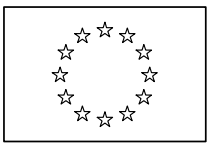


COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 28.10.2004
SEC(2004) 1372

COMMISSION STAFF WORKING DOCUMENT

on implementation of the Community Strategy for Endocrine Disrupters - a range of substances suspected of interfering with the hormone systems of humans and wildlife (COM (1999) 706)

COMMISSION STAFF WORKING DOCUMENT

on implementation of the Community Strategy for Endocrine Disrupters - a range of substances suspected of interfering with the hormone systems of humans and wildlife (COM (1999) 706)

TABLE OF CONTENTS

SUMMARY REPORT ON THE IMPLEMENTATION OF THE COMMUNITY STRATEGY FOR ENDOCRINE DISRUPTERS

In order to address the potential environmental and health impacts of endocrine disruption the Commission adopted a Communication to the Council and European Parliament on a Community Strategy for Endocrine Disrupters in December 1999 (COM(1999)706). The Strategy sets out a number of actions relating to, *inter alia*, identification of substances, monitoring, research, international co-ordination and communication to the public.

Following the adoption of the Strategy the Council invited the Commission to report regularly on the progress of the work. The first progress report[1] was presented in June 2001. This is the second progress report summarising the implementation of the Strategy under the period 2001-2003.

The Strategy contains actions on short, medium and long term. The work on short and medium term actions under the period have contributed to gather scientific data and to identify substances for further evaluation as endocrine disrupters with a view to prioritise testing, to guide research and monitoring efforts and to identify specific cases of exposure of target groups like consumers, workers and wildlife organisms. The long term actions include review and possible adaptation of policy and legislation.

A key short-term action is the establishment of a priority list of substances for further evaluation of their role in endocrine disruption. The work reported in the last progress report includes a study carried out in 2000 on behalf of the Commission. The study identified a candidate list of 553 substances, from which evidence of endocrine disruption or potential endocrine disruption was found for 118 substances. The results of the study were submitted to an opinion of the Scientific Committee for Toxicity, Ecotoxicity and the Environment, and to stakeholder consultation. Based on their recommendations two new studies have been launched in the period under review.

The first study is an in-depth evaluation of 9 candidate substances, namely 2,2'-bis(4-(2,3-epoxypropyl)phenyl)propane or BADGE, carbon disulphide, 4-chloro-3-methylphenol, 2,4-dichlorophenol, 4-nitrotoluene, o-phenylphenol, resorcinol, 4-tert octylphenol and 2,2',4,4'-tetrabrominated diphenyl ether or tetra BDE as well as 3 natural/synthetic hormones (oestrone, oestradiol and ethinyloestradiol). The candidate substances were selected after an analysis of the legal status of the 118 substances mentioned above that revealed that these 9 are neither restricted nor being addressed under existing Community legislation.

The study concluded that the natural oestrone and 17β-oestradiol and the synthetic hormone 17α-ethinyloestradiol all evidently caused effects on the reproduction and development of fish which are probably endocrine mediated. These effects occur at environmentally relevant concentrations and therefore these substances may present a risk to fish and other aquatic vertebrates. For substances where there is a potential for consumer exposure (BADGE through epoxy lining of food and drink cans and 4-chloro-3-methylphenol and resorcinol through pharmaceutical products) the data indicates that there is evidently no risk to consumers, including children, from current exposure patterns.

---

[1] Communication from the Commission on the implementation of the Community Strategy for Endocrine Disrupters (COM(2001)262)

The second study has addressed the remaining 435 substances for which there was insufficient data in the 2000 report to assess endocrine disruption or potential for endocrine disruption (due not to lack of data but to lack of resources to gather the data). The aim of the study has been to gather data/information on persistence, production volumes and legal status of these substances. This candidate list has been divided into three separate groupings of substances depending on the exposure, persistence and toxicological data availability (see Annex 1).

Out of the list of 435 candidate substances, 147 were deemed to have evidence of endocrine disruption or potential endocrine disruption. The assessment of their legal status showed that 129 were already subject to bans or restriction or were being addressed under existing Community legislation, although for reasons not necessarily related to endocrine disruption. 18 substances are neither restricted nor being addressed under existing Community legislation.

Regarding the short-term actions on information and communication, the Commission has finalised a study on *Information Exchange and International Coordination on Endocrine Disrupters*, which presents recommendations to promote a better cooperation in this area. In addition, a website[2] has been created, with a view to inform the public about the different Community initiatives related with this issue.

Monitoring to estimate exposure to endocrine disrupters is also included in the short-term actions. This area has been addressed under the European Environment and Health Strategy[3]. As part of the preparatory process leading to the European Environment and Health Action Plan 2004–2010[4] a technical working group on integrated monitoring was established, which in one of its subgroups covered endocrine disrupters in particular. The group has assessed the current monitoring situation and established options for action and recommendations.

As part of the medium-term actions, the Commission and Member States continue to participate in the OECD Endocrine Disrupter Testing and Assessment Task Force, which was set up in 1998 with the goal of developing agreed test methods for endocrine disrupters. The latest estimates are that agreed test methods for some environmental and human health effects will be finalised in 2005.

The Strategy also lists research and development as a medium-term action. Since 1999, under the 5th Community Framework Programme for Research and Technological Development, the Commission has spent over 60 million euros on endocrine disrupter research projects, with a range of topics from wild-life effects to multi-organic assessments of effects in humans. In 2003 a Cluster of Research on Endocrine Disruption in Europe (CREDO), was launched. The cluster consists of 4 projects encompassing 63 laboratories in Europe, with a total budget of 20 million euro. Under the 6th Community Framework Programme for Research and Technological Development (2002-2006), the topic of endocrine disruption has also been addressed principally under the "Food quality and safety" priority and to some extent in the "Sustainable development, global change and ecosystem" priority. A large-scale Network of Excellence (CASCADE) dealing with restructuring of European research in this domain was launched in 2004.

---

2 http://europa.eu.int/comm/environment/endocrine

3 Communication from the Commission on a European Environment and Health Strategy (COM(2003) 338 final)

4 Communication from the Commission: "The European Environment & Health Action Plan 2004–2010" (SEC(2004) 729)

Regarding long term actions, the issue of endocrine disrupters is being addressed in a number of policy areas. In the proposal for a new chemicals policy (REACH) endocrine disrupters are covered by the authorisation procedure for substances of very high concern. They are also being considered in the discussions on data requirements and principles for risk assessment of plant protection products. There is however a need for agreed test methods that can confirm whether or not "identified candidates" are real endocrine disrupters. Furthermore, they have been included in the evaluation scheme for biocidal products. In the case of drinking water a study has been carried out and submitted to stakeholder consultation. It has been recommended that no limit values for individual endocrine disrupters should be set up for drinking water at this stage. However there is a potential problem linked to the release of endocrine disrupting chemicals from materials in contact with drinking water and/or bottled water. For the identification of substances of concern under the Water Framework Directive endocrine disrupting substances are included in a specific category. As regards short-term emergency risk management the directive on general product safety has been replaced by a revised directive that has to be transposed into national legislation by 15 January 2004. Finally, the directive prohibiting the use of substances having a hormonal action for growth promotion in farm animals has been amended based on the opinion of the Scientific Committee on Veterinary matters relating to Public Health.

