1. INTRODUCTION

Remit of ACNFP

The Advisory Committee on Novel Foods and Processes (ACNFP) is an independent body of experts whose remit is:-

> "to advise Health and Agriculture Ministers of Great Britain and the Heads of the Departments of Health and Social Services and Agriculture for Northern Ireland on any matters relating to the irradiation of food or to the manufacture of novel foods or foods produced by novel processes, having regard where appropriate to the views of relevant expert bodies".

The "expert bodies" referred to above include the Panel on Novel Foods of the Committee on Medical Aspects of Food Policy; the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment; and the Advisory Committee on Genetic Manipulation. These bodies are well represented on the ACNFP. The background to the formation of ACNFP is given below.

2. Predecessor Committee

As a result of an understanding reached with the Ministry of Agriculture, Fisheries and Food (MAFF) in 1980, the then Food and Drink Industries Council (FDIC) invited its member associations to recommend that their member companies notify MAFF before marketing a novel food, so that the nutritional and safety aspects of the food might first be evaluated, in strict confidence, by independent experts. This understanding reflected a recommendation of the Food Standard Committee in its "Report on Novel Protein Foods", (HMSO, 1974).

Subsequent to this understanding being reached, Ministers appointed the Advisory Committee on Irradiated and Novel Foods (ACINF) with a remit to advise on the irradiation of food and on the safety of novel foods or foods produced from novel processes.

Most of the work of ACINF related to the evaluation of food irradiation and a report was issued on this topic in 1986 (Report on the Safety and Wholesomeness of Irradiated Foods) with a Response to the comments received on the Report being issued in 1987. ACINF, as well as giving advice on certain food projects submitted by the food industry also issued a "Memorandum on the Testing of Novel Foods" in 1984, which included guidelines for the testing of novel foods.

3. Reconstitution as ACNFP

Following the completion of the review of food irradiation by ACINF, and bearing in mind the significant advances in recent years in food biotechnology and in particular, in techniques for genetic manipulation, Ministers decided to reconstitute the Committee as the Advisory Committee on Novel Foods and Processes (ACNFP) in 1988. The Committee's new name better reflects its future work which includes the assessment of the safety of foods which are themselves genetically manipulated organisms or which are produced in processes involving such organisms, although the Committee continues to advise as necessary on food irradiation. The membership of the Committee was increased to strengthen its expertise in biotechnology and genetic manipulation, whilst retaining its expertise in the more traditional areas of nutrition, microbiological safety, chemical toxicology and biophysics/radiobiology. A full membership list is given as Appendix A.

4. Guidance on information requirements for assessment of novel foods and processes

As well as giving advice to Ministers on submissions on individual novel food and processes, the work of ACNFP includes giving guidance to the food industry on the sort of information it would wish to see in any such submission. In order to fulfil this aspect of its work, the ACNFP has updated and revised the Guidelines issued by ACINF in 1984 to take account of the wider range of novel food products now being submitted for assessment and the newer techniques of genetic manipulation.

II. DEFINITION OF NOVEL FOODS AND PROCESSES

A food may be novel as a result of the use of novel raw materials, novel processing or preparation techniques or novelty of its role in the diet. Novel food organisms or products derived from such organisms may result from recently developed techniques such as genetic manipulation or from more conventional plant and animal breeding techniques. It is unlikely that an all-embracing definition for novel foods and processes covering all eventualities can be derived and therefore the following definitions have been established, together with explanatory notes which attempt to delineate the extremes of products to be included in the definitions of novel and to identify those products falling outside the definitions:-

- "Novel foods are foods or food ingredients which have not hitherto been used for human consumption to a significant degree in Western Europe and/or which have been produced by extensively modified or entirely new food production processes".

- "A novel process is a process which has not hitherto been used in the processing of foods".

Prior to their introduction, the processes of canning, freeze-drying, pasteurisation and irradiation are examples of what would have been regarded as novel processes.

The definitions covers all foods intended for UK consumers which may be marketed in a form or manner that could bring about significant toxicological or nutritional changes in the diet. They exclude food additives. Components extracted from conventional foods by traditional processes, recipe changes or minor process modifications are not considered to be novel, though any significant nutritional implications would be of relevance to the Committee.

Under current UK food law, companies must be satisfied of the safety of their products and must themselves evaluate whether foods or processes should be referred to the Committee for consideration. While it is not possible to give comprehensive guidance on the type of products or processes to be referred, the following categories will be of particular interest:-

- food produced by technology involving genetic manipulation, for example using recombinant DNA methods

- food produced by technology involving mutations which are not site-specific

- synthetic food items

- foods produced by significantly modified or entirely new processes

The use of new food species, or of novel varieties obtained by outbreeding traditional crop varieties with wild types or exotics may in some instances raise novel problems of nutrition or toxicology.

