Chapter 5: Evaluation of the prototype web site

5.1 Introduction

The necessity for the evaluation of web sites becomes increasingly important as more information becomes available on the web (Alessi & Trollip, 1991:384; Harris, 1997:1; Hawkins, 1999:1; Nicholas et al., 1999:144; Petersen, 1999:1; Rettig & LaGuardia, 1999:1-3). Information on the web is available in a wide range of formats, covering many subjects and topics, but varying considerably in quality (Crosby & Stelovsky, 1995:147; Hawkins, 1999:1; Nicholas et al., 1999:144; Rettig & LaGuardia, 1999:1).

After the completion of any web site , it is important for the developer to know to what extent the aims or objectives set at the beginning has been achieved (Alessi & Trollip, 1991:384). Evaluation is also essential to ensure that the information included is accurate and that users can use the site effectively (Alessi & Trollip, 1991:384; Hawkins, 1999:1-2).Evaluation should take place throughout the planning, development and revision stages (Hannafin & Peck, 1988:295; Witt & Wager, 1994:23). During the initial development stages of a web site (the planning phase) a set of potential actions and technologies should be identified and the best method for implementation selected (Trochim, 1999:1). Only after evaluation can it be decided if the best options were chosen.

The generic aim of evaluation is to provide "useful feedback" to a variety of audiences, including clients, administrators, staff, and other relevant parties. Feedback can be important in the evaluation process. The main aim of evaluation should be to influence decision-making or policy formulation, through the provision of empirically-driven feedback (Petersen, 1999:1; Rettig & LaGuardia, 1999:1; Trochim, 1999:1). The correct questions should be asked as well as careful observations made (Alessi &

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

168

Trollip, 1991:384; Collis & Verwijs, 1995a: 12-14; Hawkins, 1999:1; Petersen, 1999:1-2; Vaughan, 1994:24; Witt & Wager, 1994:23).

The first phases of the evaluation of FARMPRO were discussed in depth in a previous chapter. This chapter deals with the final evaluation of the prototype web site, the evaluation process and the results of the evaluation. Changes and improvements were made continuously as problems became apparent and completed after phase three. The final version of FARMPRO was then also put on a CD-ROM.

5.2   What is evaluation?

A very simplistic definition describes evaluation as the systematic assessment of the worth or merit of some object (Rettig & LaGuardia, 1988:51-52; Trochim, 1999:1). A definition that emphasizing the information-processing and feedback functions, describes evaluation as the systematic acquisition and assessment of information to provide useful feedback about some object (Trochim, 1999:1). This definition emphasizes the acquisition and assessment of information, rather than the assessment of worth or merit. All evaluation involves collecting and sifting through data, making judgements about the validity of the information and of inferences derived from it, whether or not it is an assessment of worth or merit (Trochim, 1999:1).

The following steps should be followed in the evaluation process:
- problem formulation;
- conceptualization of the major alternatives;
- detailing of these alternatives and their potential implications;
- evaluation of the alternatives;
- selection of the best alternative; and
- implementation of the selected alternative (Trochim, 1999:1).

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

169

After evaluation has been completed, an evaluation report should be compiled, including the following:

- the major objectives, aims and hypotheses the web site or technology wants to achieve. This is usually part of the planning phase;

- the conceptualization and operationalization of the major components of the evaluation: the web site, the participants, and the setting;

- the design of the evaluation;

- a detailed plan of how components should be evaluated;

- an analysis of the information received from evaluators (both qualitative and quantitative); and

- suggestions on the utilization of the evaluation results (Collis & Verwijs, 1995a: 12-14; Hannafin & Peck, 1988:295; Trochim, 1999:1).

5.3 Evaluation strategies

Evaluation strategies are the broad, overreaching perspectives on evaluation. The four major groups of evaluation strategies are scientific-experimental, management-oriented systems, qualitative/anthropological and participant-oriented models.

- ***Scientific-experimental models:***

  Models of this kind are mostly historically dominant evaluation strategies. It concentrates on the desirability of impartiality, accuracy, objectivity and the validity of the information generated. Included are experimental and quasi-experimental designs; objectives-based research; econometrically-oriented perspectives, which includes cost-effectiveness and cost-benefit analysis; and theory-driven evaluation (Trochim, 1999:1).

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

170

- ***Management-oriented systems models:***

This type of model emphasize comprehensiveness in evaluation, placing evaluation within a larger framework of organizational activities. (Hawkins, 1999:1; Trochim, 1999:1). Examples are:

- Programme Evaluation and Review Technique (PERT);
- Critical Path Method (CPM);
- Logical Framework or "Logframe" model developed at the US Agency for International Development;
- Units for Treatments and Observing Observations for Settings model (UTOS);
- Context Input Process Product model (CIPP); and
- Credibility, Accuracy, Reasonableness, Support checklist (CARS) (Hawkins, 1999:1; Trochim, 1999:1).

- ***Qualitative/anthropological models.***

These models emphasize the importance of observation when there is a need to retain the phenomenological quality of the evaluation context. The value of subjective human interpretation in the evaluation process is recognized. It is naturalistic or "Fourth Generation" evaluation and belongs to qualitative schools with critical theory and art criticism approaches (Trochim, 1999:1).

- ***Participant-oriented models.***

These models emphasize the central importance of the evaluation participants, especially clients and users of the web site or technology. Examples are client-centred and stakeholder approaches (Trochim, 1999:1).

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

171

The choice of a suitable evaluation methodology is complex. Evaluation often consists of aspects of all the above strategies to ensure that all aspects are evaluated. For the purpose of this study the models of scientific-experimental and management-orientated systems could not be used, but a combination of qualitative/anthropological and participant-oriented models was regarded as suitable. The reasons are that the qualitative model focusses on observation and naturalistic evaluation, while the participant-oriented model recognises the need for input from clients and users.

5.4   Types of evaluation

There are different types of evaluation, depending on the object being evaluated and the purpose of the evaluation. Both formal and informal evaluation can be used. Informal evaluation can include observation, simple questionnaires and interviews. It allows for the collection of anecdotal data. Formal evaluation requires extensive training in design and statistical data methodologies and implies the collection of empirical data. The choice of a suitable method depends on each situation, and has to take the need and time available for formal evaluation into account (Hannafin & Peck, 1988:299-300). For the purposes of this study only informal evaluation methods were used.