More detailed information is given in the annexes to this summary report as follows:

Annex 1: Figure outlining the grouping of substances for further evaluation

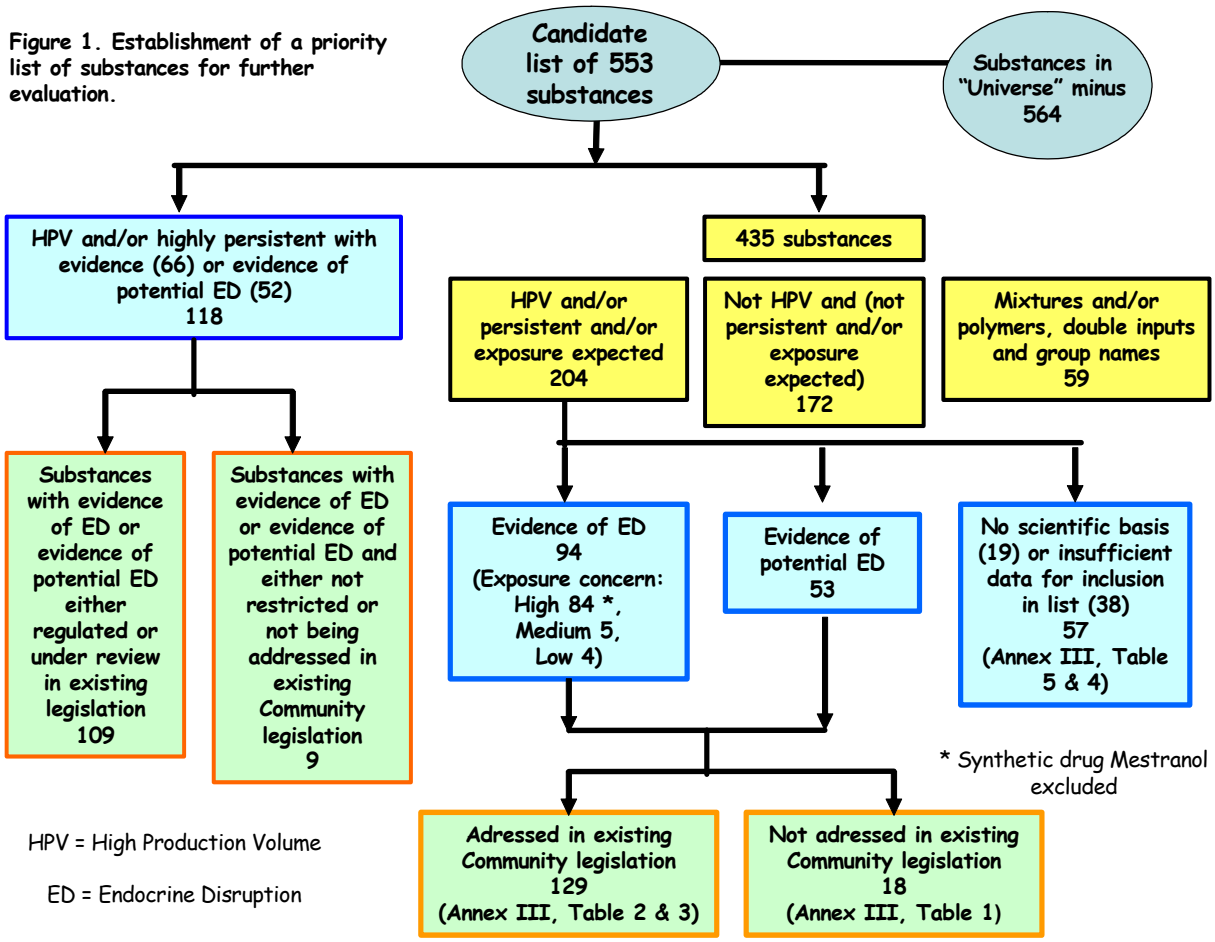
Annex 2: Detailed report on implementation of the Community Strategy for Endocrine Disrupters

Annex 3: Grouping of substances

Annex 4: Specific recommendations of the SCTEE

Annex 1: Figure outlining the grouping of substances for further evaluation

Figure 1. Establishment of a priority list of substances for further evaluation.



Annex 2: Detailed report on the implementation of the Community Strategy for Endocrine Disrupters

1. CONTEXT

Endocrine disrupters are a group of chemicals (natural, synthetic, industrial chemicals or by-products) exposure to which can cause adverse health effects in an intact organism or its offspring or (sub)population by altering the function of the endocrine system.

In wildlife, endocrine disrupters have been clearly shown to cause abnormalities and impaired reproductive performance in some species, and to be associated with changes in immunity, behaviour and skeletal deformities. In humans, endocrine disrupters have been suggested as being responsible for apparent changes seen in human health patterns over recent decades. These include declining sperm counts in some geographical regions, increased incidences in numbers of male children born with genital malformations and increased incidences of certain types of cancer that are known to be sensitive to hormones. More controversially, links have been suggested with impairment in neural development and sexual behaviour.

In order to address the potential environmental and health impacts of endocrine disruption the Commission adopted a Communication to the Council and European Parliament on a "Community Strategy for Endocrine Disrupters" in December 1999. This Strategy sets out a number of actions relating to, *inter alia*, identification of substances, monitoring, research, international co-ordination and communication to the public.

On 26 October 2000, the European Parliament adopted a Resolution on endocrine disrupters, emphasising the application of the precautionary principle and calling on the Commission to identify substances for immediate action.

On 30 March 2000, the Environment Council adopted Conclusions on the Commission Communication in which it stressed the precautionary principle, the need to develop quick and effective risk management strategies and the need for consistency with the overall chemicals policy. The Council invited the Commission to report back on the progress of the work at regular intervals, and for the first time in early 2001.

A first progress report of the "Community Strategy for Endocrine Disrupters" was presented in June 2001 (COM(2001)262). This is the second progress report summarising the implementation of the Strategy under the period 2001-2003.