III. LEGISLATIVE POSITION

[To be written later, when the outcome of the revision of 1984 Food Act is clearer]

IV. NOTIFICATION PROCEDURE

[ditto]

V. STRATEGY FOR ASSESSMENT

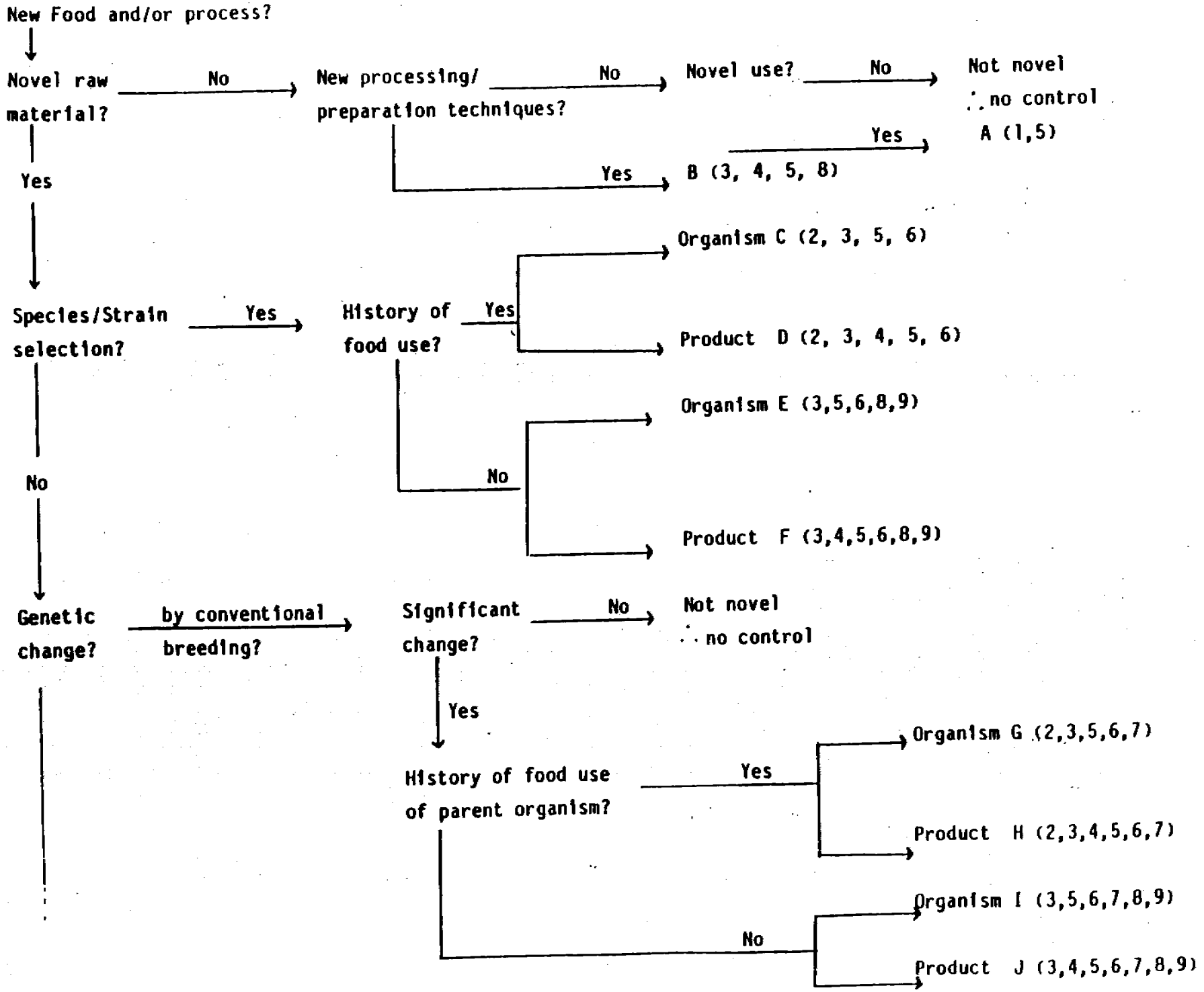
General considerations

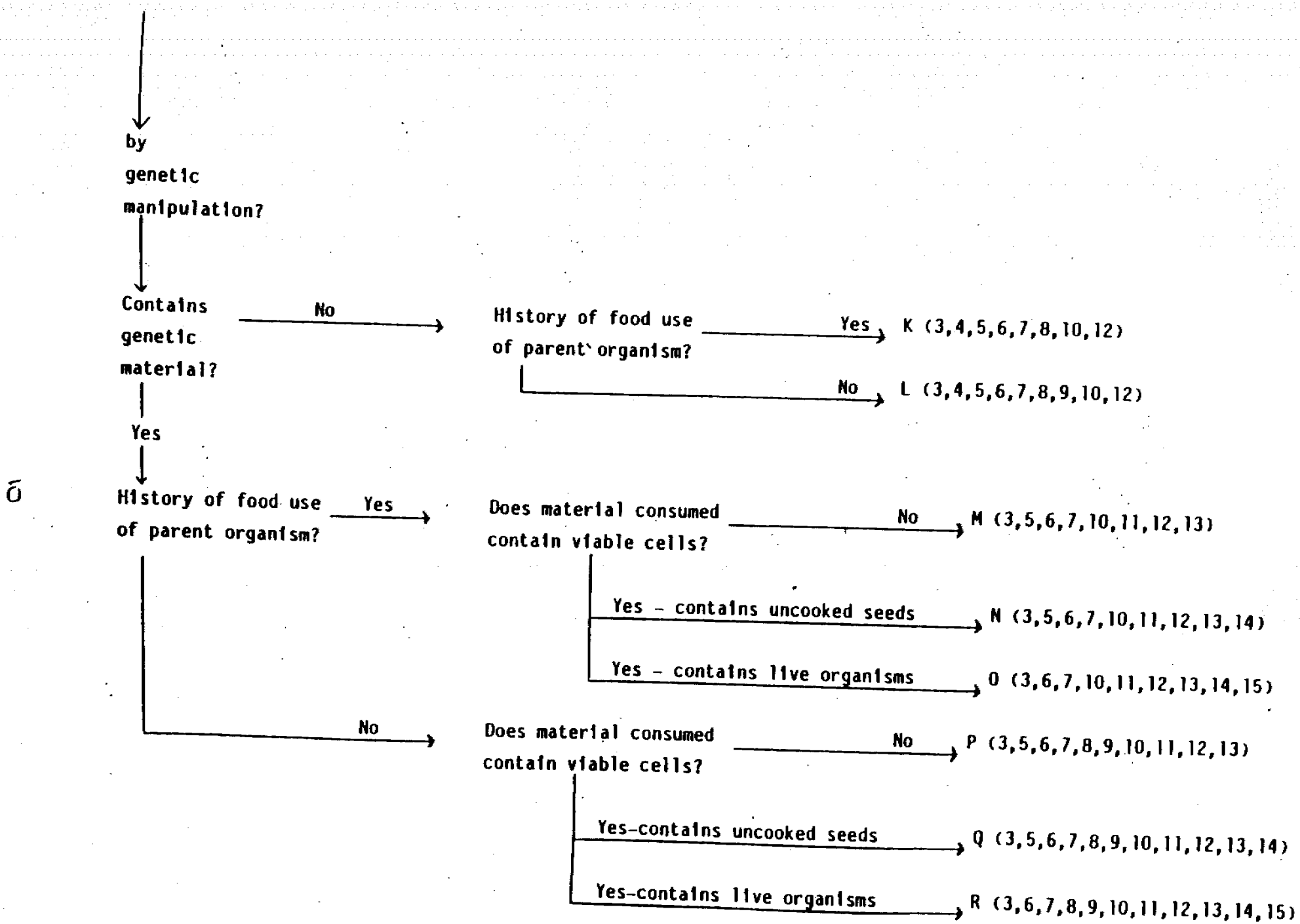
The term "novel food" encompasses many different types of material, ranging from a selected strain of an existing food organism to a new strain obtained by traditional breeding techniques, or as a result of genetic manipulation procedures. The novel food may be the organism itself, be it a micro-organism, plant or animal (or a part thereof), or it may be a product derived from such an organism. A novel food product may be equivalent to an existing product but be produced by an extensively modified or entirely new process, for example a food component previously extracted from plants now being produced from a recombinant micro-organism. Existing foods may also be subjected to novel processes.

With such a wide range of considerations, it is obvious that the amount of information necessary for assessment will also vary widely from one example to another. Therefore, in order to provide guidance for those producing such foods or those wishing to market them, the Committee has derived a decision-tree scheme which, by answering a series of questions, will indicate the types of information likely to be required in individual situations. It is emphasized that this scheme is designed to give guidance only and that it is not a rigid checklist. The Committee wishes to stress its flexible approach to the assessment of novel foods and processes and its willingness to consider reasoned arguments as to why certain information may or may not be relevant in individual cases.