A further distinction can be also be made between formative and summative evaluation (Hannafin and Peck, 1988:300-301; Trochim, 1999:1). Formative evaluation was used throughout the design and development of this web site. Summative evaluation was used during the final evaluation of the web site (Hannafin & Peck, 1988:301).

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

172

5.4.1 Formative evaluation

Formative evaluation strengthens or improves the object being evaluated by examining:

- the delivery of the web site or technology; and
- the quality of its implementation (Hannafin & Peck, 1988:301; Trochim, 1999:1).

Formative evaluation is also a continuous evaluation process. It includes several types of evaluation:

- *Needs assessment:*

  To determine who needs the web site, how great the need is, and what might work to meet the need.

- *Evaluability assessment:*

  To determine whether an evaluation is feasible and how stakeholders can help shape its usefulness.

- *Structured conceptualization:*

  To help stakeholders define the web site or technology, the target population, and the possible outcomes.

- *Implementation evaluation:*

  To monitor the fidelity of the web site or technology delivery.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

173

- ***Process evaluation investigations:***

  To establish the process of delivering the web site or technology, including alternative delivery procedures (Trochim, 1999:1).

Formative evaluation can be used in three ways during the development process, namely:

- ***One-to-one evaluation:***

  - done during the initial design;
  - consisting of informal evaluation; and
  - aimed at identifying problems (Hannafin & Peck, 1988:301-302).

- ***Small-group evaluation:***

  - done during the final phase of the design process**;**
  - determining acceptability and effectiveness;
  - taking the form of interviews, observation and records of an anecdotal nature;
  - consisting of a quality review (language, grammar, and content); and
  - using information collected during evaluation (Alessi & Trollip, 1991:365; Hannafin & Peck, 1988:302)**.**

- ***Field test evaluation***:

  - testing of the product in the actual setting (pilot testing);
  - evaluating the final draft;
  - relying mainly on informal and some formal evaluation techniques;

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

174

- consisting of collecting data; and

- followed by revision (Alessi & Trollip, 1991:378-380; Hannafin & Peck, 1988:302).

During field-testing evaluation, it is necessary to consider the ultimate user of the web site (ranging from novices to experts) to ensure that the requirements are met (Alessi & Trollip, 1991:384). It is also important to clarify the fact that the web site and not the performance of the users are evaluated (Alessi & Trollip, 1991:384; Witt & Wager, 1994:23).

5.4.2   Summative evaluation

Summative evaluation examines effects or outcomes of an object by:
- describing what happens subsequent to delivery;
- assessing whether the object can be said to have caused the outcome envisaged; and
- estimating the relative costs associated with the object. (Hannafin & Peck, 1988:301; Trochim, 1999:1).

Summative evaluation can be subdivided into the following areas:

- *Outcome evaluation*
  Investigating whether the web site or technology caused demonstrable effects on specifically defined target outcomes.

- *Impact evaluation*
  Assessing the overall or net effects (intended or unintended) of the object or technology as a whole.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

175

- ***Cost-effectiveness and cost-benefit analysis***

  Addressing questions of efficiency by standardizing outcomes in terms of their costs and values.

- ***Secondary analysis***

  Reexamining existing data to address new questions or use methods not previously employed.

- ***Meta-analysis:***

  Integrating the outcome estimates from multiple studies to arrive at an overall or summary judgement on an evaluation question (Trochim, 1999:1).

5.5 Evaluation questions and methodologies

The questions used in the evaluation process can be selected within the framework of both formative and summative evaluation (Hannafin & Peck, 1988:301; Trochim, 1999:1). Tools to evaluate the usability of multimedia web sites are not yet available (Petersen, 1999:1). It is accepted practice to use a combination of evaluation methodologies to evaluate multimedia. The major questions and methods of evaluation are the following (table 5.1):

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

176

Table 5.1 Questions and methodologies (Hannafin & Peck, 1988:301-310; Hawkins, 1999:1; Trochim, 1999:1)

Question	Method
Formative evaluation	
What is the definition and scope of the problem or issue, or what is the question?	Formulating and conceptualizing methods might be used including brainstorming, focus groups, nominal group techniques, stakeholder analysis, lateral thinking, input-output analysis, and concept mapping.
Where is the problem and how big or serious is it?	Needs assessment which can include: analysis of existing data sources, the use of sample surveys, interviews of constituent populations, qualitative research, expert testimony, and focus groups.
How should the web site or technology be delivered to address the problem?	Some of the methods already listed can also be used, and also simulation techniques, or multivariate methods like multi-attribute utility theory, decision-making methods; and project planning and implementation methods like flow charting, PERT/CPM, and project scheduling.
How well is the web site or technology delivered?	Qualitative and quantitative monitoring techniques, use of management information systems, and implementation assessment.
Summative evaluation	
What type of evaluation is feasible?	Evaluability assessment used, as well as standard approaches for selecting an appropriate evaluation design.
What was the effectiveness of the web site or technology?	Observational and correlational methods for demonstrating whether desired effects occurred, and quasi-experimental and experimental designs for determining whether observed effects can reasonably be attributed to the intervention and not to other sources.
What is the net impact of the web site?	Econometric methods for assessing cost effectiveness and cost/benefits would apply here, along with qualitative methods that enable summarization of the full range of intended and unintended impacts.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

177

5.6 Design of a questionnaire

Numerous evaluation sources are available that can be used as a guideline to compile a questionnaire. (Children's, 1995:1-4; CKSD, 1999:1-5; Collis & Verwijs, 1995a: 12-14; Evaluating instructional, 1998:1; Evaluation methodologies, 1999:1-3; Five, 1998:13; Hawkins, 1999:1-8; Instructional, 1998:1-6; Kerr, 1998:1-3; Petersen, 1999:1-2; Professional, 1998:1-2; Reeves, 1993: 1-15; Smith, 1999:1-4; Software evaluation procedure, 1998:1-2; Software evaluation criteria, 1998:1; Vaughan, 1994:24; Witt & Wager, 1994:23).

Questionnaires are usually paper-based and are completed by the user or respondent (Kunz et al., 1992:9; Prasad, 1987:1-15; Trochim, 1999:1-2). During the design of the questionnaire it is important to ensure that all possible alternatives are covered, that it is of reasonable length, that the wording is impartial and that is easy to complete (Trochim, 1999:1-3). The questionnaire can use open-ended questions where users are allowed to give unstructured responses.