2. PROGRESS ON SHORT-TERM ACTIONS

The short-term actions have focused on the need to gather up-to-date scientific information on endocrine disruption and on the extent to which it is affecting people and wildlife. The work on identification of substances for further evaluation of their role in endocrine disruption has continued. Actions have also been taken in the area of public communication and to gather information concerning different initiatives

on endocrine disrupters. Furthermore, the issue of monitoring programmes to estimate exposure has been addressed.

2.1. Establishment of a priority list of substances for further evaluation of their role in endocrine disruption

In June 2000, a first priority list of substances for further evaluation of their role in endocrine disruption was set up (Study report entitled: "Towards the establishment of a priority list of substances for further evaluation of their role in Endocrine Disruption – preparation of a candidate list of substances as a basis for priority setting" carried out by BKH Consulting Engineers, NL).

In a first step, a candidate list of 553 substances was identified, from which evidence of endocrine disruption or potential endocrine disruption was found for 118 substances. An analysis of the legal status of these 118 substances revealed that 9 substances were neither restricted nor being addressed under existing Community legislation.

Following a wide consultation on the BKH report, it was decided to make an in-depth evaluation of these 9 candidate substances, namely 2,2'-bis(4-(2,3-epoxy-propyl)phenyl) propane or BADGE, carbon disulphide, 4-chloro-3-methylphenol, 2,4-dichlorophenol, 4-nitrotoluene, o-phenylphenol, resorcinol, 4-tert octylphenol and 2,2',4,4'-tetrabrominated diphenyl ether or tetra BDE as well as for 3 natural/ synthetic hormones (oestrone, oestradiol and ethinyloestradiol).

It was also considered important to gather data/information on persistency, production volumes and legal status of the remaining 435 candidate substances for which there was insufficient data in the BKH 2000 report to assess endocrine disruption or potential for endocrine disruption (due not to lack of data but to lack of resources to gather the data).

Thus in 2001, the two studies were launched simultaneously. The first one, entitled "Study on the scientific evaluation of 12 substances (9+3) in the context of endocrine disrupter priority list of actions", was carried out by WRc-NSF (UK) and the "Study on gathering information on 435 substances with insufficient data", was carried out by BKH-RPS Group (NL).

2.1.1. "Study on the scientific evaluation of 12 substances in the context of endocrine disrupter priority list of actions"

The evaluation framework of the 12 substances that has been developed in this study is designed to represent a stage between the identification of potential substances of concern (in the prioritisation process) and any potential policy action. This assessment aims to review the nature and extent of endocrine disrupting effects, in humans and wildlife, of identified chemicals (and potentially others in the future) in a criteria-based approach. The developed evaluation framework considers if the effects can occur at lower concentrations than those causing effects at systemic level and if particular target groups of workers, consumers or wildlife organisms in the environment are likely to be exposed to concentrations of chemicals which exceed effect thresholds due to current emission patterns. It needs to be recognised that the framework does not involve carrying out a full risk assessment of a substance under

Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances.

The approach consists of two basic tasks:

- Identification of a robust dataset and evaluation of the nature and validity of the available data.

- Assessing the implications of the dataset in terms of whether there is sufficient robust information to draw conclusions on the nature and extent of endocrine disruption in humans and/or wildlife ("weight of evidence approach") and (if not) what further evidence is required to draw conclusions.

2.1.1.1. Assessment of potential endocrine disrupting effects in humans

The weight of evidence approach concluded that for a number of substances (BADGE, 4-chloro-3-methylphenol, 2,4-dichlorophenol, 4-nitrotoluene, o-phenylphenol and 4-tert octylphenol) the available *in vivo* data indicate that no adverse effects on reproduction and development in laboratory mammals (which may be endocrine mediated) occur at exposure levels where general systemic toxic effects are observed. However, there is uncertainty with data for 4-chloro-3-methylphenol, 2,4-dichlorophenol, 4-nitrotoluene and resorcinol[5] since although data on reproduction and developmental endpoints is available, a definitive multi-generational reproduction study has not been conducted.

2.1.1.2. Assessment of potential endocrine disrupting effects in wildlife

For most of the industrial substances (BADGE, 4-chloro-3-methylphenol, 2,4-dichlorophenol, 4-nitrotoluene, o-phenylphenol and 4-tert octylphenol) the available aquatic data show that effects in reproduction in invertebrates and fish are observed at slightly lower or similar threshold levels than those for general toxic effects (i.e. lethality and/or growth) in these species. However, there is generally no data in the reported studies which indicate whether the observed effects on reproduction are endocrine mediated. Indeed in invertebrates there is limited knowledge of the endocrinology of many taxonomic groups and it is uncertain whether reproductive processes are modulated by oestrogens or androgens.

For consideration of the risk of a substance to target groups of humans and/or wildlife a Margin of Safety (MOS) approach has been adopted. The MOS (for consumer use) is calculated by dividing the lowest No Observable Adverse Effect Level (NOAEL) to a compound by its Systemic Exposure Dose (SED) during normal use[6]. Using the available exposure data the MOS for the aquatic compartment indicated that 4-chloro-3-methylphenol and 4-nitrotoluene do not represent a risk to aquatic organisms whereas 2,4-dichlorophenol and 4-tert octylphenol may represent a risk.

---

5 The Resorcinol Task Force has already formulated a comprehensive test programme to address the main uncertainties and/or gaps related with the potential adverse effects of the exposure to resorcinol

6 If MOS > 100: the substance is regarded as safe for use. The value of 100 can be modified to account for perceived sensitive target groups (children). Approach based on the "Notes of guidance for testing of cosmetic ingredients for their safety evaluation". SCCNFP/0321/00 Final, 2001

Regarding the natural vertebrate steroids, 17β-oestradiol and oestrone, and the synthetic steroid 17α-ethinyloestradiol all evidently cause effects on the reproduction and development of fish which are probably endocrine mediated. These effects occur at environmentally relevant concentrations and, therefore, these substances can represent a risk to fish and other aquatic vertebrates. The potential for effects is probably greater following exposure to natural steroids (17β-oestradiol and oestrone) than the synthetic steroid 17α-ethinyloestradiol.

2.1.1.3. Assessment of cases of particular exposure risk

Substances such as BADGE, 4-nitrotoluene, 4-tert octylphenol and resorcinol (in hair colouring dyes) are produced in closed systems and/or are used as chemical intermediates which minimises the potential for worker exposure. A number of the industrial substances (2,4-dichlorophenol, 4-nitrotoluene and 4-tert octylphenol) are used in the manufacture of products from which it is probable that there is no or extremely limited consumer exposure. However, information on potential consumer exposure for these substances is limited or absent and it is difficult to draw robust conclusions on the risk to vulnerable groups. Further targeted monitoring to provide this data is needed.

