menu planning and nutrient analysis or producing recipes can be minimized by involving a dietitian or nutritionist.

10.1.4 How is the 5-day nutrient average calculated?

All the reviewed software packages use different methods to calculate the nutrient average over 5 days to produce a result for comparison with the DfES nutrient-based standards. Differences included the inclusion or exclusion of drinks, bread, fruit, and salad items, as well as the use of different calculation methods.

Since this review was undertaken, the draft School Food Regulations have been published and have provided clarification for which food items should be included and excluded, as well as which computation method should be used.

(http://www.schoolfoodtrust.org.uk/UploadDocs/Library/Documents/draft2007regs_ec_version_230407.pdf) It is understood that the forthcoming SFT guide on the interpretation and implementation of the nutrient-based standards will address the analytical issues discussed in this report.

10.1.5 Additional expertise required

It was clear from the reviews that, in general, all packages can be used successfully without additional expertise (for example without the input of a dietitian or nutritionist). It must be noted however that all software companies strongly recommend that an expert is employed by schools that are struggling to design menus that meet the nutrient-based standards.

10.2 The review itself

Although the review has produced a large amount of useful information, many of the interviews were with key users who were very early in their experience of software use and had not had sufficient time to experiment or become fully familiar with them. Key users were unlikely to try out or use more than one software package and were generally unaware of the features of different packages.

10.3 Implementation of the legislation for 2008/9

It is recommended that the user makes a list of the features of a software programme that will be of most use to their organisation and compares this with features in Table 6 before purchasing a programme. The range of features available will suit the differing needs of different catering providers from opted out schools to local authority client officers.

All the software packages reviewed can assess menu compliance against the nutrient-based standards due to be implemented in 2008/9. Due to differences in the needs of different catering providers, a recommendation is that users should match their needs against features of each software package and to base any purchasing decision on the availability of a pre-specified list of features offered by each package. It is likely, for example, that the requirements of catering providers from opted-out schools will differ considerably from requirements of providers operating at a Local Authority level. All

reviewed software packages can be trialled for a limited period. Although purchasing costs vary there may be scope for negotiating joint contracts, and ongoing support can also be flexible.

10.3.1 Wider recommendations

Based on the conclusions of the review, it is recommended that:

- product and website details are made available for all menu planning and nutrient analysis software
- consideration be given to recommending a standard method for calculating the nutrient average over five days. This will enable software companies and users, such as dietitians, to take a standardised approach to recipe development and menu analysis and thus provide valid results for comparison. An example of this approach from the National Health Service is found in the Delivering Nutritional Care Through Food and Beverage Services - A Toolkit for Dietitians, produced by the Food Counts group of The British Dietetic Association
- Local Authorities and schools are encouraged to seek local expertise from a dietitian or registered nutritionist to review the data entered by caterers to ensure that it will provide valid results
- Consideration should be given to capturing key user feedback once users have become more familiar with software. Possible methods for this include an on-line forum or an electronic survey.

11 Appendix 1

Standard documentation developed by partnership and used in review of software packages

1A Standard Recording Documentation For Initial Telephone Interview Contact With Software Companies

1B Standard Recording Sheet For Demonstration By Company Representative

1C Standard Recording Outline For Dietitian's Appraisal

1D Standard Recording Sheet For Telephone Interview With Present Users

11.1 Appendix 1A

Standard recording documentation for initial telephone interview contact with software companies

Name of Software:
Name of Company:
Company contact:
Address:

Tel:
E-mail:
Website:
Date of contact:

Does the software programme meet the SFT inclusion criteria?

- a) available in the marketplace currently (or will be in the near future) YES/NO
- b) have menu planning facility YES/NO
- c) is able to analyse menus and make comparisons to the Nutrient Based Standards for all school levels (primary, secondary, special) YES/NO
- d) has been designed to be used by school caterers as opposed to dietitians/nutritionists YES/NO
- e) have nutrient analysis YES/NO (if no, please explain how recipe analysis has been performed.)

Based on the above, should this package be included further in the review? YES/NO

If 'yes' has the purpose of the Review been satisfactorily explained?

- Independent review
- Check timing.

