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CONFIDENTIAL REPORT

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CAMPDEN FOOD AND DRINK RESEARCH ASSOCIATION
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TRAINING AND ADVISORY PROGRAMME FOR IMPROVING THE QUALITY AND MARKETABILITY OF FROZEN FOOD

VISIT TO SZEKESFEHERVAR FACTORY, 5-9 OCTOBER 1992
INITIAL REVIEW OF REQUIREMENTS FOR INTRODUCTION OF QUALITY MANAGEMENT SYSTEM

UNIDO Project No. TF/HUN/90/914

CFDRA Project No. 12278

Work Commissioned By
United Nations Industrial Development Organisation

Report By
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November 1992

LB/PF/334

SUMMARY

1. This was the first visit to the Szekesfehervar factory in execution of UNIDO project TF/HUN/90/914. The objectives of this visit were to assess the feasibility of introducing:

   - a quality management system which meets the ISO 9000 standard
   - total quality management (TQM) as a company philosophy.

2. Interviews were conducted with the senior management of the company and a presentation made to the Board of Directors at which initial findings and recommendations for future progress were made known.

3. The conclusions are that:

   - There is no strategic reason why ISO 9000 should not be introduced at Szekesfehervar
   - A major commitment is required by the Board of Directors for these projects to succeed
   - The workload involved with these projects and the hazard analysis critical control points (HACCP) project already initiated will require careful management and a phased approach. The total time scale will be at least 18 months.
   - External help is required to advise the factory management on the most appropriate techniques and to minimise resource requirements. The UNIDO project should provide the means for providing such advice.
   - Detailed conclusions and recommendations are discussed within the text of the report.

4. Szekesfehervar Frozen Foods operates in an extremely difficult business climate prompted by rapid political change, financial difficulties and the need for radical thinking in company business management. However, the company has continued to be successful but equally has recognised the benefits to be gained in the adoption of a quality management system and in promoting maximum involvement of all its employees.

   The success of these projects will place the company in a sound, competitive position for future business within the larger European environment.

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INTRODUCTION

In 1991 a project was undertaken by the Campden Food and Drink Research Association (CFDRA) on behalf of the United Nations Industrial Development Organisation (UNIDO) to examine the status and means for quality improvement of the Hungarian frozen food industry. The project number was TF/HUN/90/905.

It was recognised that in the move of Hungarian industry towards market economy, and with the requirement to attain the quality standards acceptable to the major Western European buying organisations, improvements were required both in attitudes and practices with respect to the safety and quality of products manufactured.

One of the key recommendations of the final report issued jointly by CFDRA and the Hungarian Development and Quality Institute of Frozen Food Industry was that help should be provided in establishing a fully documented quality management system at one of the thirteen Mirelite frozen food factories. The factory at Szekesfehervar was selected for this purpose because of the willingness of the factory senior management to take part, and also because of the relatively sophisticated, albeit traditional, quality control system already in place. It was intended that implementation of quality management at Szekesfehervar should be used as a demonstration project for all the other frozen food producers.

UNIDO has now authorised this follow-up project (TF/HUN/90/914) in order to implement a number of these recommendations. This report describes the preliminary visit to Szekesfehervar (within this new phase of work) by Campden personnel in order to evaluate the current situation and commence planning the means and manner for the introduction of quality management.

As a preliminary exercise, and again in response to recommendations from the earlier project, a party of five Hungarians, including the Deputy Director of the Hungarian Institute, Dr Sebok, and Mr Binder, Technical Manager of Szekesfehervar, attended training courses at CFDRA on the subjects of HACCP and internal auditing. Subsequently, a HACCP team has been formed and has received initial in-house training at Szekesfehervar.

VISIT PROGRAMME

The visit to Szekesfehervar was undertaken by Mr Les Bratt and Mr David Stephens of Campden between the 5th and 9th of October 1992 and essentially comprised three elements:

- Familiarisation tour of the factory.
- In-depth interviews with the senior management team of the factory.
- Presentations to the senior management on the requirements for and the initial findings and recommendations noted with respect to the implementation of ISO 9000 and TQM at Szekesfehervar.

Translation throughout the visit was provided by Dr Sebok of the Hungarian Institute.

THE SZEKESFEHERVAR FACTORY

The Szekesfehervar factory is one of the thirteen frozen food manufacturing companies, originally part of the Mirelite group. These companies were geographically located throughout Hungary with the tasks of preserving agricultural crops within their area as frozen food products and also providing commercial cold storage facilities.