For substances where there is a potential for consumer exposure (BADGE through epoxy lining of food and drink cans and 4-chloro-3-methylphenol and resorcinol through pharmaceutical products) the data indicates that there is evidently no risk to consumers, including children, from current exposure patterns.[7]

2.1.2. "Study on gathering information on 435 substances with insufficient data"

The activities of this study constitute a follow-up of the BKH 2000 report. The main objective was to define a methodology, by which to investigate the remaining 435 candidate substances identified in the BKH 2000 report, and gather data/information with a view to establish priorities for further evaluation of the role of these substances in endocrine disruption.[3]

The categorisation of the substances has been prepared using a "refined methodology" (after consultation with stakeholders and the Commission Scientific Committees) based on the following screening criteria: persistency, production data, consumption/use patterns, environmental concentrations (range), evaluation of endocrine disrupting-related effects taking into consideration the relevance of the effect parameter, test reliability, dose-response relationship, endocrine disruption potency, endocrine disruption structure-activity relationships, comparison with systemic toxicity and evaluation of exposure concern to humans and wildlife.

From the working list of 435 substances, 204 have been classified as high production volume chemicals (HPV), persistent in the environment and to which human or wildlife exposure can be expected. In a second step, the endocrine disrupting effects in humans and wildlife has been evaluated and the substances were classified into 3 categories based on the available evidence. This analysis leads to a list of 94

[7] The final study report is available in the Commission endocrine disrupters' website at: http://europa.eu.int/comm/environment/endocrine

candidate substances with evidence of endocrine disruption, 53 with potential evidence of endocrine disruption and 57 with no scientific basis for inclusion in the list or insufficient data to decide.

In a final step, the evaluation of the exposure concern to humans and wildlife resulted in a list of 84 substances[8] with high-exposure concern, 5 substances with medium-exposure concern and 4 substances with low-exposure concern. Substances identified as having high concern for exposure, belong to 34 different chemicals groups, including, chlorinated paraffins, phthalates, bisphenols, PAHs, PCBs, dioxins/furans, triazines, pyrimidine fungicides and pyrethroids.

2.1.3. Consultation process

In a second step in this priority setting exercise, the Commission's Scientific Committee for Toxicity, Ecotoxicity and the Environment (CSTEE), has been consulted on the scientific relevance of these two studies and the methodology used to establish a priority list of substances for further evaluation. The Opinion of the CSTEE, adopted on 12-13 November 2003[9], expressed its agreement with the overall scientific approach of the two reports and finds the developed evaluation framework appropriate for priority setting. Regarding the general approach, it concluded that the scientific preliminary evaluation provides an appropriate basis and it emphasized that the prioritisation should be an iterative process so that new information is evaluated when it becomes available.

For the *WRc study* the CSTEE considers that the report reflects state-of-the-art knowledge regarding the compounds evaluated. Assessment of the data, methodology and assumptions used to evaluate the effects of the assessed compounds are sound. However, the detailed assessment of the individual compounds disagrees with the conclusion for 2,4-dichlorophenol with respect to wildlife. Considering the very limited data set on the environmental effects of this compound, the CSTEE is of the opinion that, based on the data in the report, no conclusions can be taken on the risks posed by this chemical to the environment.

The CSTEE agrees that the approach taken in the *BKH report* provides a significantly improved assessment in comparison with the BKH 2000 report, in particular with the use of exposure and persistency data. Furthermore missing data on environment is clearly identified in the report. The CSTEE notes that available data on endocrine disrupter effects especially for pesticides have not been used to any great extent. Several chemicals are plant protection products and a comprehensive risk assessment is conducted under Directive 91/414/EC. The use of this information has been very limited, thus the CSTEE considers that this information should be assessed. Regarding individual chemicals industry provided data only in very few cases. Specific considerations/recommendations made by the CSTEE are listed in Annex 4.

---

8 The synthetic contraceptive drug, Mestranol, is excluded from this review. The effects of this synthetic hormone have already been studied using a weigh of evidence approach (WRc-NSF report)

9 Opinion of the CSTEE, adopted during the 40th plenary meeting. Brussels, 12-13 November 2003 http://europa.eu.int/comm/food/fs/sc/sct/out208_en.pdf

In parallel, stakeholders, including EU Member States, industry associations and non-governmental organisations were consulted.[10] Member States and NGOs considered that during the last years, important progress has been made in this area and that this approach with the new refined methodology is a good starting point for categorisation of substances and further evaluation.

In addition the chemical industry expressed concern about the fact that the list could be perceived as a definitive one and not as a list of candidate substances for *further* evaluation of their role in endocrine disruption, so they highlight the active role that the Commission has to play in providing information to the public.

2.1.4. Priority setting

The list of substances for further evaluation that has been established in the framework of this strategy can be used as a mean to prioritise testing, to guide research and monitoring efforts, to identify specific cases of consumer use and ecosystem exposure and to make full use of existing instruments where appropriate.

In the context of the Community Strategy for Endocrine Disrupters, the Commission does not intend to duplicate work on candidate substances for which risk assessments are underway or due under existing Community legislation. The assessment of the legal status of the 147 candidate substances (out of the list of 435) deemed to have evidence of endocrine disruption or potential endocrine disruption showed that 129 were already subject to bans or restriction or were being addressed under existing Community legislation, although for reasons not necessarily related to endocrine disruption. 18 substances are neither restricted nor being addressed under existing Community legislation (Annex 3, Table 1).

2.2. Communication to the public

With the aim of making information available and accessible to the public in an appropriate form and to ensure a feedback loop from the public to the regulatory activities, the Commission has set up a new web site on endocrine disrupters[11].

This website contains an overview of the issue and has been designed to bring the information from a general to a more detailed level on the different activities (communications, studies, workshop reports, research activities), developed by the Commission in the framework of this Strategy.

2.3. Information exchange and international cooperation

The Commission held a European workshop on endocrine disrupters on 18-20 June 2001 in Aronsborg (Bålsta), Sweden, with sponsorship from Swedish Ministry from Environment, Swedish National Chemicals Inspectorate (KEMI), OECD, WHO and the European Environment Agency. The objective was to address several elements of the Strategy, including the establishment of monitoring programmes, information exchange, international coordination, development of test methods/testing strategy,

[10] Informal Stakeholder Meeting, Brussels 15-16 October, 2003

[11] http://europa.eu.int/comm/environment/endocrine

research and development in order to make recommendations for future development in each of these areas.

The workshop recognised that the area of endocrine disruption and the study of the potential effects of this type of chemicals on human health and wildlife was one of increasing concern to all sectors of society. This concern was evident in the increasing level of research, which is being funded both nationally and internationally by governments, regulatory bodies and industry. The importance of close liaison between the different bodies and sharing of information was highlighted to ensure that the best possible use is made of available resources. It was evident that endocrine disruption is a complex area and that there are still problems (particularly for human health) in establishing causal links between exposure to suspected endocrine disrupters and any effects measured.