It is important to ensure that questions included in a questionnaire address the issues at hand and do not deal with generalities (Kunz et al., 1992:9; Prasad, 1987:1-15; Trochim, 1999:1-2). The questions included should:

- be necessary and useful;
- focus on one aspect at a time only;
- be understood by the user;
- be within the experience of the user;
- be specific when required;
- be general when needed;
- not be biased or loaded to force the user to make a certain decision;
- allow the user to respond truthfully; and
- not be misunderstood by the user (Trochim, 1999:1-4).

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

178

5.7 Evaluation of the prototype web site

During the development of the prototype web site, both formative and summative evaluation was done. The first three phases was evaluated using formative evaluation. After the changes suggested during these phases were made, the final prototype was evaluated by using summative evaluation.

The initial evaluations were part of the development phase. During this phase the web site was evaluated twice, using group evaluation done by classmates, as well as one-to-one evaluation by a staff member of Agrelek. After the development phase, including two rounds of formative evaluation, the web site was evaluated by summative evaluation.

Because the evaluation of the web site is a very important part of the design process, it should be evaluated by as wide a spectrum of users as possible, especially those forming part of the target group. Dairy farmers should be the most important evaluators. To reach them a listserver (PC Internet of *Landbouweekblad)* was used. An initial message was posted asking interested persons to indicate their interest by e-mailing their addresses to the developer of the web site. Upon receipt of the addresses, the questionnaire with the URL of the web site was e-mailed to them. They were asked to return the questionnaire by a certain date. Most of the respondents replied before this date. The evaluators who did not return their questionnaires were again e-mailed with the URL and a request to return their responses as soon as possible. Most respondents eventually returned their questionnaires. Four farmers did not return their questionnaires, but a total of ten farmers with dairy interests replied.

Subject matter specialists were also asked to evaluate the web site. These specialists consisted of two distinct groups: food scientists with a dairy background and agricultural engineers. Five food scientists and five engineers evaluated the web site.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

179

To ensure that the web site can also be used by the novice web user it was evaluated by novices with no dairy farming or engineering background. A total of five novices evaluated the web site.

All the evaluators were given exactly the same questionnaire and the same time limits were set. A total of twenty-five users evaluated the web site.

The questionnaire for the evaluation of this web site was compiled using the guidelines mentioned in 5.6. After further refinement the questionnaire in figure 5.1 was compiled. Only eighteen (18) questions were included. Questions were limited because users had to view and evaluate the web site on-line. To ensure that not too much time is spent on answering questions, the questionnaire was kept simple and straightforward. It also ensures that evaluators do not loose interest and fail to complete the questionnaire.

A general classification of aspects, similar to the one used in the design (previous chapter) was used. This classification includes the following categories:

- ***Questions about content*** (text, screen);
- ***Questions about navigation*** (navigation)**;**
- ***Questions about ease of use*** (navigation; screen); and
- ***Questions about overall impression*** (text, screen)**.**

An additional section for general comments was added to allow users to add comments not provided for in the questions themselves. An example of the final questionnaire is included in figure 5.1.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

180

Figure 5.1 Questionnaire sent to evaluators

Questionnaire

Thank you for your willingness to participate! Please answer the following questions as fully as possible. Feel free to add any general comments at the end. Remember your input is important to us and should most definitely be taken into consideration when making changes to the web site. Return your comments to helenebl@global.co.za by 13 October 1999.

Content:

Is the content factual, correct and current?

Is the web site content appropriate for the intended users?

Are the terms defined adequately?

Is sufficient information supplied?

Is the presentation of content consistent?

Navigation:

Does the web site allow you to move backwards, forwards and sideways?

Is the navigation bar easy to use?

Is the contents of the navigation bar sufficient?

Ease of use:

Is the information presented in manageable segments?

Are the instructions clear?

Is there interaction between user, computer and web site?

Did you experience any technical difficulties?

Is the web site easy to use?

Is the display clear and easy to read?

Overall impression

Graphics?

Colours?

Font?

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

5.8 Results of evaluation

Responses were listed, grouped and integrated. Comments of an editorial nature (eg. spelling and language errors) were not listed and were corrected.

5.8.1 Questions related to content

5.8.1.1 Is the content factual, correct and current?

- The majority agreed that the content was factual, correct and current.

Comments:

- No sketches for small scale processing were included.

5.8.1.2 Is the web site content appropriate for the intended users?

- The majority indicated that the content was appropriate for farmers who are interested in making yoghurt.

Comments:

- Energy diagrams might confuse users.

5.8.1.3 Are the terms defined adequately?

- The majority agreed that the terms were adequately defined.

Comments:

- Some of the terms should be explained for novices.
- Terms used in the Quick tour were not always easy to understand.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

182

5.8.1.4   *Is sufficient information supplied?*

- The majority agreed that sufficient understandable information by farmers was supplied.

Comments:

- Although a reference to scale (small, medium en large) appeared on the right side of the screen these were not active links.

- Including some recipes for yoghurt may be useful.

5.8.1.5   *Is the presentation of content consistent?*

- The majority agreed that the presentation was consistent.

Comments:

- The first few screens and Quick tour screens were not the same as the rest of the screens.

5.8.2   Questions related to navigation

5.8.2.1   *Does the web site allow you to move backwards, forwards and sideways*

- The majority indicated that it was easy to move backwards, forwards and sideways.

Comments:

- To move backwards the back button had to be used.

- Problems were experienced with the first screens of the web site. It only showed a white screen with a few buttons at the left and right side of the screen (was the result of browser incompatibilities).

- No movement backwards or sideways was possible on the Quick tour .

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

183

5.8.2.2   Is the navigation bar easy to use?

• The majority of the evaluators found the navigation bar easy to use.

Comments:

• There was no navigation bar in the Quick tour.

5.8.2.3   Is the contents of the navigation bar sufficient ?

• The majority indicated that the contents of the navigation bar was sufficient.

Comments:

• A user might not want to work through the whole Quick tour, which was in a linear format.

5.8.3   Questions related to ease of use

5.8.3.1   Is the information presented in manageable segments?

• The majority felt that the information was presented in manageable, easy to read and understandable segments.

Comments:

• The segments of information was too small and took a long time to print.

5.8.3.2   Are the instructions clear?

• The majority agreed that the instructions were clear and concise.