If 'yes' are company willing to participate by

- Agreeing to give the Review Group (DB + A N Other) a demonstration and interview
- Company to be named, or anonymous, in the final report of the software review

And/or

- Providing a (full) copy of the programme for independent review by an independent 'Road Tester'.
- Providing a list of users who can be approached for comment

Appointment made for full demonstration with Reviewer DB + A N Other

Date: _____ Time: _____

Venue:

Confirmation e-mail sent:

11.2 Appendix 1B

Standard recording sheet for demonstration by company representative

Date:

Venue:

Company:

Software name and version:

Table 8. List of personnel attending from software company

Name	Job Title	Current involvement with Programme
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Names of those attending from Review Group:

1. Dianne Boaden

History of the programme

- How long has the software programme been available?
- When was the last
 - correction upgrade?
 - version upgrade?
- Who do the company believe the software is best suited to be used by?

Any other details:

Software Programme Features

1. Software access - web based / disc/ download onto PC ?
 - Computer requirements in terms of hardware and software.
2. How does the user install and set up the programme? (detail the steps)
2. What is loaded on the database as supplied?
 - McCance & Widdowson – which edition(s) and supplements?
 - Other databases (?USDA etc)
 - Manufacturers' data e.g. Tillery Valley, Brakes, Anglia Crown, Sodexo, Aramark, etc.
 - Are there any school recipes pre-loaded (numbers/where have they been obtained from and who has calculated their nutritional analysis?)
 - Does the software estimate NMES. If so what are the criteria?
 - Does the programme estimate NSP fibre, or is it AOAC, Southgate, or another?
 - Do foods on the additional databases provide the appropriate 14 nutrients as required by the nutrient-based standards?
3. Recipes
 - Can the software analyse personal recipes?
 - Is it possible to add personal recipes to database? Detail steps
 - Are all recipes tried and tested before analysing and adding to the database?
 - How easy is it to update recipes on client database? (detail steps)

(for example change in fat content of meat specification)

- If updated, is this retrospective to update all recipes with the new information?
- How many recipes can the database hold?

- Does it accept imperial and metric measurements for recipes?
- Can it search for recipes free from specific allergens?

4. Adjustments for changes

- Does the programme correct for nutritional changes during preparation?

Explain. (e.g. potato and peeled potato)

- Does the programme adjust for compositional changes on cooking? Explain. (e.g. water with rice, pasta etc)
- Can expertise support be found to do calculations for cooking losses? (e.g. vitamin and mineral losses)
Where?
How do people know where to look?

5. Menus

- How many menus can be held?
- Can you import and export menus so others can work on them?

6. Does the programme show compliance with nutrient and food based standards?

- DfES food based standards set as default?
- Are the 11 nutrient based standards tested for compliance in the menu cycle?
- Does it provide alternate dishes that can help create a menu that meets the standards?
- Is this from the same food group or will it search more widely?
- Are you able to edit the nutrient benchmark to fit specific age group/gender group?
- Are you able to set tolerance levels for each nutrient standard?

7. What additional functions does the programme have?

- Recipe printouts for cooks
- Food orders from ingredients
- Costings of recipes and/or menu (if ingredient costs added)
- Presentation of bar charts/graphs/tables of results of compliance (?horizontal/vertical charts/colours etc)
Is this supported by a table of figures?
- Ability to send recipes/charts/graphs as attachments

8. Does the package have any unique selling points?

Training

9. What are the training needs (as a school caterer)

- to operate the programme effectively?
- to interpret the output?

10. What training is offered by the company, specifically:

- length
- who facilitates the training/training expertise
- how delivered (face-to-face/distance learning)
- any update training
- how company shapes training to meet the individual need of the schools
- training evaluation

11. How long do you feel it takes to be a competent user (as a school meals caterer)?

Costs

12. Cost of software

- What is the cost and what is included in the package (per site)? (+/-VAT)
- additional costs of training, demonstrations, set up/installations, and after sales support.
- Availability of special deals
- Are there any ideas for how schools could join together to reduce costs.

After Sales Support

13. Is there after sales support YES/NO

- Is it 24/7?
- Does this involve additional cost?
- How is this carried out – telephone/on line/ call out service.

14. Does the company have a website? Address

The Future

15. Plans for future development

- willingness to add extra features

16. Is there web-based access for the school?

- Is there potential for classroom use?