Given the plethora of programmes addressing policy, testing and scientific research that have been initiated across the world, the Commission has recognised that there is an important need to promote international information exchange and co-ordination so as to avoid duplication of effort and make best use of scarce resources and has launched a study on "Information Exchange and International Coordination on Endocrine Disrupters" designed to address this requirement. The study has been carried out by MRC Institute for Environment and Health (UK).

In order to ensure "currency" of the information gathered, the study was conducted within a short timescale and was, of necessity, limited in scope and extent. It was certainly not intended to represent an exhaustive account of global research activities on endocrine disruption. Rather, it was intended to identify some key areas of activity within Europe, the US and Japan and to seek broad opinion and views on this issue.

The study comprised a number of inter-related elements. Information on the activities, opinions, approaches and outputs of various member and non-member EU States and stakeholder organisations was obtained through semi-structured interviews, supplemented with data from web sites. The information obtained was subject to detailed critical analysis (so called SWOT-analysis, i.e. identification of strengths, weaknesses, opportunities and threats) to compare and contrast the approach of the EC with those of its Member States and the governments of the USA and Japan. In addition, key reports and assessments published by governmental organisations or other authoritative bodies were identified, and short summaries prepared to further highlight relevant findings, opinions, decisions and recommendations.

The Commission has provided financial contribution to the publication of a comprehensive report on *Global Assessment of the State-of-the-Science of Endocrine Disruptors*, published in 2002 by the International Programme on Chemical Safety (IPCS). This document[12] is a result of wide collaborative international effort. The Commission was also represented in the *6th International Symposium on Environmental Endocrine Disrupters 2003*, as well as in the WHO/IPCS workshop on *Endocrine Disruptors: Research Needs and Future Directions*, both held in Japan,

[12] The document can be downloaded from http://ehp.niehs.nih.gov/who

which have laid the foundation for further collaboration between the EU, Japan, and the USA in the field of endocrine disruption.

2.4. Establishment of monitoring programmes to estimate exposure to and effects of the substances on the ED priority list

With a view to integrating the areas environment, health and research, a working group on integrated environment and health monitoring for Endocrine Disrupters was set up under the European Environment and Health Strategy[13] in September 2003. The working group has prepared a baseline report including an overview of existing endocrine disrupters monitoring programmes, the problems or shortcomings of existing monitoring systems, and requirements for integrated environment and health monitoring of endocrine disrupters.

The technical working group recognised the need to prioritise candidate endocrine disrupting chemicals for integrated monitoring, based on both toxicological information and assessment of available exposure data, according to current criteria for risk analysis. During the present exercise the "Category 1" list of substances (candidate substances with evidence of endocrine disruption), as presented in the BKH 2000 report was used to identify endocrine disrupting chemicals targeted by monitoring activities. It has been recognised that this is not a definitive list of chemicals but it was deemed to be the best starting point.

In the second stage the working group has established options for action and recommendations that have been used to develop a general approach to integrated environment and health information in the Commission's Environment and Health Action Plan 2004-2010.

2.5. Other short-term actions

The Commission has recently finalised a study concerning human exposure to endocrine disrupters through drinking water.[14] It has been noted in the study report that most of the European surface waters and some ground waters are contaminated with low levels of endocrine disrupters and that without adequate drinking water treatment steps, low levels of endocrine disrupters can be expected in drinking water. However, these conclusions have been reached relying on few available data (only some countries) and in the future a European wide assessment on the occurrence of endocrine disrupters in drinking water is needed. For this purpose the establishment of monitoring programmes is required.

Concerning the human health risks, it has been concluded that there is not enough knowledge to evaluate the potential effects from exposure to low levels of endocrine disrupters via drinking water. Based on the scientific literature available, it can be concluded that the contribution of drinking water to the total exposure of this group of chemicals to human beings is very low and many endocrine disrupters especially bio-accumulating compounds, are taken up by food in higher amount on a daily basis.

---

13 COM(2003)338 final

14 Study on "Endocrine Disrupters in Drinking Water". Fraunhofer Institute for Molecular Biology and Applied Ecology. Schmallenberg, Germany, February 2003

The study concluded that there is evidence showing that endocrine disrupting chemicals of low potency, such as organotin compounds, phthalates, bisphenol A and alkyl compounds can migrate from certain organic materials used, which are in contact with water intended for human consumption. Bottled waters can also become contaminated by potential endocrine disrupters, which migrate from the bottles or containers in which they are stored.

3. PROGRESS ON MEDIUM-TERM ACTIONS

As part of the medium-term actions, the Commission is supporting the development and validation of test methods by working closely with Member States to coordinate the European Union input to OECD. The medium-term actions also include research and development.

3.1. Identification and assessment of endocrine disrupters

The availability of agreed test strategies/methods to identify and assess endocrine disrupting chemicals is a basic requirement for comprehensive legislative action aimed at protecting people and the environment from the potential dangers posed by these chemicals.

The Commission participates in the OECD Endocrine Disrupters Testing and Assessment Task Force (EDTA), which was set up in 1998 with the aim of developing an internationally harmonised testing strategy. The Task Force reached a full consensus on a "conceptual framework" for a testing strategy, which can be used as a "toolbox", which means providing the tools in a well-organised way and with an explanation of their use and what kind of information they provide, without dictating when to use it. This framework generates information on mechanistic data *in vitro*, *in vivo* and/or on other adverse effects from endocrine and other mechanisms.[15]

In addition the Task Force has defined a set of methods to be developed and validated (comparison of sensitivity, relevancy and reliability of the tests), for testing the effects of endocrine disrupters on human health and/or the environment and the experimental work has been organised into different Validation Management Groups (VMG): VMG-non animal tests, VMG-ecotoxicology and VMG-mammalian.

The latest estimates are that agreed test methods for some environmental and human health effects will be finalised in 2005. Test methods for environmental effects include: fish screening assay, amphibian metamorphosis assay and some invertebrate tests (e.g. copepod test). Test methods for human health includes: Uterotrophic assay (submitted for approval to the National Coordinators this year), Hershberger assay and enhanced TG 407.