With the ending of centralised governmental control and the move towards market economy, all of these frozen food factories are now seeking investors in order to achieve public limited company status. In the case of Szekesfehervar, the current position is that approximately 70% of the shares of the company (valued in total by Ernst Young at 933m FT) still belong to the State estate agency, which is progressing sales to private investors. The balance of 30% has already been purchased by foreign investors and a number of private shareholders, including the Mirelite trading company, building societies, banks and local authorities. It is anticipated that a number of employees will wish to buy shares of the company, and a recent survey indicated that of 540 employees, 280 would apply once the procedural arrangements have been finalised. Intended applicants must have worked for the company for at least one year.

The turnover of the company is currently 1.5bn FT, yielding a profit before tax of 10%. Tax is levied at 40%. Approximately 40% of turnover is obtained from export sales, principally to Western Europe.

The activities of the company comprise the freezing of agricultural crops, principally peas, sweetcorn, green beans, root crops and berry fruits; the operation of commercial cold storage facilities; and some wholesaling.

Szekesfehervar has recently introduced a frozen food shop at the entrance to the factory site. This provides a complete range of frozen foods, not merely those manufactured within the factory, and is proving very popular with the local people. In particular, bulk packed, cheap items are purchased as a means of domestic economy. The shop is very similar, albeit smaller, to the already successful shop operated by Mirelite in Budapest, and these operations are extremely important in demonstrating the potential growth for the frozen food industry within Hungary. Annual *per capita* consumption has been relatively low at 5.5 kg/year, compared with Austria (the nearest neighbour) at 11.5 kg/year, or most other Western European countries with amounts greater than 15 kg/year.

Management Structure

The company recognises six staff levels from the General Manager down to the manual workers within the factory. The Board of Directors comprises seven members, including non-executive directors, and in addition there is a control body of three people, including one trade union representative. Five people report directly to the General Manager: the Technical Director, Financial Director, Personnel Director, Head of Agricultural Purchasing and Head of the Quality Laboratory. A list of the current senior managers appears at Appendix I to this report.

Staff levels are as follows:

1. President and General Manager

2. Senior directors

3. Other directors, chief engineer

4. Departmental heads

5. Factory supervisors

6. Operators and administrative staff.

It should be noted that in contrast to a Western European company of similar turnover, the work force of 540 employees appears excessive. The adoption of a TQM system within a company requires that all personnel are committed to continually making critical assessment of staffing levels in order to achieve improved efficiency of manufacture. The move for greater efficiency will therefore result in loss of personnel unless volume of sales is increased accordingly. The present personnel policies of the company are based on the previous state rules, which have been suspended but not yet replaced. The company will need to devise a definite policy with which to address these emerging personnel issues.

THE HUNGARIAN SITUATION

Hungarian industry has been operating in a situation of great political change. The State owned, centrally organised companies are being privatised, often with some element of foreign investment, and the management teams within the companies are having to address the needs for additional skills, such as marketing, which were not previously required under the supply-based economy.

Mr Berczeli identified two particular Hungarian problems with relevance to the Szekesfehervar factory:

1. The current state of agriculture with privatisation of the farms causing considerable uncertainty and disruptions to raw material supplies. At the present time the future ownership of land is far from clear. (In the past raw material supplies have been exceptionally stable, with 80% of the supplying companies having supplied Szekesfehervar for 25 years or more.)

2. Finance: Hungary currently has high inflation and high interest rates. The peak interest rate level of 40% is now reducing, however, and it is hoped that interest rates of less than 20% will be attained in 1993. This type of frozen food factory making seasonal products has an inherent problem of cash flow and high interest rates greatly exacerbate this situation.

   In addition to raising finance, additional complications are due to changes, by no means complete, in legislation affecting accounting practices.

WORK PROGRAMME

The programme of investigation was carried out in four phases:

Phase I

Site tour - familiarisation with manufacturing and cold storage facility.

Phase II

Presentation to the Board and senior management group on:

- Project background
- Principles of ISO 9000
- Principles of TQM based on BS 7850.

Phase III

Interviews with key directors and managers.

Phase IV

Presentation of overview findings and conclusions on ISO 9000 and TQM.

Notes:

1. The introduction to both sets of presentations was provided by Mr Bratt and the main text by Mr Stephens.

2. Copies of the acetates used by Mr Stephens in these presentations are attached as Appendix II to this report.

3. The major time element was taken in carrying out the interviews in Phase III.

4. List of Szekesfehervar personnel attending presentations or taking part in interviews appears as Appendix III.

ASSESSMENTS - ISO 9002 AND TQM

Introduction

A three-day assessment in relation to ISO 9002 and the introduction of TQM was carried out at the Szekesfehervar Frozen Foods plant on 6th, 7th and 8th October 1992. This assessment involved detailed discussions with the management team in relation to existing documentation and activities against the requirements of ISO 9002, and the company attitudes towards the whole question of quality and the proposed implementation of TQM.