Comments:

• Some respondents had to return to the first screens to read through the instructions which they had disregarded at the beginning.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

184

- More pop-up messages (ALT codes) and pull-down menus would be helpful.

5.8.3.3 *Is there interaction between user, computer and web site?*

- All respondents indicated that interaction was possible. When certain choices were made, the web site returned required information.

Comments

- No specific comments for change or improvement was made.

5.8.3.4 *Did you experience any technical difficulties?*

- The majority experienced no technical difficulties.

Comments:

- Some users reported a "time-out" message while downloading some screens.

5.8.3.5 *Is the web site easy to use?*

- The majority found the web site easy to use.

Comments:

- Some evaluators found the web site not so easy to use, but after reading the instructions on "how to use this site" at the very beginning of the site this problem was eliminated.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

185

5.8.3.6   Is the display clear and easy to read?

- The majority users found the display clear and easy to read.

Comments:

- Some complained that the font of the text was too small.

- Empty spaces were confusing.

- The white background made it easy to read the text.

- Pop-up messages (ALT codes) did not appear on the active spots on all the sketches. The only pop-up message visible was the name of the complete sketch.

- Some could not see the pop-up messages (ALT codes) for arrows and other signs at all.

5.8.4   Questions relating to overall impression

5.8.4.1   Graphics?

- The majority had no negative comments on the graphics.

Comments:

- Problems were experienced where graphics were not visible, and a time-out message was given.

- The graphics used for "home to Quick tour" was not regarded as suitable.

5.8.4.2   Colours?

- The majority had no problem with the colours.

Comments:

- The light green colour used to indicate small scale processing was not always very easy to read.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

186

- The contrast between active links and visited links made it clear to the user which information had already been accessed.

5.8.4.3   Font?

- The majority found the font acceptable.

Comments:

- Some found it too small to read with ease.

- More than one font was visible in the same paragraph.

5.8.4.4   General comments (verbatim):

- "Much information was provided, which must have taken hours to compile."

- "It was an impressive and valuable web site, rich in balanced and valuable information."

- "Fantastic, tempts the tastebuds to read more."

- "We, the farmers, need this type of innovation."

- "Good, excellent work."

- "Web site reads easily and was easy to use. It was relatively easy to master the contents and it covers an extensive range of subjects."

- "Very impressive, well done."

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

187

5.8.5 Some general comments dealing with the site

5.8.5.1 *Screen*

Comments:

- The whole flow diagram should be visible on one screen without needing to scroll.

5.8.5.2 *Navigation*

Comments:

- Too many screens preceded the screen where a choice between the Quick tour and the Complete picture can be made. Evaluators of Eskom said that they preferred that a maximum of 5 clicks should bring the user to the source of information, otherwise he would loose interest.
- The home page should default to a screen other than the one in use on the web site at the time of the evaluation. It took too long to work through the first 4 screens if a user had to return to the home page every time.
- The date of the web site and name of the author should be included.
- The small to medium flow diagrams had links to medium to large scale sketches.
- It took too long to get to essential information.
- Energy requirements for each type of yoghurt should be linked to the first screen of specific yoghurt type, and not be a separate part of the web site.
- The engineer responsible for the energy requirement information, felt that the user could be confused by the inclusion of links to both the summary and diagram on the first screen of the energy requirements. He suggested the removal of the link to the summary on the first screen and the inclusion on the diagram screen of the link to the summary.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

188

5.8.5.3   Content

Comments:

- The evaluators of Agrelek felt that the names and addresses of suppliers should also list the equipment they supply, to correspond to usage in the existing Agrelek database.

- At "Other Sites", a brief description should be included. The user need not visit them all but should be able to narrow the search.

- The "selection of size of processing" was mentioned only at one point but was not repeated.

- More sites were suggested for inclusion under "Other Sites".

- A list of frequently asked questions would be an advantage.

5.9 Interpretation of results and making changes to the web site

In this section responses will be interpreted, and determined which of them could be incorporated in the final version of the web site.

In the interpretation of the responses to the questionnaires, certain trends could be identified. These can be divided into four broad categories, which were:

- text design;
- screen design;
- navigation; and
- specific subject contents.

The interpretation of the results should be given within the context of these categories. The first three categories are similar to those discussed in the previous chapter on design.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

189

5.9.1 Text design

5.9.1.1 Colour used for small scale processing

Some evaluators felt that the colour used for the small scale processing was difficult to read. The colour was changed to olive green to resolve this problem (figure 5.2). The initial colour was a bright green, but most of the evaluators claimed at that stage that it could not be read easily. Most of them commented on the colour, showing that bright colours draw attention.

Some evaluators mentioned that the indication of small, medium and large scale processing on some screens were not active links. It was initially planned to distinguish the sizes of processing by using different colours. As a result of these comments links were made to the specific scale of processing screen for small, medium or large scale (figure 5.2).

Some evaluators indicated that they could not find a description of how to determine the size of production. To provide for this links were provided on screens:

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

190

Figure 5.2 Small, medium and large scale processing links

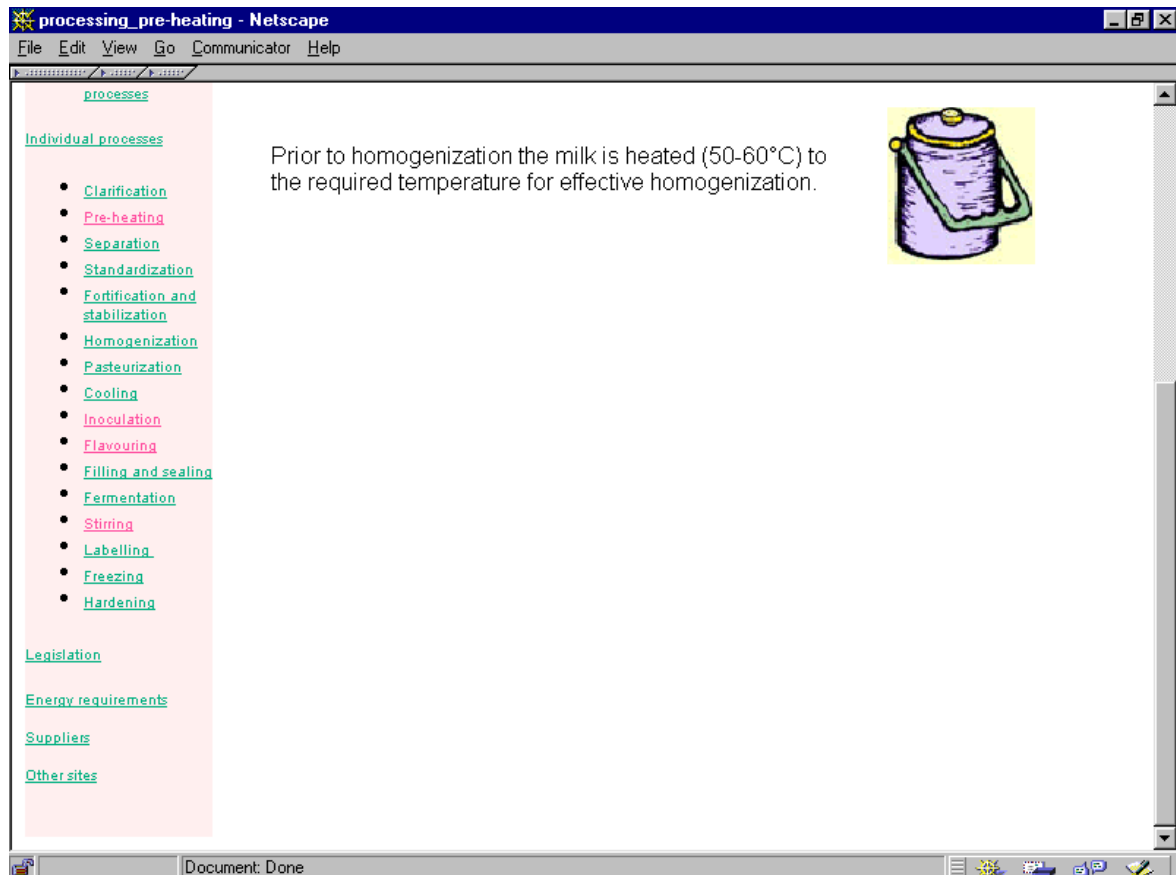· Scale of
processing:

small
medium
large

5.9.1.2   *Typographical errors*

Typographical errors such as spelling mistakes and splitting of text lines were corrected.

5.9.1.3   *Blank spaces*

Some evaluators mentioned that blank spaces on some screens looked strange. These spaces in the central text column were the result of the length of the navigation bar on the left (figure 5.3). The navigation bars was of a standard length throughout the web site. It could therefore not be changed, because it appeared on every screen.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

191

Figure 5.3 Example of blank spaces on pre-heating screen

5.9.1.4 Font size

Problems experienced with the font size and the change of font within a paragraph were corrected by the inclusion of the <FONTFACE/ > HTML command on all the screens where embedded *Windows* and *Macintosh* fonts were specified (figure 5.4). The web site should then default to these values. Only when not available on the user's system, the default font of the browser should be used.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

192

Figure 5.4 HTML-codes of specified fonts

```
<font face="Arial, Helvetica, sans-serif, Verdana, Geneva">
</font>
```
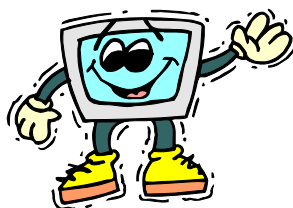
5.9.2   Screen design

5.9.2.1   "Home to Quick tour" icon

One evaluator felt that the use of the "home to Quick tour" icon was inappropriate. This specific icon was used to draw attention and reduce possible anxiety by the user when searching for the home page. It was agreed that it did not really fit in with the rest of the site concept, where mostly New Age symbols and icons were used. The image was changed to a New Age symbol to harmonize with the rest of the site (figure 5.5).

Figure 5.5 Old and new "home to Quick tour" icon

Old   **New**

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

193

5.9.2.2 "Time-out" messages

Some evaluators experienced problems with a "time-out" message given by their computers. This could be attributed to either the server or the Internet connection. With this in mind, the site was duplicated on another web site (http://users2.50megs.helene) away from the Hagar server at the University of Pretoria (http://hagar.up.ac.za/catts/learner/game/1999/helene/yoghurt/index.htm). Evaluators were given both URLs or web addresses to ensure the availability of the site for evaluation at any given moment.

5.9.2.3 Date of production

The date of production and the name of the author was included in the site (figure 5.6).

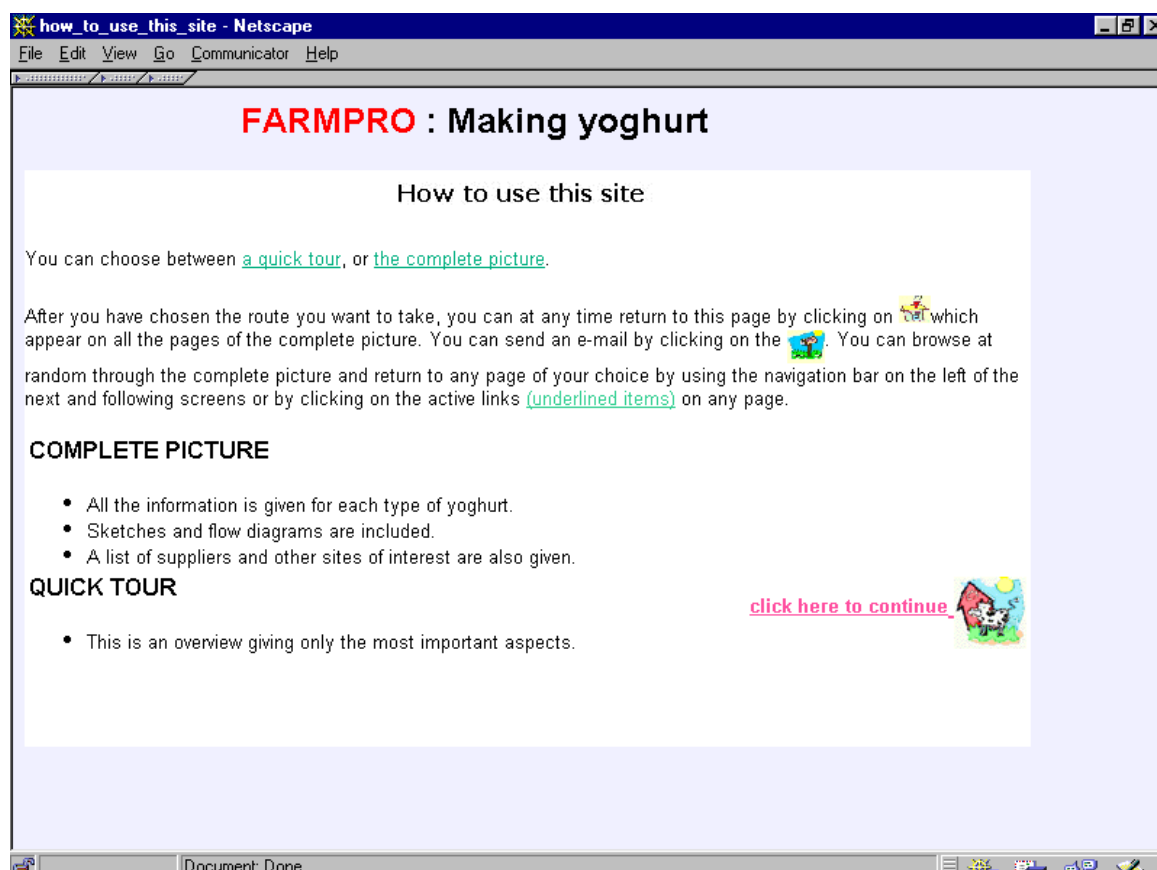**Figure 5.6 Date of production and name of author**