General

17. How often is the company software updated? Provide examples.

18. Is there access to trial copies of the programme for road testing?
YES/NO

19. Is there access to names and contact details of present users of the programme? (discuss Data Protection Act). YES/NO

20. Is there any evidence of reliability exercises/studies performed by the company (or others?)?
Details(?published/obtained from)

21. Is there any evidence of validity studies/exercises performed by the company (or others?)
Details (?published/obtained from)

11.3 Appendix 1C

Standard recording outline for dietitian's appraisal

Name of Software programme:

Name of Team Member: DB

Date:

Access to software:

Recipes

Access to ingredient information

- Quality of the supplied database, McCance & Widdowson version X
- Quality of other supplied databases e.g. USDA
- Quality of UK manufacturers' / wholesalers' data in database. How was this information derived?

Is it easy to add own data or update data?

If updated, when was this last done. Evidence for this?

Ability to adjust recipe analysis for:

- Preparation losses e.g. peelings from fruit and vegetables
- Weight gain on cooking e.g. dried pasta, rice, pulses; deep frying
- Weight/water loss on cooking e.g. when baking, grilling, steaming
- Vitamin, or other nutrient losses during the 'manufacturing' process in the kitchen

Nutrient declarations

- Non milk extrinsic sugars (NMES).
 - Are they listed in the results?
 - What is the basis for this estimation?
- Fibre. Which method is given in the results?
 - Is it NSP (Englyst) or another e.g. AOAC?
 - Is methodology stated?

Recipe Development

- How easy is it to adjust recipes within the database to make them 'healthier'?
- What is the provision within the database for ingredients with reduced fat, saturates, sugars or sodium; or increased folate, fibre, calcium, iron or zinc?

Supplied Recipes

Are all recipes:

- in a standardised format

- weights or volume
- metric, Imperial or household
- ingredients properly described
- kitchen tested
- taste tested by customers
- accompanied by accurate cooking methods
- full cooking instructions
- include garnish
- make serving suggestions e.g. serve with green peas and brown rice

Menu Analysis

- What is the basis for the menu analysis?
 - Is it the weighted mean, or averaging method
 - Is it based on statistical and mathematical modelling

Potential Accuracy of Results

11.4 Appendix 1D

Standard recording sheet for telephone interview with present users

Date:
School:
Telephone number:
Software name and version:
Name of School Caterer/software user:
Job Title:
Name of person interviewing from Review Group:

Recap on purpose of the telephone review:

- a) SFT has commissioned an independent review of the software programmes which analyse menus
- b) Interviewing people who have used or are trialling these programmes are an important part of the review
- c) Neither the telephone responder, or the school, will be named in any report
- d) Confirm timing (25 – 60 mins) and availability

Warm-up: Role and experience of programme

Check job title and role within school meals provision

Check type of programme being used and that this person is the one using it

Did he/she have a role in selecting this programme

Why was this particular programme chosen for purchase?

How was the programme introduced to the school?

How long has the school been using the programme?

To what extent is the programme used within the school or local authority?

How involved is this person with the programme?

Does he/she add recipes?

Does he/she plan menus?

Does he/she evaluate the results?

What training was given?

Was this sufficient?

Overall view of software programme

What is her/his overall opinion of the programme?

(Note that caterers are very focused on costs and budgets)

Strengths and weaknesses of the software

Explore views on

Good features/pros of the programme

Drawbacks/cons of the programme

Specifically probe views on

Ease of use overall

Does it do what they want it to?/ fitness for purpose

After sales support – how often is it needed?

Cost – of programme, training, support

Other areas to explore

Were there any recipes supplied with the programme?

Are there 'ready made' menus available in the programme that are designed to meet the DfES nutrient-based standards?

Is it easy to add recipes?

Are these checked first, if so by whom?

Are they tried and tested?

How easy is it to update recipes?

Are all the foods or dishes that are required by the school available on the programme's database?

Are all the nutrients that are required by school available on the programme's database?

How easy is it to create a menu plan?/make changes to menu?

Can menus or recipes be shared with other schools in the area?

Is this a good idea?

Are the printouts useful? (results of the menu analysis Vs DfES nutrient-based standards)

Are they easy to read/understand?