3.2. Research and Development

In the Fourth Framework Programme of Research and Technological development (1995-1998) the topic of endocrine disruption emerged as a research priority as a response to rising public and policy concerns. Around 12 million euros were spent on

[15] http://www.oecd.org/document/62/0,2340,en_2649_34377_2348606_1_1_1_37465,00.html

projects dealing with endocrine disruption. Since most effects of endocrine disrupting chemicals had at that time been observed in the environment and, in particular, in the aquatic world, many of the projects focused on fish populations to understand the mechanisms involved, to develop test methods and to identify potential endocrine disrupters. However, projects on other than wild-life effects of endocrine disrupting chemicals were also initiated, such as effects on farm animals or human reproduction. Final reports are available on the web.[16]

In the Fifth Framework Programme of Research and Technological development (1998-2002) the Quality of Life and Management of Living Resources Thematic Programme has spent over 44 million euros on endocrine disrupters projects and has sponsored 20 shared-cost research projects. The human health issues associated with endocrine disrupters have been mainly funded through the key action Environment and Health. Research projects on effects of endocrine disrupting chemicals on human reproductive health have continued and expanded. However, the scope of the studies has diversified: several projects deal with effects on tissues or organs other than the reproductive system (brain, mammary glands, bone, etc). A few projects are focused on technological development, be it sensor development for detection of endocrine disrupting chemicals or new in vivo (transgenic animals) or in vitro testing methods. Finally, two projects focus on the protective effects of phytoestrogens for cancer or osteoporosis. A majority of these projects will have regulatory policy implications, since they address the issue of low-dose, long-term or multiple exposure to endocrine disrupting chemicals and will bring new data concerning these issues.

In addition to individual project websites available, DG Research has created and maintains a webpage on ED-related research, including ongoing and past research projects, future activities including calls for proposals as well as an extensive list of links to various organisations worldwide dealing with issues related to ED[17]. The ED research-related issues have also been presented in numerous scientific conferences, project meetings, and public fora, including the 2004 Green Week event in Brussels. DG Research of the Commission has also published a *Joint Catalogue of Endocrine Disrupter Projects Financed by the European Commission in the IV and V Framework Programmes*[18].

The Energy, Environment and Sustainable Development Programme has financed seven projects including two projects belonging to the CREDO Cluster (see below) with a total budget of around 16 million euros where endocrine disruption related research activities are included. The projects are supported under the key actions Sustainable Management and Quality of Water and Sustainable Marine Ecosystems.

In 2001, the two programmes, as a direct response to the call to enhance research efforts by the European Commission's Strategy on endocrine disrupters, launched a joint call focused on endocrine disrupters, culminating in the formation of the CREDO cluster[19] (the Cluster of Research into Endocrine Disruption in Europe) which was launched in April 2003. The cluster consists of four projects

16 http://europa.eu.int/comm/research/endocrine/projects_completed_en.html
17 http://europa.eu.int/comm/research/endocrine/index_en.html
18 http://www.cordis.lu/life/ and http://europa.eu.int/comm/research/quality-of-life.html
19 http://www.credocluster.info

encompassing 63 laboratories in Europe and with a total budget of approximately 20 million euros. The cluster is co-ordinated by the EDEN project[20]. Seven other projects, initiated in 2002 or 2003, will be associated to the cluster. This research programme is complementing ongoing efforts to assess the risks posed by chemicals and providing a direct contribution to the EU Strategy for Endocrine Disrupters and chemicals policies, since it will contribute to forming a sound scientific base for evidence for endocrine disrupting capabilities of chemicals. The cluster is to become a point of reference of European research in this field and its activities are open to other ongoing EU-funded projects in this area.

Projects dealing with food related aspects of endocrine disrupters in the wider context of hormones in meat have also been funded.

In the Sixth Framework Programme of Research and Technological development (2002-2006), the topic of endocrine disruption is being specifically addressed by Priority 5 (Food Quality and Safety) and by Priority 6 (Sustainable Development, Global Change and Ecosystems)[21].

In Priority 5, endocrine disruption is covered in particular by the sub-area Environmental Health Risks. The objectives are to identify the environmental factors that are detrimental to health, understand the mechanisms involved and determine how to prevent or minimise these effects and risks. One research focus is the impact of endocrine disrupters.

In this context, a large Network of Excellence, CASCADE[22], focused on research, risk assessment, education, and information on chemicals as contaminants in the food chain was launched in February 2004. This 5-year project with a budget of 14.4 million euros and 197 members from 8 European countries and 18 institutes has as its objective: (i) creation of a durable, structured, and multidisciplinary network of experts in this field through integrated teaching, management, dissemination, and scientific activities; (ii) spreading excellence beyond the Network of Excellence (NoE) to educational organisations, the general public, public and private organisations, and policy makers; (iii) improving risk assessment in this field; (iv) harmonisation of analytical methods and other methodologies, risk assessment procedures and standards; finding of common approaches; (v) improving interdisciplinary competence and thinking amongst scientists, in particular those who are at an early stage of their career, in the area related to human health effects caused by chemical contaminants in the food; (vi) providing novel scientific information on the mechanism of action of chemical residues and contaminants in food. The focus will be in particular on chemicals with endocrine disrupting properties.

A smaller-scale 3-year specific targeted research project has started in 2003 focused on the effects of mixtures of neurotoxic substances (PCBs, methyl mercury) contaminating food (DEVNERTOX).

In Priority 6, under the area of Complementary Research, a call for proposals was launched in 2003 to address the issues related to *development of risk assessment*

---

20 http://www.edenresearch.info

21 http://www.cordis.lu.food

22 www.cascadenet.org

methodologies especially focusing on effects of combined exposures to several stressors including mixtures of chemicals. In addition *methods for risk assessment of pharmaceuticals in the environment* has been covered. The selected projects are under negotiation.

4. PROGRESS ON LONG-TERM ACTIONS

The long-term actions include the review and adaptation of existing legislation, governing the testing, assessment and use of chemicals and substances within the EU.

4.1. Legislative actions

4.1.1. Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

On 29 October 2003, the Commission adopted a proposal for a Regulation of European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restrictions of Chemicals (REACH), establishing a European Chemicals Agency and amending Directive 1999/45/EC and Regulation (EC) on Persistent Organic Pollutants.[23] One of the key elements of the proposed regulation is an authorisation procedure for substances of very high concern. Substances of very high concern include those that are carcinogenic, mutagenic or toxic to reproduction (CMRs), category 1 and 2, and those that meet the criteria in the proposal for substances that are persistent, bioaccumulating and toxic (PBTs) or very persistent and very bioaccumulating (vPvBs). In addition, substances that are identified, on a case-by-case basis through a procedure set out in the proposal, as causing serious and irreversible effects to humans or the environment which are equivalent to those of the CMRs, PBTs and vPvBs are also considered to be substances of very high concern and thus subject to authorisation. Such substances include those having endocrine disrupting properties.