Decision tree

A schematic representation of the decision tree, which covers both novel foods and processes is given on pages 9-10. The intention of the tree is to produce information requirements for the different categories of novel foods or processes. For novel foods this will include the


New Food and/or process?
Novel raw material?
No
New processing/ preparation techniques?
No
Novel use?
No
Not novel
∴ no control
A (1,5)
Yes
Yes
B (3, 4, 5, 8)
Yes
Species/Strain selection?
Yes
History of food use?
Yes
Organism C (2, 3, 5, 6)
Product D (2, 3, 4, 5, 6)
No
Organism E (3,5,6,8,9)
No
Product F (3,4,5,6,8,9)
Genetic change?
by conventional breeding?
Significant change?
No
Not novel
∴ no control
Yes
History of food use of parent organism?
Yes
Organism G (2,3,5,6,7)
Product H (2,3,4,5,6,7)
Organism I (3,5,6,7,8,9)
No
Product J (3,4,5,6,7,8,9)


by genetic manipulation?
Contains genetic material?
No
History of food use of parent organism?
Yes
K (3,4,5,6,7,8,10,12)
No
L (3,4,5,6,7,8,9,10,12)
Yes
History of food use of parent organism?
Yes
Does material consumed contain viable cells?
No
M (3,5,6,7,10,11,12,13)
Yes - contains uncooked seeds
N (3,5,6,7,10,11,12,13,14)
Yes - contains live organisms
O (3,6,7,10,11,12,13,14,15)
No
Does material consumed contain viable cells?
No
P (3,5,6,7,8,9,10,11,12,13)
Yes-contains uncooked seeds
Q (3,5,6,7,8,9,10,11,12,13,14)
Yes-contains live organisms
R (3,6,7,8,9,10,11,12,13,14,15)

techniques used in their production; any previous history of food use of the parent organism(s); and the intended use (the organism itself or a derived product). A further important consideration is whether the material in question is likely to be a significant dietary item, either in terms of total intake or as a source of a particular macro or micronutrient.

In cases where a novel food has been derived using genetic manipulation procedures, a further question is whether or not the novel food material contains genetic material. If so, it is then important to determine whether this is likely to be consumed as non-viable cells (in the form of cooked products or raw fruit or vegetables that do not contain seeds) or whether viable cells are likely to be consumed - (see decision tree scheme - page 9-10).

Novel food or process categorisation

Working through the decision tree scheme will result in a novel food or process categorisation A to R. Each of these has varying information requirement (1-15, as indicated on the scheme). These information requirements are described in more detail in the following chapter (VI) of these Guidelines. Again it is emphasized that these are not rigid requirements and that there is expected to be a degree of flexibility when considering an individual submission.

VI. INFORMATION REQUIREMENTS

The need for information on the aspects described in the following sections 1-15 will depend on the particular novel food or process in question and should be determined by reference to the decision tree scheme as given on pages 9-10.

1. Labelling

[to be provided in consultation with the Food Advisory Committee]

2. History of human exposure

Reliable, high quality information on any previous history of human exposure to a novel food elsewhere in the world should be included in a submission in support of the safety of either the novel food organism or of products derived from such organisms. This should include data on amounts consumed and patterns of intake and of any preparation/cooking of the material before consumption. However anecdotal evidence will be given little weight. Information on the history of human exposure will be particularly important where there are traditional handling or cooking requirements for a food novel to the UK. This information will need to be made available to consumers as, for example, is the advice regarding the necessity for a minimum period of vigorous boiling when cooking various dried beans.

3. Intake/extent of use

Submissions should include information on the potential market as indicated by the particular properties of the food. For food products derived from novel sources, information on the range of applications for the product and the levels of use for each application will be necessary. It will also be important to estimate the potential intake in terms of both the average consumer and also any particular

subgroup(s) of the population that might consume extreme amounts of the food for whatever reason. However account should be taken of any marketing limitations that might be imposed by the projected scale of production facilities. It is possible that where a very large potential market is limited initially by the scale of production, the launch of the food should be limited geographically, with some subsequent assessment of that population before scaling-up production.

The submission should also give some consideration to any existing foods in the diet that might be displaced, so that any resultant nutritional implications could be assessed, such as the need for micronutrient supplementation or fortification.