Do they use the software for printing out recipes for the cooks?

Do they use the software for printing out menus?

Do they use the software for ordering provisions?

Do they use the software for costing recipes?

Do they use the software for costing menus/ menu cycles?

Is the software used in the school classroom?

Identification of gaps in software

Is there anything that she/he would like the programme to do that it currently does not do (or do not know how to do). What is missing?

Improvements for the future

How does she/he think the programme could be improved for the future?

Are there any improvements that could be made to make it more user friendly?

Are there any other functions that would be helpful?

Is there enough information or help provided; either in a manual, on-line help, or other?

How does she/he rate the after sales support?

What are the recommendations for future software developments?

Support in meeting nutrient standards

How easy do they find it is to create menus that meet the nutrient standards? (*iron is often mentioned as being a rather elusive target*)

What other resources (than software) would be helpful?

People: training, dietetic expertise, helpline

Material: reports, e-mail newsletters, manuals, directories?

Funding?

Would you recommend the software to other school meals caterers?

If not, why not?

THANK YOU.

12 Appendix 2

Documentation developed during Phase 1 of the review that was referred to during Phase 2

2A Interview Guide for Company Representatives

2B Brief for Road Test 'User'

2C Interview Guide for Present Users

2D Criteria for Evaluation

12.1 Appendix 2A

Interview guide for company representatives

Recap on purpose of the review:

- SFT has commissioned an independent review of the software programmes which analyse menus
- Short interviews with representatives from the companies that market the software programmes
- Would you like responses will be used anonymously in the report (or would you like to be named)
- Remind respondent of role as independent reviewer
- Check timing (estimated timing 150-240 minutes)

1: Warm-up: Role and involvement in the programme:

- a. Check job title/role/responsibilities within the company/current involvement with programme
- b. Explore history of programme/How long on the market/last upgrade

2: Features/Functionality of Programme:

- a. Explore the key features of the programme/range of functions/ability to respond to the specific needs of individual schools and local authorities (LA's). Specifically probe:
 - ingredients costing
 - labour costs
- b. Unique selling points
- c. How do users install and set up the programme?
- d. Computer requirements in terms of hardware and software
- e. How the programme handles sugar analysis and non milk extrinsic sugars?
- f. How the programme calculates non starch polysaccharide values?
- g. Does the programme test for compliance against food based standards?
- h. Does the programme adjust for compositional changes on cooking?
- i. How do they indicate to people where special expertise support can be found to do the calculations for cooking losses
- j. Any evidence of reliability exercises/studies? And if so have they been published/how can people get hold of them
- k. Any evidence of validity exercises/studies? And if so have they been published/how can people get hold of them

3: Costs of Software:

Clarify costs of software programme to schools/Local Authorities. Specifically probe:

- a. What is included in the package/additional costs for training, demonstrations, set up/installation, after sales support
- b. Availability of 'special deals'. Any ideas on how schools could join together to reduce costs.

4: Training:

- a. Training needs to operate the programme effectively/interpret the output
- b. Explore whether training offered by company, Specifically probe:
 - Length
 - Who facilitates the training/training expertise
 - How delivered (face to face/distance learning)
 - Any update training offered
 - How company shapes training to meet the individual needs of the schools
 - Training evaluation

5: After sales support:

- a. Explore if such support is offered by the company. If so how offered – telephone/on line/call out service
- b. Is after sales included in process of programme/Are schools charged for this service?

6: Future development of the programme

- a. Explore plans for future development of the programme/NPD
- b. How willing are they to add extra features?

7: Access to trial copies of programme:

- | |
|--|
| <ol style="list-style-type: none">a. Explore how this could be made possible for reviewer and school caterer who is set to 'road test' the programme |
|--|

8: Access to names and contact details of present users of programme:

- a. Explore possibility of access to customer database to select (randomly) current users to contact for a 15 minute interview/Discuss data protection act.

12.2 Appendix 2B

Brief for 'road test' exercise

1. Introduction

In order for school caterers to effectively implement the incoming nutrient standards they will need to analyse their menus and evaluate this information. There are software programmes which are designed to carry out this compositional analysis and subsequently evaluate content against nutrient standards. These software packages have different features and school caterers are free to select and purchase the software which suits their needs. However the School Food Trust (SFT) has received feedback that potential users (schools and LEA's) would like help in selecting the right software programme for them. As a consequence the SFT has commissioned an independent review to evaluate the differential features of each software package.