The following summarises the findings of the assessment and identifies changes required to achieve the Standard.

The section headings of ISO 900 have been used for ease of reference and are shown *in italics.*

Scope

It was agreed that the scope of the Szekesfehervar site would be from the receipt of sales order up to the on-site cold store.

General Comment

In general the system in use was informal, i.e. not documented. The exception was those parts of the organisation which had well-developed computer software systems.

4.1 MANAGEMENT RESPONSIBILITY

QUALITY POLICY - 4.1.1

Requirement:

A statement of company policy, its objectives, and commitment to quality.

Evidence that it is understood, implemented and maintained at all levels.

Present position:

A clearly stated policy does not exist and is therefore not communicated.

The importance of quality and the perceptions of the customers was well understood at management level. Quality was said to be essential to the survival of the business.

Policies should be simple statements of WHAT needs to be achieved. Procedures are more detailed statements of HOW it is to be achieved.

ORGANISATION - 4.1.2

Responsibility and Authority - 4.1.2.1

Requirement:

Documents defining the structure within the company which show accountability and limits of authority concerning matters relating to quality.

Present position:

A family tree of the organisation existed. However, this chart had been recently prepared as a "one off", was undated and not signed. As such, its authority was not clear and it had not been generally communicated within the company.

Responsibilities were defined in job descriptions down to management and staff levels but not to hourly paid.

This arrangement would meet the needs of ISO 9002 if the operator responsibility is included, but requires attention to ensure the documentation is updated to meet changes.

It is recommended that job descriptions should be simple statements of general roles and accountabilities and that the specific accountability is contained within each procedure.

A traditional quality control method of management was used and very little responsibility delegated to the line operators.

Authority for actions between the Quality Department and the Production Department were stated by the senior management but not communicated formally to their organisations.

Verification Resources and Personnel - 4.1.2.2

Requirement:

In-house resource needs are identified and adequate trained resources are supplied.

Present position:

The quality control staff appeared to be adequate for the operations required during normal running conditions. The resources on the night shift were noted as being considerably less.

There was no stated method of operation in the absence of key personnel.

Management Representative - 4.1.2.3

Requirement:

A management person appointed to be responsible for ensuring the Standard is implemented and maintained.

Present position:

As the system is not formalised, no individual member of management had been appointed as having overall responsibility for the quality system and its maintenance.

A management person needs to be designated for this role. It is recommended that this should be the Technical Manager and that training in ISO 9000 should be given or experienced resource be supplied to support him in this role.

MANAGEMENT REVIEW - 4.1.3

Requirement:

A formal management review of the quality system by the company senior management on a regular basis and a record kept.

Present position:

Informal reviews of the results are carried out.

Formal reviews are required of the effectiveness of the system and compliance with defined frequencies, action plans, objectives and targets.

4.2 QUALITY SYSTEM

Requirement:

A documented system and its effective implementation.

This includes all systems/processes/quality assurance (QA) controls and measurement procedures to meet the customer's requirements.

(Often designed in a hierarchical format comprising:

Level 1	Policies
Level 2	Company procedures
Level 3	Detailed work instructions, often variety specific.)

Present position:

The system is informal. Good procedures and practices were observed but these operate in a vacuum and rely heavily on the experience and good sense of the people involved at all levels.

The inter-relationship between Production and Quality is not clearly defined and may well result in errors.

The company needs to define the structure of the planned system for the site to enable the development of the system to progress.

This should be the next step after specifying the company objectives and appointing the management representatives.

4.3 CONTRACT REVIEW

Requirement:

Procedures defining how the customer requirements are to be met, i.e. the customer receives what has been ordered on the agreed date.

Present position:

No formal procedure exists - it is required.

This will be of particular importance if markets are developed with EC retailers. A system of communication will need to be defined to ensure that the specific requirements of individual companies are communicated effectively and accurately to the shop floor.

The present method uses the computer system for some customers and a paper/ verbal system for others. It is recommended that a common method is used for all customers and the accountabilities are clearly defined.

4.4 DOCUMENT CONTROL

DOCUMENT APPROVAL AND ISSUE - 4.4.1

Requirement:

All documents approved by authorised people, properly identified, available at the point of use, and old copies removed.

Present position:

All documents need to be brought into a control system.

The design of the quality system at the conception stage must take account of the practical difficulties of achieving complete document control, e.g. minimise the circulation, design procedures for individual work stations, separate data from descriptions, etc.

The computer system in use appears to be very comprehensive and change to data appears to be well controlled. This needs to be described, probably in a Level III Operating/Training document.

DOCUMENT CHANGES/MODIFICATIONS - 4.4.2

Requirement:

Changes are authorised, controlled and recorded.