Comp   lete picture Quick tour

© 1999
Helene
Coetzee

©1999
Helene
Coetzee

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

194

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

195

5.9.3   Navigation

5.9.3.1   "How to use this site" screen

It was decided that the home page of the site should not default to the index screen, but rather to the "how to use this site" screen. This screen contained the instructions on the use of the site, as well as a brief description of the alternatives (Quick tour or Complete picture) (figure 5.7).

Figure 5.7 "How to use this site" screen

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

196

Comments by some of the evaluators made it clear that no time was spent to read the "how to use this site" screen was not read at all. This screen contained basic information about the site, its structure and ways in which the user could communicate with the author. A brief description of both the Complete picture and the Quick tour appeared on this screen. After they were referred back to the "how to use this site" screen, no further problems were experienced.
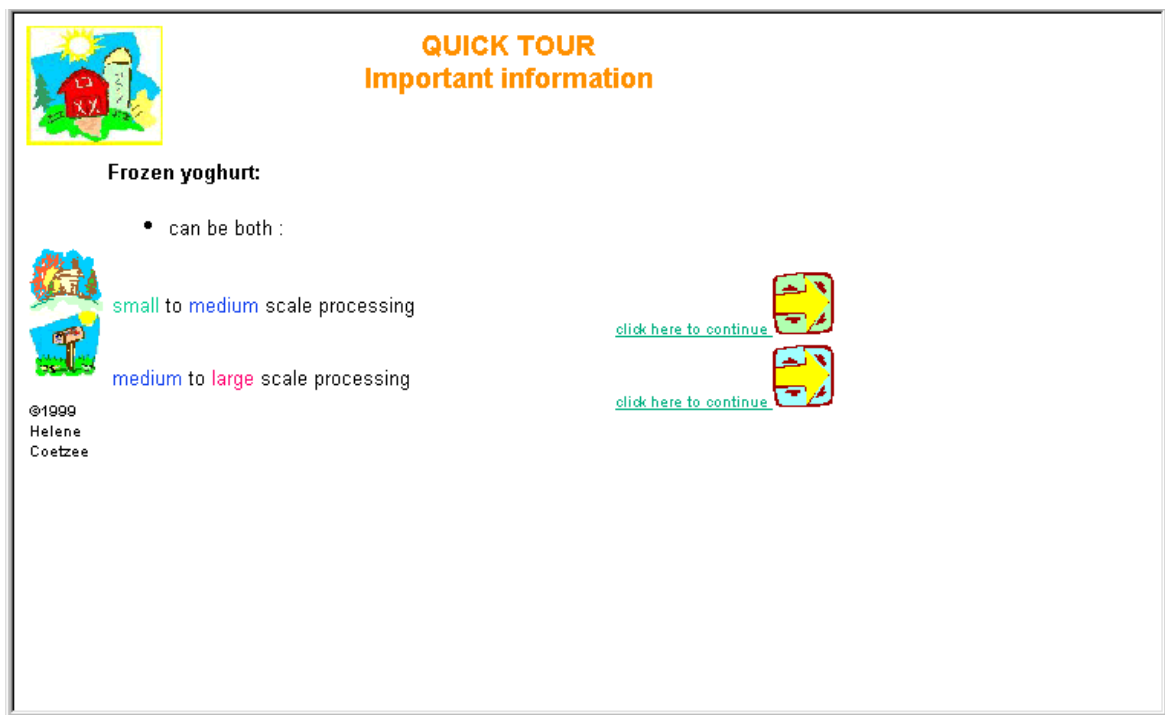
5.9.3.2   Introduction screens

The first few screens of the web site served as an introduction. The user then had to select one of two options, the Quick tour or the Complete picture. The display then changed to two different designs. The Quick tour screen had the title at the top and the text in a central block with the next button on the right-hand side of the screen. An "e-mail" icon and "home to Quick tour" icon appeared on the left-hand side (figure 5.8).

Figure 5.8 Screen design of Quick tour

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

197

The screen of the Complete picture was much more complicated. It has the title of the screen at the top, a navigation bar on the left of the screen, the text in the central part and an "e-mail" icon and "home" icon on the right side. Other graphics also appeared on the right side of the screen (figure 5.9).