This review will draw on information gathered from four sources:

- interviews with representatives from the companies which market these programmes,
- interviews with present users to gather feedback,
- a 'road test' of each package by a school meals catering manager to assess 'ease of use' and performance,
- an 'expert' dietitian/nutritionist's review.

It is intended that information from these four sources will be condensed into a report which will help potential users select the right software for them. This document provides a brief for the 'road test' exercise.

This follows on directly from Phase 1 of the review, where 3 other programmes were road tested.

2. Purpose of 'road test' exercise

To evaluate the operational aspects of computer software programmes (additional to phase 1 of the review) designed to help caterers plan menus which meet nutrient standards.

3. Objectives of 'road test' exercise

To:

- assess the need for training to install, set up and operate the software programme,
- test how easy it is to install and set up each software programme,
- to compare the speed of data entry (measured in minutes and/or number of keyboard/mouse clicks) for:
 - 1 recipe
 - 1 days menus
 - 1 weeks menus
- to test 'ease of use' of each programme by entering and analysing one weeks school menus and recipes provided by the SFT,
- using the headings provided in appendix 1 provide debrief notes (1-2 pages per software programme) for the reviewer plus a face-to-face debrief

4. Scope of exercise

There are a minimum of 2 and a maximum of 4 software programmes to be tested:

Initially those to be tested are:

- Dietsure4schools by Nutrition Systems
- Relish by Pelican Buying/Nutriplanner IT

The additional programmes will be detailed as soon as the participation in the review is confirmed, and certainly by Thursday 29th March 2007.

5. Timeline

Table 9. Timeline for review	
Date	Activity
23 rd March 2007	Start of road testing procedure by caterer with 1 st programme
23 rd March- 5 th April 2007	Caterer carries out 'road test' exercises, feeds back on individual programmes as soon as completed (2 ½ days later) in form of report and results/charts from menu input
By 5 th April 2007	Completion of reports and road test exercises

6. Personnel

This 'road test' exercise will be carried out by Sarah Smith who is a catering consultant. Sarah has 15 years experience working in school meals for Kent County Council. She understands the school meal service at both the operational and planning/management level. Prior to this exercise she has not worked with any of the software programmes under review so she will be fresh to this 'road test' exercise and will be able to maintain a high level of objectivity.

Appendix 1

Review of 3 Menu Planning Computer Software Programmes

'Road Test' Exercise – Criteria for 'Ease of Use' Evaluation

Need for training

- Would a school caterer (supervisory level/head cook) need training to operate the Programme?
- Could a computer literate person pick up and operate the programme effectively?

Set up/installation

- Is the programme straight forward/difficult to set up and install?
- Do you need any special hardware/software to operate the system?
- How is the programme installed (downloaded on line or CD)?

Speed of data entry

- How long to enter one recipe (measure in minutes and number of mouse/keyboard clicks)?
- How long to enter one days menus (measure in minutes and number of mouse/keyboard clicks)?
- How long to enter one weeks menus (measure in minutes)?

Recipes

- How complete is the data base or recipes?
- How easy is it to load personalised recipes?

Output

- Was it straightforward/difficult to get the output?
- Was the output easy to read/understand?

- Does the programme provide help in interpreting the results?
- Is it easy/difficult to print the output?
- Is nutritionist/dietitian expertise needed to interpret the output?

Versatility

- Would this suit an individual school (primary or secondary) or a Local Authority which needs to analyse menus for a number of schools?