4. Technical details of processing and product specification

Any novel processing/preparation techniques used to produce a novel food should be described, as such processing/preparation may result in the generation of toxic products or in nutrient losses. In situations where the novel food is a product derived from a novel organism, a detailed specification for the product will be necessary. Whilst it may be possible to give a chemical specification for the product in some instances (e.g relatively simple substances such as citric acid), this may not be possible for a complex food component (such as an oil with a varied triglyceride pattern). In such cases, a detailed description of the method by which the product is obtained should be included in the submission and this should form the basis of a "process specification" for the product. Evaluation of a process will include an analysis of the process per se and the identification of critical points which might lead, for example, to microbiological contamination or nutrient loss. A number of typical foods produced by the novel process will be evaluated as if they were novel foods.

In addition, the source of a novel food product may indicate potential problems. Thus novel foods produced from plant materials may need to be examined for the presence of particular natural toxins or antinutritional factors. Novel foods produced from marine products may

need examination for heavy metals and toxins. Novel fats or oils should be examined for unusual fatty acids such as erucic acid. Production processes involving micro-organisms may indicate the need for examination for toxins or pathogens. Although the source material used may be of a "food-grade" standard it will still be important to determine the levels of potential contaminants such as herbicides, pesticides, veterinary medicines or environmental contaminants in the starting materials as such contaminants could be concentrated in the novel food product during processing.

Where genetic manipulation procedures have been used to obtain a source organism for a novel food product, particular attention will have to be given to the consequences of that genetic change (see later, pages 20-24).

The specification provided should allow assessment of the limits within which the manufacture of the product is controlled. It should include details of product variability and of analytical methods and sampling procedures used to check the specification.

If the application relates to a production on a pilot scale (which seems likely to be the usual situation), the company will have to demonstrate that when produced in a larger scale plant the food will be nutritionally and toxicologically consistent in all respects with that cleared and that each batch will comply with the pilot scale specification(s). Clearance of a novel food or process will usually be conditional upon compliance with the product and/or process specifications of the material to which the test data relate and possibly upon the inclusion of further criteria within the specification(s).

If the crude protein, total fat or carbohydrate constitutes more than about 10% of the dry matter of a food, these components may need to be more fully investigated as follows:-

a. Crude protein may need to be examined for the true protein and non-protein nitrogenous material. Individual amino-acids may need to be determined as may unusual and toxic amino-acids if their presence is suspected. Non-protein nitrogenous components such as nucleic acids and amino-glycosides may need to be determined.

b. Total fat may need to be examined for saponifiable and non-saponifiable components. A full fatty acid spectrum may need to be determined. Particular attention should be paid to the presence of phospholipids, sterols, cyclic fatty acids and known toxic fatty acids and the amounts of saturated, mono-unsaturated and poly-unsaturated fatty acids. This could include an assessment of fatty acids with trans double bonds in the monoenoic and polyenoic fractions, cis, cis, 9, 12-octadecadienoic acid and fatty acids with chain lengths of 22 and over, both mono- and polyenoic together with peroxidised and degradation products of polyunsaturated fatty acids.

c. Total carbohydrate may need to be examined for availability. The non-metabolisable fraction (e.g fibre, non-starch polysaccharides and chitin) and also substances such as tannins may need to be subjected to chemical analysis.

A novel food should be analysed for the presence of toxic metals (e.g lead, arsenic). Depending on its intended use, analysis for metals of nutritional significance (e.g iron, zinc, calcium) may be appropriate.

The vitamin content should be determined if the presence or absence of particular vitamins is likely to be nutritionally significant (see section 5, page 16).

If the nature of the novel food or the novel process indicates the possible presence of naturally occurring or adventitious antinutritional factors (phytate, trypsin inhibitors etc) or toxins (haemagglutinins, mycotoxins etc), the product should be analysed for them specifically, by chemical techniques in the first instance. Biological tests, either as part of the nutritional evaluation in the case of enzyme inhibitors or more specifically as part of a mycotoxin screening programme, will provide useful back-up evidence concerning the presence or absence of these contaminants.

5. Nutritional evaluation

The nutritional consequences for the diet must be assessed particularly in respect of groups such as children, the elderly and those dependent on institutional catering, both at normal and maximum probable levels of consumption. The nutrient content should be assessed by chemical analysis, taking account of storage, further processing and cooking. Any anti-nutritional factors (e.g inhibitors of enzyme activity or mineral metabolism) on the nutrient content of the remainder of diets should also be assessed. Animal studies must be carried out to determine metabolisable energy, protein quality, if appropriate, and vitamin and mineral bioavailability from both the food and diets containing the food. If a food is expected to have an important role in the diet, animal experiments must be validated with appropriate studies in humans.