Figure 5.9   **Screen design of Complete picture**

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

198

5.9.3.3   Index screen

On the initial web site an index screen with four buttons on the left and show-hide layers containing information relevant to the button were used. These layers became
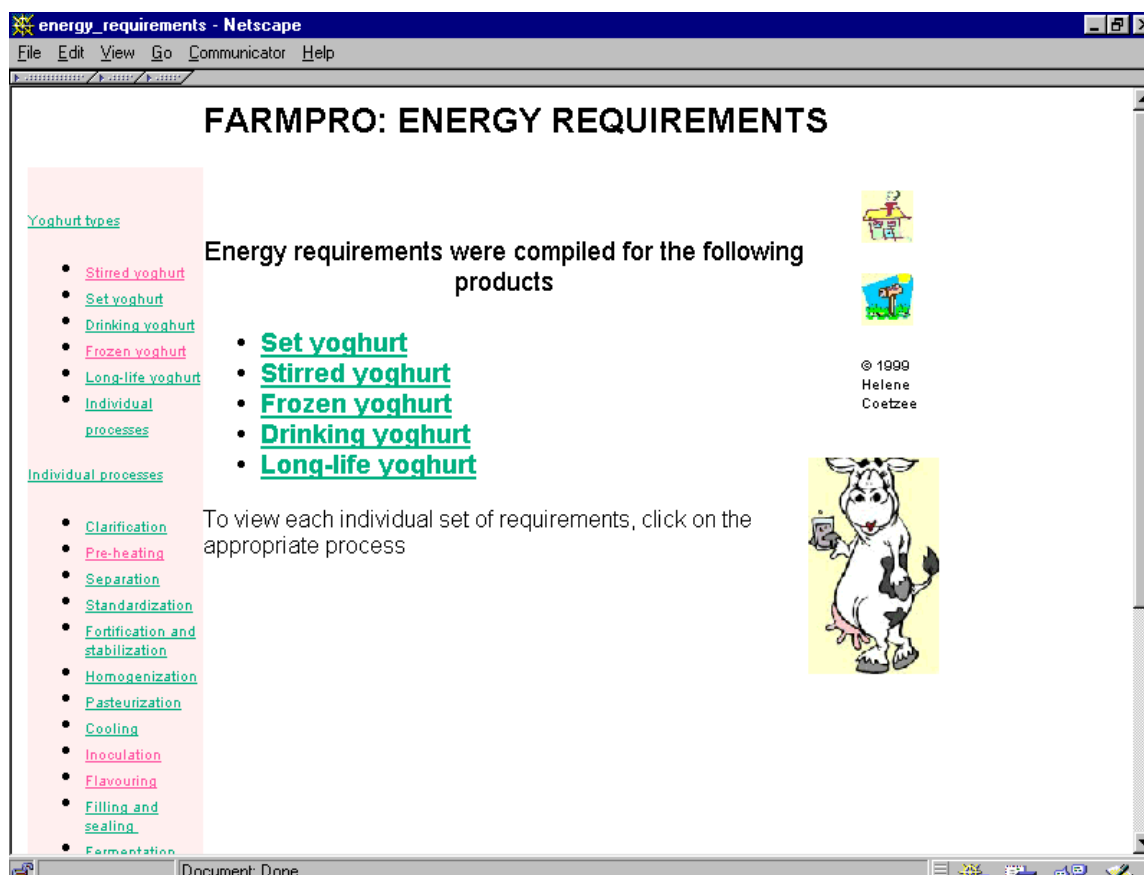
visible by moving the cursor across the button. Soon after posting the questionnaire, complaints were received that nothing was visible on that screen. On enquiry, the evaluators reported that they were using *Internet Explorer* which did not support the use of this facility. The screen had to be reconstructed with additional screens containing the information from the layers. These were then posted on both sites, and no further complaints were received.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

199

5.9.3.4   Time and number of clicks needed to get to essential information

Some evaluators complained about the time and number of clicks it took to get to essential information. One way of addressing this issue was the inclusion of HTML codes which automatically change from one screen to the next after a set time (5 seconds)(figure 5.10). This was implemented only for the first two screens where no essential information was included. When the user wanted to read the contents of a screen, a button was used as a link to the next screen. This puts the user in charge of the pace at which the information was accessed to read.

Figure 5.10   HTML codes for automatic change of screens

```
<html>
<head>
<title>indexbrowser4</title>
<meta http-equiv="refresh" content="5;URL=why_this_programme.htm">
</head>
```

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

200

5.9.3.5   Browser capabilities

Problems with the pop-up messages (ALT codes) of the icons, symbols, pictures and active spots clearly showed the difference between the various browsers. Evaluators with *Internet Explorer* could not see the pop-up messages (ALT codes) of the active spots on the diagrams. The only message readable was the title (ALT codes) of the diagram. The pop-up messages for symbols and icons were also not always visible. It was deduced that the web site was best viewed in *Netscape Navigator.* This suggestion should be made on the label of the CD-ROM.

The problems experienced by some users highlight issues raised earlier in the research, namely that the design of any web site had to take the most basic browser capabilities into account. It is important to ensure that the web site is "viewable" by as large a group of users as possible.   For this reason the newest "cutting edge technology" was not used. The screens consisted of tables with all the information, which should be viewable by most browsers and displayed exactly the same in most browsers. Frames and layers may differ in size and placement on the screen when different browsers are used.