Position:

No control system exists for the present low levels of documentation. Design of the system to minimise the administrative burden is needed and training of the personnel in its use will be needed.

4.5 PURCHASING

GENERAL - 4.5.1

Requirement:

Purchased product conforms to specified requirements.

Present position:

Due to the natu, e of the products (seasonal and highly crop dependent), the specifications need to be flexible.

The system needs to be designed to allow for this reality, whilst ensuring that adequate control is exercised at the technical level on this flexibility.

ASSESSMENT OF SUB-CONTRACTORS - 4.5.2

Requirement:

Records of acceptable sub-contractors.

Methods to ensure that the sub-contractor quality controls are effective.

Present position:

The Hungarian supply situation is such that sub-contractors are not generally used; the site is almost self-sufficient in its resources.

PURCHASING DATA - 4.5.3

Requirement:

Purchasing documents to contain data on material ordered/referenced to a specification.

Present position:

The purchase requisitions identify the materials required by specification and date.

Raw materials are normally purchased from approved suppliers on a seasonal contract basis.

Suppliers are approved by the Agricultural Department. The choice of supplier is limited and the ability to develop planned long-term relationships restricted by the Hungarian economic and political situation.

VERIFICATION OF PURCHASED PRODUCTS - 4.5.4

Requirement:

Purchaser must specify right to verify at source and/or on receipt. Verification at source is not evidence of effective quality control by the sub-contractor.

Present position:

A high level of incoming inspection is practised on ingredients.

Audit of suppliers is also carried out by purchasing.

A formal procedure for audit needs to be developed.

As confidence in the suppliers' practices grows, it should be possible to reduce the frequency of incoming inspection.

4.6 PURCHASER SUPPLIED PRODUCT

Requirement:

If the customer supplies materials for inclusion in the product, then the supplier must establish and operate a system of verification, storage, records of losses etc and report to the customer.

Present position:

Some materials are supplied by the customer and a specific procedure for control and accounting was said to exist. This was not examined.

4.7 LOT TRACEABILITY

Requirement:

A defined system of batch/lot traceability.

If a specific customer code is required, then verification must be included in the system, including bar coding.

A product recall system must be included.

Present position:

The lot traceability system needs to be described and the level of traceability defined.

The presence practices do not ensure complete traceability from the supplier to the finished product.

Tracking of materials taken off line as part-finished appears to be effective.

Operating practices in terms of identifying product during the process need to be reviewed and possibly improved.

The identification of finished and part-finished product in the cold stores by pallet seemed to be effectively operated.

4.8 PROCESS CONTROL

GENERAL - 4.8.1

Requirement:

Issues to be considered are: environment, buildings, equipment design capability and maintenance, personnel, waste disposal, cross-contamination, personnel and work criteria and computer failure.

Work instructions are point of use.

Control points shall be specified.

Present position:

A HACCP team has been appointed from which the critical control points will be identified and control activities implemented.

A high reliance is placed on records in the computer system entered by the QA and production operators.

All these records need to be described within the quality system.

The control of results, monitoring by supervisors and audit by QA is not described.

The use of the results to produce trends is not generally practised until the end of the season.

The impression is that unnecessary double checking is carried out, with QA repeating activities of the production operators.

The communication of information to the operator is variable.

In designing the quality system, the needs of the user, in this case the production operators, should be paramount.

SPECIAL PROCESSES - 4.8.2

Requirement:

Continuous monitoring and/or compliance is required where deficiencies may only be apparent after the product is in use.

Present position:

No part of the process was judged to be a special process.

4.9 INSPECTION & TESTING

RECEIVING INSPECTION AND TESTING - 4.9.1

Requirement:

Incoming product not to be used until verified according to plan.

Early release methods must be specified if required.

Present position:

A high level of incoming inspection is specified and carried out.

Incoming ingredients are not used until approved.

The system practised needs formally describing.

Attention to identification of materials after delivery is needed, i.e. stock rotation, identification, protection from contamination, reduction of wastage etc.

An early release system does not exist.

IN PROCESS INSPECTION - 4.9.2

Requirement:

Inspection and tests must be completed as per the quality plan. Tasting tests must be by qualified personnel against a known standard.

Present position:

A quality plan is not formally described; tests specified appear to be carried out.

Tasting is not adequate and depends upon the skill of an individual using a subjective memory judgement.

Changes are required to the tasting practices.

FINAL INSPECTION & TESTING - 4.9.3

Requirement:

No product shall be released until the final checks are complete. Responsibility for release shall be defined.

Present position:

Product is positively released by QA.

The system needs to be formally described.