6. History of organism

The history of an organism can provide information that is important to the assessment of a novel food. There may be a history of toxin production by certain strains, species or genera and it would be important in such cases to examine the particular strain of the organism being used for the potential to produce such toxins, both under the conditions used in normal manufacturing and also under extreme conditions. Immuno chemical and other tests exist for a number of known toxins. A variety of non-specific biological tests have been

investigated for the purpose of screening for unknown toxins produced by a particular organism but have not been found to be generally helpful. However it is possible that the use of relevant gene probes to screen for the presence of sequences capable of producing toxins may provide a more effective and specific method for determining whether an organism has the potential to produce toxins known to be associated with related species or genera.

Strain selection or conventional breeding techniques, as well as influencing the toxin-producing capacity of an organism, may also influence positive nutritional factors such as vitamin levels or the proportions of unsaturated fatty acids and information on these aspects should also be provided.

7. Characterisation of derived strain in comparison with the parent strain

Where an organism has been modified, whether by conventional breeding techniques or by genetic manipulation procedures, the relationship of the derived strain to the parent(s) should be characterised, particularly with respect to growth requirements, potential for pathogenicity, genetic stability and variety of products (see also section 12 on page 22).

8. Toxicological assessment

When carrying out any toxicological testing, it is important that the material being tested complies with the same specification as that to be marketed (see section 4 on page 14).

As explained in the following paragraphs, special considerations apply in toxicological testing, especially when foods might constitute a significant proportion of the human diet. In particular:-

a. The traditional method of assessing the safety of a food additive, i.e allowing a one hundred-fold margin between the maximum amount of the additive likely to be consumed in the human diet and the maximum amount which has no toxic effect when fed to animals, clearly cannot be applied to a food which would constitute more than one per cent of the human diet. In any case, there are practical limits to the amounts of certain foods which can be added to animal diets without adversely affecting the animals' nutritional status and health. Due to the complex nature of foods there is a need to balance test and control diets for both major and minor components.

b. A food, once it has been adequately tested in appropriate animal and in vitro systems, should always undergo tolerance testing, including monitoring for possible allergenicity in small groups of normal human volunteers under controlled conditions and under medical supervision (see section 9, page 20).

The general principles of animal husbandry to be adopted when assessing the safety of foods are set out in the DHSS "Guidelines for the Testing of Chemicals for Toxicity" (HMSO, 1982). This document should also be consulted for further details of the tests discussed below.

Before starting animal studies, it is desirable to investigate the palatability of the test diet in the test animals. If a palatability problem is encountered, it may be necessary to increase the amount of food to the required level gradually. Paired-feeding techniques should be used if the problem cannot be overcome.

As foods are usually complex mixtures of chemicals, studies on the metabolic fate of every constituent of the food would be impracticable. However, if it is suspected that contaminants or minor components are a

cause of toxicity, the metabolism of the suspect chemicals should be investigated. It may be relevant in some situations to investigate the digestibility of the novel food material. Also, if a novel food, or a major component of it, consists of a new chemical compound which does not normally occur in the diet (e.g a novel carbohydrate), studies of the metabolic fate after ingestion of the new compound will be appropriate.

Changes in normal excretory functions caused a food may be relevant, and analysis of urine and faeces may give important information. For example, a novel food may alter the gut flora drastically, or may encourage preferential loss of a mineral or vitamin to the detriment of the good health of the study animals.

As a novel food will usually consist mostly of compounds unlikely to produce acute toxic effects (carbohydrates, lipids and proteins), acute toxicity studies will normally be inappropriate.

In most instances where some toxicological testing of a food is necessary, this will consist, at least initially, of a 90-day repeated dose study, normally in the rat, and a battery of in vitro mutagenicity screening tests. If the extent of human exposure to the food is likely to be widespread and the intake significant, then further toxicological studies will also be required, such tests for as chronic toxicity/carcinogenicity, embryotoxicity (including teratogenicity) and effects on reproduction. Details on the performance of such studies is given in the DHSS "Guidelines for the Testing of Chemicals for Toxicity" (HMSO, 1982). There are problems in the interpretation of mutagenicity tests on foods, particularly in view of the presence of numerous mutagens in naturally-occurring foodstuffs. Nevertheless, such studies may be valuable and, whether or not long-term toxicity studies are undertaken, mutagenicity studies will be needed on some novel foods. The DH "Guidelines for the Testing of Chemicals for Mutagenicity" (HMSO, 1989) details the "basis package" of recommended tests. The in vitro mutagenicity testing of some novel foods may present particular technical problems, owing to the presence in the growth medium of

nutrients from the food. Similarly some products derived from novel food organisms, such as proteins or oils may also interfere with the various *in vitro* test systems, and thus it may be necessary to use special bacterial strains or cell lines or suitable extraction procedures prior to testing.