5.9.3.6   Use of frames

Some users suggested the use of frames to enable the provision of a static screen which links to another screen displayed in another frame. It was decided not to use frames in the design of this web site, again based on the differences in browsers. Not all browsers display frames in the same way. Frames should be avoided as far as possible in web sites.
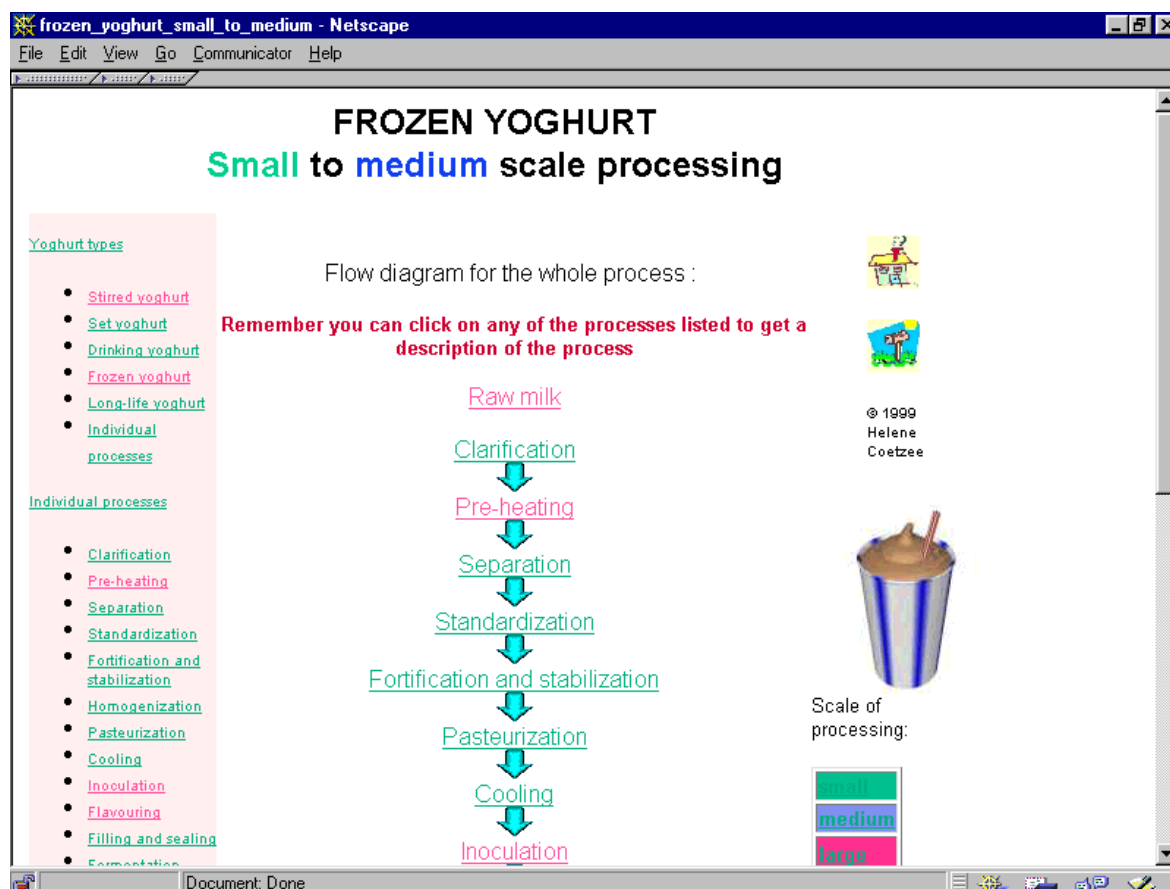
Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

201

5.9.4   Specific subject contents

5.9.4.1   Absence of small scale processing equipment and flow diagrams

Some evaluators commented on the absence of small scale processing equipment and flow diagrams. Where sketches and diagrams were available, they were added. The flow diagram used in the Complete picture was too big for one screen, and an attempt to change the diagram to something similar to the one used in the Quick tour was not successful. The flow diagram could not fit in on one screen and the user would have to scroll down to access all the information. It was then decided to retain it with minimal spaces between the text and arrows (figure.5.11)

Suggestions made by evaluators that the links of the flow diagrams on small to medium scale processing should be removed, were implemented in the final version. These links were now available as an alternative at the bottom of the flow diagram.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

202

Figure 5.11   Flow diagram for frozen yoghurt

5.9.4.2   *Wording of definitions*

It was suggested that the wording of the definitions was too technical. All the
information contained in this web site was taken from the existing Agrelek database on
yoghurt and cannot be simplified. The definitions were general descriptions of the
processes. In the Quick tour only this definition was given. In the Complete picture
part of the web site, these definitions as well as a description of the process were
given, with special reference to the scale of processing (small, medium or large).

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

203

5.9.4.3   Quick tour

For reasons explained earlier, the Quick tour was in a linear format, where the user had to work through the sequence of screens from start to finish. No additional information was given.   No navigation bar appeared in this part of the web site and it is not interactive. The Complete picture on the other hand was fully interactive and the users could decide where to go, at their own pace.

5.9.4.4   Energy requirements

The engineer responsible for the calculation of energy requirements suggested that to avoid confusion, the link to the energy diagram should be removed from the first screen. The first screen should link to the energy summary only. Only then should the user be able to access the diagram. It was also suggested that the user should use the summary in consultation with the local Agrelek adviser where possible. It was suggested that the first screen of each type of yoghurt should contain a link to the energy diagram of the specific type of yoghurt.

5.9.4.5   Printing

Some evaluators had problems when trying to print a specific screen. To resolve this the complete process for each type of yoghurt was included as a printable version. This was similar to the contents of the Agrelek database. These files were included as Rich Text Format (RTF) files, printable on most word processing programmes.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

204

5.9.4.6 Recipes

To enhance the web site further a number of recipes were also included as well as instructions for the preparation of yoghurt from soya beans.

5.9.4.7 Suppliers

Some evaluators expressed concern that they would have to phone all the suppliers to get information on equipment. To avoid this, it was suggested that the user can either contact their local Agrelek adviser for suppliers in their area, or Louis Lagrange of Agrelek in Glen for this information. The wording on the screen was consequently changed to indicate this (figure 5.12).

Figure 5.12   Last of suppliers

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

205

5.9.4.8 *Amount of information*

A complaint regarding the amount of information supplied and the time it takes to reach specific information should be seen against the background of users who are ignorant about using the World Wide Web as an education tool. Experience in using web sites, should enable users to overcome this obstacle. The nature of the web site makes it impossible to avoid supplying complete information.

5.9.4.9 *Other suggestions about additions to the web site*

It was also suggested that more recipes, a section dealing with frequently asked questions, tests, more "other sites" and pull down menus should be included.

As can be seen from the above discussion, attention was given to all comments and suggestions received from evaluators and changes and corrections made as far as possible.

5.10 Summary

Evaluation, as stated earlier, was an important and inherent part of the development process. Evaluation served as a feedback mechanism before a final product was made available. A combination of qualitative-anthropological and participant-oriented models was used for the evaluation of this web site. A combination of formative and summative evaluation was used. One-to-one evaluation, small-group evaluation and field test evaluation was incorporated. A questionnaire was drawn up and completed by evaluators.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

206

The evaluation of this web site was done by farmers, engineers, food scientists and novices. The evaluation took place over a period of a few weeks. Some problems were initially experienced with show-hide layers which were then rectified. The comments and suggestions made by the evaluators ranged from concrete suggestions to suggestions that fell outside the scope of this web site. Interpretation of the results showed that most of the comments were justified. Comments of an unproductive nature were disregarded and were not included. Suggestions made were incorporated in the final web site as far as possible.

Some suggestions were made relating to issues which could only be addressed in future web sites. A few dealt with issues that were not possible to implement in this prototype web site. The evaluation of this web site should result in a better product more streamlined and suitable for use by the intended target group.

Heléne Coetzee - 2000   The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

207