INSPECTION TEST RECORDS - 4.9.4

Requirement:

Records of testing shall be retained.

Present position:

Test records were being retained and a holding period was specified. Especial care needs to be exercised with the records retained by computer.

4.10 INSPECTION/TEST EQUIPMENT

Requirement:

Equipment used to check conformity to specification shall be identified.

These instruments shall be identified for calibration status.

Instrument used for comparative purposes shall not be used for critical measurements.

A calibration programme shall be established with frequency, acceptance criteria, methods and action to be taken if out of calibration.

Present position:

No calibration regime exists within the production area; the QA has a partial system in place for laboratory equipment.

A calibration regime must be described based on:

- whether the measurement is essential
- the accuracy of measurement required
- the acceptable operating ranges.

Any calibration regime must relate back to a National Standard.

4.11 INSPECTION & TEST STATUS

Requirement:

Materials to be identified for their inspection and test status at each stage in the process.

Present position:

Identification was not complete, e.g. different grades of product were filled into identical unmarked paper sacks in close proximity to each other.

4.12 CONTROL OF NONCONFORMITY

Requirement:

Nonconforming product must be isolated and follow-up action defined.

Present position:

The system needs to be described.

The present practices rely upon word of mouth communication and the identification by pallet tickets.

The authority for disposal was said to be with QA, although some decisions were taken by Production.

The system needs to be very clear on authority and methods of communication.

It is recommended that both Production, Engineering and QA should have the authority to raise quarantines and be appropriately trained.

NONCONFORMITY - REVIEW AND DISPOSAL - 4.12.1

Requirement:

Disposal authority to be specified.

Reworking procedures to be defined.

Product may be: reworked, regraded, scrapped or accepted by concession.

Present position:

When QA is notified of quarantines, the disposal decision if made by them.

Levels of authority need to be defined for technical and commercial decisions.

4.13 CORRECTIVE ACTION

Requirement:

Methods to be defined for investigating root causes of quarantines and complaints.

Corrective action to be implemented and recorded.

Present position:

Both QA and Production see themselves as responsible for investigations.

Responsibilities need to be defined in the system.

The method for tracking progress, target setting etc needs to be reviewed.

4.14 HANDLING, STORAGE, PACKING AND DELIVERY

GENERAL - 4.14.1

Requirement:

Specified methods for all handling and storage of raw materials and finished products.

Present position:

The communication of the storage conditions and responsibilities was not examined.

Materials may be delivered in wooden crates, in bulk or in plastic trays.

HANDLING - 4.14.2

Requirement:

Handling methods which prevent damage/deterioration.

Present position:

The method of handling will affect the wastage level and needs to be well defined.

The present operating practice of dumping carrots on the ground in the open appeared to be wasteful, difficult to control and likely to give rise to additional contamination.

STORAGE - 4.14.3

Requirement:

Secure and adequate storage, stock rotation, authorised issue from store and stock review.

Present position:

The storage area was in generally good condition.

The stock rotation and issue system require further investigation.

These need to be described.

PACKAGING - 4.14.4

Requirement:

Appropriate packing methods for protection and preservation.

Present position:

The packaging is usually defined by the customer specification. The communication of the details of the specification to the point of use needs review.

DELIVERY - 4.14.5

Requirement:

Protection in final store and delivery.

Present position:

The cold store was large and well laid out.

Some handling damage could be observed.

The operation of selecting and loading orders to the transport was not observed.

4.15 QUALITY RECORDS

Requirement:

Adequate storage and protection of quality records.

Present position:

Records were said to be stored for three years on site. Some records were retained in a computer format.

The responsibility needs describing and which records must be retained.

4.16 INTERNAL QUALITY AUDITS

Requirement:

An audit plan to show that the system is complete, being operated, and all records maintained.

Follow-up action from the audits are completed.

Audit carried out by independent auditors.

Present position:

No effective audit was being carried out; the QA department was functioning in a traditional inspection role.

As the written system is developed, the personnel need to be trained in auditing techniques and an audit plan developed.

The resources for this should not be additional to existing numbers but in place of inspectors.

The quality of the individuals required for this new role needs to be defined.

4.17 TRAINING

Requirement:

Training plans and results for all activities required to meet the quality plan.

Present position:

Comprehensive training is defined for new employees and all personnel associated with the production operation are retained at the beginning of the season.

The records were not examined.

4.18 STATISTICAL TECHNIQUES

Requirement:

Methods of establishing appropriate statistical techniques verifying product conformance and process capability.

Present position:

Opportunities exist for the application of statistical techniques to enable improved control and potential cost savings to be realised.

CONCLUSIONS

The general conclusions and recommendations were presented to the Board of Directors and the senior managers before leaving site.