The authorisation procedure requires the Commission to give specific permission before such a substance could be used for a particular purpose, marketed as such or as a component of a product. Given that many of the serious human health effects which have so far been associated with endocrine disrupting chemicals are testicular cancer, breast cancer, prostate cancer, decrease in sperm quality, cryptorchidism and hypospadia, it is likely that many endocrine disrupter candidate substances would fall under this authorisation procedure directly as a CMR substance. Furthermore, adverse effects on the endocrine system of wildlife species have been causally linked to certain persistent, bioaccumulating and toxic substances. Such substances would be subject to authorisation as a result of their PBT-properties. It should be noted that many of the endocrine disrupter candidate substances are pesticides and by-products, formed for example during combustion, and therefore not within the scope of REACH. The number of additional substances out of the endocrine disrupter candidate list to fall under the authorisation procedure on a case-by-case basis is not possible to predict because of lack of data, but might potentially be a few dozen.

---

[23] COM(2003) 644 final

4.1.2. Directive 2000/60/EC establishing a framework for Community action in the field of water policy

The Water Framework Directive sets environmental objectives of good chemical status for surface waters and for the prevention of pollution of groundwater.

For **surface waters**, the Directive provides for a two tiered approach to control chemical pollution, which includes actions at national level and EU wide action.

At the *national level*, Member States are required to identify chemical pollutants of significance for each of the water bodies (an indicative list of the main pollutants is included in Annex VIII of the Directive), to set quality standards for the water, to establish emission control measures and to achieve these standards by 2015. A specific category includes those *"substances and preparations, or the breakdown products of such, which have proved to possess carcinogenic or mutagenic properties which may affect steroidgenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment"* (Annex VIII – Group 4). This means that there is an obligation for Member States to take action to prevent human exposure of endocrine disrupting substances via the aquatic environment. This action shall be coordinated in river basins, and a programme of measures shall be in place in 2009 and become operational in 2012.

In the meantime, the existing legislation, Directive 76/464/EEC[24], on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community shall be implemented in accordance with the principles outlined above of the Water Framework Directive.

At the *Community level*, the WFD sets out a strategy against pollution of surface waters by chemical pollutants (Article 16). This strategy includes the identification of substances of particular concern at Community level, and the adoption of environmental quality standards and emission controls for such substances. The first list of 33 substances was adopted in 2001[25], and at present the Commission is preparing a proposal for the quality standards and emission controls for these substances. It should be noted that, of these 33 substances, 21 are candidate endocrine disrupting substances for which evidence or potential evidence of endocrine disruption was found in the BKH reports (BKH reports 2000-2003).

The list of substances is to be reviewed every 4 years, and as further knowledge will be gathered regarding endocrine disrupting properties, this information could be taken into account in the future prioritisation of substances for action at Community level.

From the first priority list, certain substances can also be classified as "priority hazardous" and should be subject to complete phase-out of all emissions, losses and

---

[24] Directive 76/464/EEC: Council Directive of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community. OJ L129, 18.5.1976, p23

[25] Decision N° 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy and amending Directive 2000/60/EC. OJ L 331, 15.12.2001, p.1

discharges during a 20 year timeframe. Endocrine disruption could become important criteria for sorting substances or groups of substances into this group.

Regarding **groundwater**, the Commission has adopted a proposal for a Groundwater directive, where it recommends establishing threshold values (established by Member States for defining the groundwater good chemical status) for a minimum list of pollutants (Annex III of the directive). Although endocrine disrupters are not explicitly listed, in principle they could be covered by this clause, if Member States identified them and considered that they could represent a risk for the pollution of groundwater. This proposal also includes the requirement to identify and reverse significant increasing trends in pollutant concentrations, including endocrine disrupters.

Regarding prevention, direct and indirect discharges of pollutants are prohibited both by the Water Framework Directive and the Groundwater Directive proposal (Article 6 of the proposal), thus ensuring a continuity of the protection regime of the 80/68/EEC Directive which will be repealed in 2013.

4.1.3. Directive 98/83/EC on the quality of water intended for human consumption (Drinking Water Directive).

At this stage, and in light of the results of the study report *Endocrine Disrupters in drinking water* and the stakeholder consultation process carried out[26], it has been recommended that no limit values for individual endocrine disrupters in the Drinking Water Directive should be set up.

More toxicological and monitoring data are needed to evaluate the risk of consumption of drinking water, especially in places with a higher risk of pollution. Future limit values for the total potential endocrine effects can also be proposed, at a later stage, once agreed tests are available.

The problem posed by the release of endocrine disrupting chemicals from materials in contact with drinking water and/or bottled water needs to be addressed in the frame of the ongoing work of the European Acceptance Scheme (EAS). This scheme will include the assessment of the adverse effects of substances on human health and possibly endocrine disrupter effects and the use of positive lists for the classification of substances released from materials that are in contact with drinking water. In the future the EAS will be applied throughout the EU.

4.1.4. Directive 92/59/EC on General Product Safety (GPSD)

In the context of consumer exposure, Directive 92/59/EC on general product safety has been identified in the Commission Communication (COM(1999)706) as a key risk management instrument for short-term emergency action. It should be noted that this Directive has been replaced by a revised Directive (2001/95/EC), which had to be transposed into national legislation by 15 January 2004. This Directive contains new provisions covering a clarification and enlargement of the scope of the Directive, a stronger role for European standards, additional obligations for

[26] Seminar on drinking water, Brussels 27 - 28 October 2003

producers and distributors, a ban on export of prohibited products, reinforcement of the obligations and powers of the Member States for market surveillance, collaboration between Member States and the Commission, improvement of the RAPEX system (Rapid Alert system for non-food products), a simplification of conditions and procedures for urgent measures at Community level and last but not least an improvement in transparency to the general public.

4.1.5. Directive 91/414/EEC concerning the placing on the market of Plant Protection Products.

Directive 91/414/EEC sets out a Community harmonised framework for authorisation, use and control of plant protection products. A basic principle of the Directive is the development of a positive list (Annex 1) of active substances that are acceptable for the environment, human and animal health. Once a substance is included in the positive list Member States may authorise the use of products containing them.

In 1992, the European Commission started a Community-wide review process for all active ingredients used in plant protection products within the European Union. In a review process based on scientific assessments, each applicant had to prove that a substance could be used safely regarding human health, the environment, eco-toxicology and residues in the food chain. This review programme will be completed by 2008, in a joint effort between the European Food Safety Authority[27] which deals with risk assessment issues and the European Commission that retains the risk management decision.

In accordance with the procedure laid down in Directive 91/414/EEC and having regard to upgraded scientific and technical knowledge, the Commission has organised the work to amend Annexes II and III of the Directive (data requirements for chemical active substances and data requirements for products containing those substances). Experts are discussing new specific data requirements and principles for risk assessment of endocrine disruption and will report to the Commission. It is envisaged that the European Food Safety Authority should also provide an opinion on the possible amendments to be proposed by the Commission. The finalised proposal would be submitted to the Standing Committee on the Food Chain and Animal Health for a formal opinion which could be delivered by qualified majority. Because the competent authorities have highlighted the need for having a test procedure which could confirm whether or not "identified candidates" are real endocrine disrupting substances it is foreseen that as soon as agreed test methodologies are endorsed by the OECD, these could be integrated into the assessment process. In the meantime, where substances are currently being evaluated and where there is a suspicion of endocrine disrupting potential of a substance, additional testing has been requested and performed, and the results assessed. Several substances have so far been tested according to a specific protocol called *fish full life cycle test*. The results of these tests have allowed competent authorities to resolve doubts about those substances. This work continues in and beyond 2004.