9. Human studies

There is a wide diversity of types of studies that may need to be performed in humans on novel foods or products derived from novel foods, including the tasting of a new variety of an existing food organism, large scale acceptability and marketing trials and tests for intolerance or allergenicity. The ethical and legal considerations of studies in human subjects have been discussed elsewhere (DHSS Guidelines for the Testing of Chemicals for Toxicity, HMSO 1982 - Chapter 10, and Royal College of Physicians, London, Vol 20(4) p 3, 1986). Such considerations are particularly important when testing novel foods because there is no direct benefit to the participant(s).

The following types of studies may be appropriate:-

- Tasting / palatability
- Single dose / short term repeated dose studies for digestibility and tolerance
- Allergenicity, including observations of any allergic reactions in occupationally exposed personnel
- Acceptability / marketing trials

10. Assessment of a genetic manipulation procedure

In situations in which an organism has been modified using genetic manipulation techniques, the safety assessment of the organism itself, or that of any product derived from such an organism, will centre on the nature of the genetic manipulation procedure. Any such submission should include detailed information on the following aspects:-

- identification and characterisation of the host organism, including the strain and the site of the modification

- the nature of the modification, the source of the inserted material and its purity, including the genetic and metabolic relationship between the host organism and the new material, and the stability of the insert within the genome

- the method of insertion, including details of the vector used, the identity of any linker segments or additional stop codons and the amount of vector nucleic acid remaining in the modified organism

- the relationship of the insert with various controlling elements in the genome

- the method of selection of the modified organisms with the appropriate transplanted gene(s), including confirmation of the sequence of the cloned gene and details of any resistance markers used. If the markers code for resistance to drugs in clinical use then evidence that they have been jettisoned or suitably inactivated will normally be necessary

- if the manipulation is a deletion, how this was achieved together with checks on the specificity of the deletion, as well as any potential effects this might have on up - or downstream controlling sequences.

11. Effect of a genetic manipulation procedure on the known properties of the parent organism

As well as information on the genetic manipulation procedure itself, a submission should also include information on any effects of that procedure on the known properties of the host organism. This will include any effects on the toxin-producing capacity of the organism under both normal and extreme conditions, as well as any effects on

positive nutritional factors such as vitamin levels. For example with a genetically manipulated strain of potato it would be important to determine levels of solanine, as well as levels of vitamin C, both in the potato as harvested and consumed and after extremes of storage.

12. Genetic stability of a modified organism

It is important to determine the genetic stability of the organism following manipulation. For micro-organisms it will be important to determine the stability of the organism on storage prior to use in any fermentation and the establishment of a seed pool or deposition of the modified organism with a recognised repository is required. However it is accepted that there may be strong commercial reasons for not adopting the latter course. The establishment of a seed pool would involve storage in more than one place and each pool should be sufficiently large so as to be able to generate enough product for at least one years use.

The stability of a genetically manipulated micro-organism will also need to be determined under normal production conditions. The number of generations monitored should be in proportion to the number of generations expected in a normal production run. Such tests may include measurement of the production of the desired product by the micro-organism (for example levels of enzyme activity) and also Southern blot analyses of DNA to show the presence, status and copy number of the inserted gene within the DNA of the host organism.

Testing for the genetic stability of manipulated plants and animals will also be required.

13. Site of expression of any novel genetic material

In higher organisms a gene may be inserted which it is intended should only be expressed in a particular part of the organism, for example a gene confering increased pest resistance which is to be expressed only in the leaves of a plant or a gene for an important human protein such

as a blood-clotting factor which is directed for expression only in the mammary gland of an agricultural animal so that the desired protein can be harvested from the milk. In such cases it will be important to determine that the gene is not expressed elsewhere, such as the fruit of the plant or the meat of the animal.

Some micro-organisms may be genetically manipulated to produce important biological materials, either at specific stages of their growth only, or only in the presence of specific agents or substrates; for example brewers yeast which is normally discarded after separation from beer may be manipulated to produce other materials following a change of substrate. Again it will be important to determine that the gene is not expressed under other conditions, such as are used in normal food manufacturing procedures.