These were as follows:

Overview

1. Comprehensive records are being kept of quality results, particularly those that are computerised.

2. The system as operated appears to be comprehensive but is informal, i.e. not documented.

3. Management commitment to the principles inherent in ISO 9000 appears to exist.

Therefore, there is no inherent reason not to proceed.

Problems

1. The majority of the system is informal, i.e. not documented. Therefore, there is potential for:

   - confused accountabilities
   - mistakes in the absence of key personnel
   - loss of experience if key personnel leave.

   The system as operated is excessively dependent on the knowledge, skill and experience of key personnel.

   These personnel have an "understanding" of their roles and responsibilities and their interface with other parts of the organisation.

   In the absence of a documented system, this method of managing is likely to lead to errors and friction between departments.

2. Existing procedures operate in a vacuum. There is no structure or organisation of the system.

   Therefore, there is potential for:

   - conflicting instructions being issued from different parts of the organisation
   - out-of-date instructions and information being used.

3. Lack of clarity for accountability for quality standards.

   There appears to be considerable freedom of action for the production operation to vary the standards set by the technical area.

   This may well be the method of operation which the company wishes to adopt, but appropriate controls and records will be required.

4. Lack of clarity on limits of authority.

   This applies to both the authority for product quality decisions and also for financial decisions.

   Defining these limits will free up senior management time and give greater job satisfaction to junior management without losing financial control.

Total Quality Management

1. The organisation was a "traditional hierarchical" management structure.

   However, there is:

   - a willingness by management to involve the work force
   - evidence of interest by the work force in more involvement.

2. There is a high level of information gathering

   - on quality
   - on financial.

However, there is a lack of:

- simple local measures of performance, quality and financial.
- frequent communication of results against targets to all levels in the organisation.

3. There are very high business pressures on the company and its officers due to the unique Hungarian environment.

However, there is a realistic acceptance of the need to achieve improvement in all aspects of the business in order to survive.

4. There is an acceptance of the need to improve efficiency.

However, there is no clear strategy to handle one of the key consequences, the potential need to reduce numbers of personnel at a time of high unemployment and uncertain social change.

RECOMMENDATIONS

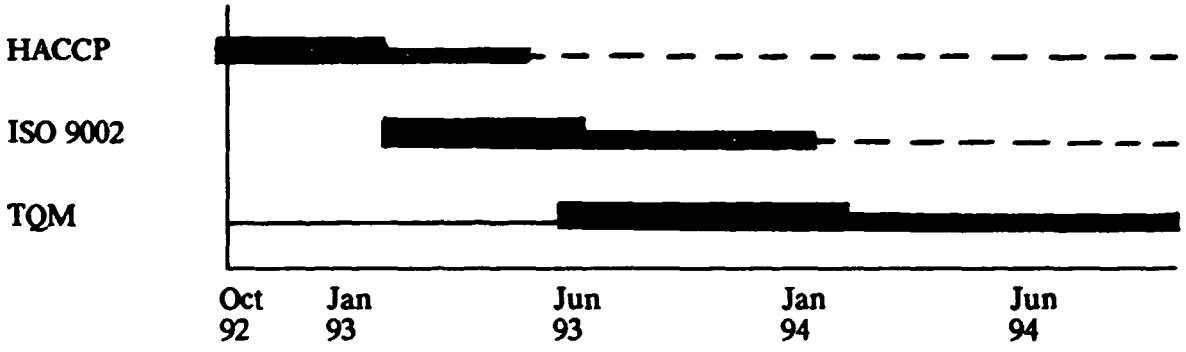
Implementation Timetable

The company should proceed with the implementation of the three projects under consideration:

- Hazard analysis critical control points (HACCP)
- Quality management systems (ISO 9002)
- Total quality management (TQM).

However, these projects will require a major management input and efforts; therefore, a balanced plan will be required.

The recommended sequence and an approximate timetable is illustrated below. It should be noted that these estimates of time do NOT take into account other business needs, e.g. budget preparation, seasonal production pressures, etc.



The period from October 1992 to June 1993 is to be used as the planning period for TQM during which the policies, training packages, communication methods and local measures required are to be developed and tested.

Steering Group

The company will be taking on a major commitment.

In order to effectively manage this commitment, a steering group is needed comprising:

- the Board of Directors
- plus the Production Manager
- plus the Technical Manager
- plus the Chief Engineer.

This steering group will need to meet initially on a monthly basis but may revert to a quarterly basis when confidence in progress is achieved.

The responsibilities of the steering group will be to:

- define ownership of the parts of the projects
- control the timetable and any changes
- review progress against the timetable
- resolve priority clashes between the projects and the needs of the business
- supply resources to meet the timetable
- agree measures of success for each project
- review progress on the actions required arising from the projects
- communicate progress and successes within the site and to other interested parties.