12.3 Appendix 2C

Interview guide for present users

Recap on purpose of the review:

- SFT has commissioned an independent review of the software programmes which analyse menus
- Short interviews with people who have used these programmes are an important part of this review – find out how these programmes work in the field
- Responses will be used anonymously in any report (i.e. you will not be named)
- Remind respondent of (Name of consultant/company) role as independent reviewer
- Check timing (estimated time 25-60 minutes)

1: Warm-up: Role and experience of programme:

- a. Check job title and role within school meals provision
- b. Check type of programme used and familiar with/how introduced to programme and personal involvement with programme/how long used programme/explore how used/applied programme and level of usage (school or local authority level)

2: Overall view of software programme:

- a. Explore overall view/verdict of programme/reaction to software programme

3: Strengths and Weaknesses of Software:

Explore views on

- a. Pros (good features/strengths) of programme
- b. Cons (draw backs/not so good features) of programme
- c. Probe specific views on
- d. ease of use
- e. fitness for purpose (does it do what they want it to do?)
- f. after sales support
- g. cost

4: Identification of gaps in software:

- a. Are there specific elements/features missing from the software/are there any gaps in programme.

5: Improvements for the future:

- a. Explore how the software programme could be improved for the future
- b. Probe views on/improvements to user friendliness/features or functions offered/ information provided/after sales support
- c. What are recommendations for future software development?

6: Support in meeting nutrient standards

- a. Explore what other resources (in addition to the software) would help them deliver/meet the nutrient standards/ Probe resources in the shape of :
 - People (e.g. training, dietitian expertise, helpline)
 - Materials (e.g. /reports/e-mail newsletters/ manuals/directories)
 - Funding

12.4 Appendix 2D

Criteria for evaluation

(Outline for key findings for each software package)

A) Cost

- Of basic programme to schools/Local Authorities
- Any 'special deals' for schools/groups of schools/Local Authorities?
- Are there any additional costs? – Specifically test for additional costs for training, demonstrations, set up/installation, after sales support (e.g. call out fee, telephone support)

B) Website Information

- Is it available?
- Is it easy/difficult to find? Describe route to locate website information (e.g. through Google search)
- Is it easy/difficult to understand
- Is it clear how/who to contact for further information

C) Training

- Is it needed to use the programme/Could a computer literate person pick up and use the programme effectively?
- Is training offered to schools/LAs
- What does the training consist of? Probe length, who facilitates the training and training expertise/qualifications, how delivered, Is there a facility for 'update training'
- Versatility of training package, evidence of shaping training package to specific needs of schools/LAs.
- Any evidence of training evaluation/Feedback and views from users on training
- Were schools charged for training

D) After Sales Support

- Is it offered by the company?
- What format – telephone/callout service/on line support service
- Were schools charged for after sales service
- Quality of after sales service/speed of response/access to support. Any evidence of evaluation of after sales support by companies

E) Ease Of Use (most of this assessment will come from the 'road test 'exercise).

- Installation and set up. How is this done (i.e. by CD or online) and how straightforward/difficult was this
- Speed of data entry
 - How long to enter one recipe (measure in minutes and number of mouse/keyboard clicks)
 - How long to enter one days menus (measure in minutes and number of mouse/keyboard clicks)
 - How long to enter one weeks menus (measure in minutes)
- Recipes – How complete is the database of recipes. How easy is it to load personalised recipes

- Output
 - Was it straightforward/difficult to get the output?
 - Was the output easy to read/understand. Does the programme provide help in interpreting the results?
 - Is it easy/difficult to print the output?
 - Is nutritionist/dietitian expertise needed to interpret the output?

F) Performance and features

- What sort of computer hardware/software is needed to run the programme? Is this the sort of hardware/software frequently found in schools/LA catering departments?
- Versatility (i.e. range and usefulness of features)
- Are there any unique selling points to the programme
- Fit for Purpose - Does it do the job effectively (does it analyse menus and evaluate against the incoming nutrient standards and give guidance on how to manipulate menus in order to meet the standards?)
 - Does the programme include a data base of non-milk extrinsic sugar values
 - Does the programme include values for non-starch polysaccharide measured by the Englyst method rather than dietary fibre (Southgate method)
- Does the programme test for compliance of menus against food based standards?
- How long has the programme been on the market? When was it last upgraded?
- Does the programme adjust for compositional changes on cooking? e.g.
 - account for cooking losses
 - fat uptake during frying
 - increases in weight of rice and pasta on cooking
- Reliability – Is there any evidence of reliability studies. If 2 people key in the same menus/recipes do they get the same results?
- Validity – Is there any evidence of validity studies against gold standard compositional packages like Compeat?
- What sort of assumptions does the programme make?