14. Transfer of novel genetic material

There is little evidence to suggest the transfer of genetic material from higher organisms such as fruit to human consumers or to gut flora and any such transfer would not be only from genetically manipulated organisms but would be a general problem. However genetic material transferred to higher organisms via viruses might be mobilisable and information would be needed on this potential. Little is known about the potential transfer to man of DNA from dead food micro-organisms but any potential for transfer to gut micro-flora would need to be assessed. For live genetically manipulated micro-organisms, such as in live yoghurts, it will be necessary to assess the likelihood of any transfer of the novel genetic material to the normal gut flora.

15. Assessment of a manipulated organism for survivability, colonisation and replication/amplification in the human gut

In cases where fermented foods containing live genetically manipulated organisms are consumed raw, such as live yoghurts or beers, it will be important to assess the modified organism for its ability to survive in the human gastro-intestinal tract, to colonise the gut and for

replication/amplification of the organism to occur within the gut. It may also be important tc assess the immune response tc such colonisation and to determine whether there is any significant generation of the relevant gene products within the gut.

It will also be important to determine any effect of the modified organism on the existing/normal gut flora populations, including any nutritional implications of this for the host.

The consequences of any survival of genetically manipulated organisms in the general environment is not within the remit of the Committee. Such aspects would be considered by the Intentional Release Subgroup of the Advisory Committee on Genetic Manipulation.

VII. DATA DEPOSITION

The ACNFP recommends that as much as possible of the data it considers be published or otherwise made available for public scrutiny. The Committee accepts the difficulties involved in publishing studies with negative findings but it is intending to institute a scheme for deposition of such data in the British Library (similar to an already existing scheme for data on food additives). The Committee also accepts that some of the information made available to it will be commercially sensitive and thus should not be so deposited. Companies making submissions will be asked to indicate whether they would be unwilling for any of the data made available to the Committee in support of their submission to be deposited in such a scheme.

APPENDIX A

MEMBERSHIP OF THE ADVISORY COMMITTEE ON NOVEL FOODS AND PROCESSES, as at _____

CHAIRMAN

Professor Derek C Burke, BSc, PhD, HonLLD
Vice-Chancellor, University of East Anglia

MEMBERS

Professor G E Adams, BSc, PhD, DSc
Director of Medical Research Council Radiobiology Unit, Chilton, Didcot, Oxfordshire

Professor T Atkinson, BSc, PhD
Deputy Director of the Centre for Applied Microbiology and Research, Microbial Technology Laboratory, Porton Down, Salisbury, Wiltshire

Dr A C Baird-Parker, OBE, BSc, PhD
Head of the Microbiology Division, Unilever Research

Professor W P T James, MA, MD, DSc, FRCP, FRCP (Edin), FRSE
Director of the Rowett Research Institute, Aberdeen

Professor B E Moseley, BSc, PhD
Head of Reading Laboratory, Agricultural and Food Research Council Institute of Food Research, Reading, Berkshire

Professor D J Naismith, BSc, PhD
Head of the Department of Food and Nutritional Sciences, King's College, University of London

Professor P Richmond, BSc, PhD, DSc, CPhys FInstp
Head of Norwich Laboratory, Agricultural and Food Research Council, Institute of Food Research, Norwich

Dr P J Rodgers, MA, DPhil
Research and Regulatory Affairs Manager at ICI Biological Products

Professor J E Smith, DSc, FIBiol, FRSE
Head of the Applied Microbiology Division, Department of Bioscience and Biotechnology, University of Strathclyde

Dr J W G Smith, MD, FRCP, FRCPath, FFCM, FIBiol, DipBact
Director of the Public Health Laboratory Service, London

Professor D A T Southgate, BSc, PhD
Head of the Nutrition Division of Norwich Laboratory, Agricultural and Food Research Council Institute of Food Research, Norwich

Dr A J Swallow, PhD, DSc, ScD, CChem, FRSC
Head of the Biophysical Chemistry Department, Paterson Institute for Cancer Research, Christie Hospital and Holt Radium Institute, Manchester

Professor P Turner, MD, BSc, FRCP
Professor of Clinical Pharmacology, St Bartholomew's Hospital Medical College, University of London

Professor R Walker, BSc, PhD
Professor of Food Science, University of Surrey

SECRETARIAT

Medical	-	Dr R Singh Department of Health
Scientific	-	Mr K Dale to February 1989 Dr D Jonas from March 1989 Ministry of Agriculture, Fisheries and Food
Administrative	-	Mr P Otley to September 1989 Mrs M Fry from October 1989 Department of Health

Dr A N B Stott, MB, ChB, FFOM was a member of the Committee from its reconstitution in 1988 until 18.4.90.