Project Leaders

It is recommended that a project leader is appointed for each project with the authority and accountability for delivering the project against the agreed timetables.

It is suggested that the appropriate leaders would be:

- HACCP	Production Manager
- ISO 9002	Technical Manager
- TQM	Personnel Director

ISO 9000

It is recommended that:

1. The company progresses to accreditation standard against ISO 9002.

2. The company reviews the benefit of accreditation against the costs when the system is in place and makes the decision at that time whether or not to actually seek accreditation.

3. The system is designed on ISO 9001 to enable future development if required.

4. Quality policies are developed and approved by the Board of Directors.

5. Quality procedures are written by the departments carrying out the procedures.

6. The Technical Manager is appointed as the "guardian" of the system and provides an editing and support facility.

7. A person is trained as a Lead Assessor either from within Szekesfehervar or from Mirelite.

8. External resources, e.g. Campden Food and Drink Research Association, are employed to assist in the design and development of the system to ensure the appropriate standards are met. If possible, this type of external support would entail brief monthly reviews and advice and quarterly audits and review.

Total Quality Management

It is recommended that:

1. Simple key measures are developed for each department.

   These measures are NOT intended to replace the information needed by the business accounting system.

   These measures should include the cost factors controllable by the department and expressed in terms easily understood by the work force in that department.

2. The key measures from (1) should be tested for accuracy and communication routes developed.

3. Accountabilities for quality are defined. This could be most easily achieved within the ISO 9002 system.

4. The company objectives are stated, often achieved in a "mission statement", and clearly communicated to all parts of the business, the suppliers and the customers.

   From this "mission statement", the company policies need to be developed. Many of these policies will be required for the ISO 9002 system.

   Development of the personnel policies will be the key to the success of the TQM project and need to include aspects such as:

   - company commitment to its employees
   - redundancy policy
   - reward policy
   - recognition of contribution

   etc.

5. Training packages are developed for all levels, i.e. the Board, management, facilitators, staff, operators etc.

   Within these training packages there will be a need for specific training in problem solving techniques, team working and communication.

6. The launch package for TQM is developed with external assistance.

7. Senior members of the company visit other businesses to introduce them to the benefits (and problems) of TQM.

8. The marketing organisation is strengthened by the employment of marketing specialists in the targeted markets.

APPENDIX I

CURRENT SENIOR MANAGERS AT SZEKESFEHERVAR FACTORY

SZEKESFEHERVAR MANAGEMENT TEAM

Mr Berczeli Béla	President and General Manager
Mr Rengel István	Technical Director
Mrs Pelcz Antalné	Financial Director
Mr Lehner Imre	Commercial Director
Mr Gáborik János	Chief Engineer
Mr Ács Tibor	Personnel Director
Mr Tóth László	Raw Material (Agricultural) Manager
Mrs Staudtné Czifra Erzsébet	Assistant to Financial Director
Mr Pázmándi Mihály	Assistant to Personnel Director/union representative
Mr Baráth Zoltán	Production Manager
Mr Binder István	Quality Laboratory Manager
Mr Mayer György	Maintenance Manager
Mr Kúthy László	Export Officer
Mr Király István	Domestic Sales Manager
Miss Bajkai Andrea	Microbiologist
Mr Szijj Gyula	Head of Computer Department
Mr Nagy I. Csaba	Deputy Agricultural Manager
Mrs Szabóné Kanyó Ágnes	Development Engineer

APPENDIX II

COPIES OF ACETATES USED DURING PRESENTATIONS

ISO 9000

SAY WHAT YOU INTEND TO DO

DO IT !

PROVE YOU HAVE DONE IT

ISO 9000

SCOPE

THE WHOLE BUSINESS PROCESS ;

FROM RECEIPT OF PURCHASE ORDER

TO DELIVERY AT THE CUSTOMER

INCLUDING

ALL ASPECTS OF HOW THE BUSINESS IS ORGANISED TO ACHIEVE A

QUALITY PERFORMANCE

ISO 9000

4.1 MANAGEMENT RESPONSIBILITY

POLICY
ORGANISATION
REVIEW

4.2 QUALITY SYSTEM

DOCUMENTED

4.3 CONTRACT REVIEW

WHAT DOES THE CUSTOMER WANT
ARE WE CAPABLE ?

ISO 9000

4.4 DESIGN CONTROL

- PLANNING
- INPUT
- OUTPUT
- VERIFICATION
- CHANGES

4.5 DOCUMENT CONTROL

- APPROVAL
- CHANGE CONTROL

4.6 PURCHASING

- SUPPLIER ASSESSMENT
- DATA
- VERIFICATION
- SPECIFICATIONS

ISO 9000

4.7 CUSTOMER MATERIALS

CONTROL

4.8 TRACEABILITY

SHELF LIFE
BAR CODES

4.9 PROCESS CONTROL

WORK INSTRUCTIONS
STANDARDS / CRITERIA
MONITORING
SPECIAL PROCESSES

ISO 9000

4.10 INSPECTION AND TESTING

RECEIPT
POSITIVE RELEASE
PROCESS TESTING
FINAL INSPECTION
RECORDS

4.11 TEST EQUIPMENT

CALIBRATION
RECORDS
TASTING

4.12 INSPECTION AND TEST STATUS

ISO 9000

4.13 NONCONFORMING PRODUCT

IDENTIFICATION
DISPOSALS

4.14 CORRECTIVE ACTION

INVESTIGATION
ACTION
PRODUCT RECALL

4.15 STORAGE PACKING DELIVERY

PROTECTION
CONTAMINATION
HYGIENE

ISO 9000

4.16 QUALITY RECORDS

4.17 INTERNAL AUDITS

PLAN
METHOD

4.18 TRAINING

CRITERIA
RECORDS

4.19 SERVICING

4.20 STATISTICS

ISO 9000

QUALITY MANUAL STRUCTURE

LEVEL I POLICIES

WHAT
WHY

LEVEL II PROCEDURES

WHAT
WHERE
WHEN
WHO
DATA

LEVEL III TRAINING MANUALS

HOW
WHY

T.Q.M.

DEFINITION

PHILOSOPHY and PRACTICES

to :-

HARNESS HUMAN and MATERIAL RESOURCES

MOST EFFECTIVE WAY

to :-

ACHIEVE THE ORGANISATIONS OBJECTIVES

BS 7850

T.Q.M.

FUNDAMENTAL REQUIREMENTS

COMMITTMENT

CUSTOMER SATISFACTION

QUALITY LOSSES

INVOLVEMENT OF ALL

T.Q.M.

PROCESS MEASUREMENTS

CONTINUOUS IMPROVEMENT

PROBLEM IDENTIFICATION

CORPORATE OBJECTIVES v
INDIVIDUAL ATTITUDES

PERSONAL ACCOUNTABILITY

PERSONAL DEVELOPMENT

T.Q.M.

IMPLEMENTATION

ORGANISATIONAL STRUCTURE

- REWARD
- RESOURCE
- SUPPORT
- ENVIRONMENT
- TRAINING
- PROCESSES/PROCEDURES

MANAGEMENT

- ROLES AND ACCOUNTABILITIES
- CUSTOMERS
- STANDARDS

T.Q.M.

IMPLEMENTATION (contd.)

MEASURES.

- COST
- TIME
- QUALITY
- CUSTOMER SATISFACTION
- etc.

PLANNING CYCLE.

T.Q.M.

IMPLEMENTATION (contd.)

TRAINING

- MANAGEMENT
- TECHNICAL
- PROCESS
- PROBLEM SOLVING
- COMMUNICATION
- TEAM

QUALITY SYSTEM

T.Q.M.

TOOLS

- DATA COLLECTION
- AFFINITY GROUPING
- BENCHMARKING
- BRAINSTORMING
- CAUSE and EFFECT (ISHIKAWA)
- FLOW CHARTS
- TREE DIAGRAM
- CONTROL CHARTS
- HISTOGRAMS
- PARETO
- SCATTER
- PAIRED COMPARISON

APPENDIX III

LIST OF SZEKESFEHERVAR PERSONNEL ATTENDING PRESENTATIONS OR TAKING PART IN INTERVIEWS

SZEKESFEHERVAR MANAGEMENT INVOLVED IN PRESENTATIONS AND INTERVIEWS

ATTENDED INITIAL PRESENTATION, 6TH OCTOBER 1992

Mr Berczeli
Mr Rengel
Mr Gáborik
Mrs Staudtné
Mr Baráth
Mr Binder
Mr Mayer
Mr Kúthy
Mr Király
Miss Bajkai
Mr Nagy
Mrs Szabóné Kanyó

PARTICIPATED IN INTERVIEWS

Mr Binder
Mr Ács
Mr Pázmándi
Mr Rengel
Mr Gáborik
Mrs Pelcz
Mr Berczeli
Mr Lehner
Mr Baráth
Mr Tóth

PARTICIPATED IN PRESENTATION, 9TH OCTOBER 1992

Mr Berczeli
Mr Rengel
Mrs Pelcz
Mr Lehner
Mr Ács
Mr Tóth
Mr Kúthy
Mr Binder
Mr Baráth
Mr Király
Mr Nagy