[27] http://www.efsa.eu.int

4.1.6. Directive 98/8/EC concerning the placing of biocidal products on the market

The Biocidal Products Directive lays down rules and procedures for approval of the active substances used in biocidal products at Community level and authorisation of biocidal products in the Member States. The scope of the Directive encompasses 23 product types divided into the four major areas, disinfectants, preservatives, pest control and other biocidal products.

The Directive established a 10 years transitional period from its entry into force, 14 May 2000, for the purpose of conducting a systematic examination of "existing" active substances. After such an examination, a decision is taken to include or to not include the active substance in Annex I (active substances in biocidal products) or IA (active substances in low-risk biocidal products) to the Directive. Following such a decision, Member States shall ensure that authorisations or, where relevant, registrations for biocidal products containing that active substance are in compliance with the provisions of the Directive and where necessary the authorisations are granted, modified or cancelled as appropriate. Details of the review programme have been laid down in Commission Regulations 1896/2000 and 2032/2003.

The harmonisation of the biocidal products market is achieved by having a common set of data requirements on both active substances and biocidal products containing those active substances, and by assessing and evaluating the submitted data in accordance with harmonised evaluation criteria, the so-called "uniform principles" (see Annex VI of the Directive). In accordance with the uniform principles, a number of toxicological and ecotoxicological effects arising from the exposure of humans and the environment to biocidal products have to be taken into account, among them also reproduction toxicity and other special properties such as endocrine effects. In line with the provisions of the Directive and to facilitate the day-to-day implementation of the Directive, technical notes for guidance on data requirements was adopted. However, at the time of drafting the guidance documents, for several endpoints no clear defined or standardised test methods did exist and consequently the applicants were cautioned that it is expected of them to supervise the development of relevant and current methods.

New test methods are continuously being developed and the applicant should be currently updated. Among these endpoints the endocrine disruptors has been highlighted for special care and it is requested to check for the latest test methods available, as several international programmes at the moment attempt to develop these tests.

4.1.7. Directive 96/22 concerning the prohibition on the use in stock-farming of certain substances having a hormonal or thyrostatic action and beta-agonists

The use of substances having an oestrogenic, gestagenic or androgenic effect is restricted under Directive 96/22/EC concerning the prohibition on the use in stock-farming of certain substances having a hormonal or thyrostatic action and beta-agonists as amended by Directive 2003/74/EC. The Directive prohibits the use of substances having a hormonal action for growth promotion in farm animals and identifies precise circumstances under which they may be administered to food producing animals for other purposes.

The measure is based on the 1999 opinion of the Scientific Committee on Veterinary matters relating to Public Health (SCVPH) which was revisited and confirmed in 2000 and 2002. The SCVPH concluded in particular for the six hormones 17ß-oestradiol, progesterone, testosterone, zeranol, trenbolone and melengestrol acetate that adverse effects to human health could be envisaged if used as growth promoters. These include endocrine, developmental, immunological, neurobiological, immunotoxic, genotoxic and carcinogenic effects. For 17ß-oestradiol the SCVPH also concluded that it is a complete carcinogen. It also stressed that of the various susceptible risk groups, prepubertal children are of greatest concern.

Annex 3: Grouping of substances

Table 1: Substances with evidence (Category 1) or evidence of potential endocrine disruption (Category 2) which are neither restricted nor currently being addressed under existing Community legislation (18 substances)

Group name	CAS Number	Substance	Status under Dir 76/769/EEC[i] or adaptations to technical progress	Status under Reg 793/93/EEC[ii]	Status of review under Dir 91/414/EEC[iii]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
Alkylphenols and derivatives	11081-15-5	Phenol, isooctyl						
Bisphenols	25085-99-8	Bisphenol A-diglycidylether polymer (mw<700)						
Chlorinated cyclodienes and camphenes	5103-73-1	Cis-Nonachlor						
	39765-80-5	Trans-Nonachlor						
	2597-11-7	1-Hydroxychlordene						
Chlorophenoxy compounds	93-76-5	2,4,5-T = 2,4,5-Trichloro-phenoxyaceticacid						
Dicarboximides	88378-55-6	3,5-Dichlorophenyl- carba-minacid-(1-carboxy-1-methyl)-allyl						
	83792-61-4	N-(3,5-Dichlorophenyl)-2-hydroxy-2-methyl-3-buten-						

Group name	CAS Number	Substance	Status under Dir 76/769/EEC[i] or adaptations to technical progress	Status under Reg 793/93/EEC[ii]	Status of review under Dir 91/414/EEC[iii]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
		acidamid						
HCH and isomers	608-73-1	Hexachlorocyclohexane = HCH mixed						
HCH and isomers	30668-06-5	1,3-Dichloro-2,2-bis (4-methoxy-3-methylphenyl) propane						
	2971-36-0	Bis-OH-Methoxychlor = 1,1,1-trichloro-2,2-bis (4-hydroxyphenyl)ethane (HTPE)						
	72-43-5	p,p'-Methoxychlor						
Organophosphor pesticides	52-68-6	Trichlorfon = Dipterex						
PAHs	7099-43-6	5,6-Cyclopento-1,2-benzanthracene						
	56-49-5	3-Methylcholanthrene						
	57-97-6	7,12-Dimethyl-1,2-benz(a)anthracene						
Phenylhydroxy	101-53-1	Phenyl-4-hydroxyphenyl-						

Group name	CAS Number	Substance	Status under Dir 76/769/EEC[i] or adaptations to technical progress	Status under Reg 793/93/EEC[ii]	Status of review under Dir 91/414/EEC[iii]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
phenylmethanes		methane = 4-benzyl-phenol = p-benzylphenol						
Other substances	94-82-6	2,4-dichlorophenoxy-butyric acid = 2,4-DB						

Table 2: Substances with evidence on ED (Category 1) already regulated or being addressed under existing legislation (82 substances)

High Production Volume (HPV) and/or persistent and/or exposure expected as well as evidence of endocrine disruptive effects

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
Alkylbenzenes and styrenes	1202-48-1	Trichlorobenzene	High		List 2				
Alkylphenols and derivatives	1806-26-4	Phenol, 4-octyl	High				Opinion of the SCF[vii]	Dir 2002/72/EC[viii]	Dir 89/109/EEC[ix] Art 3
Alkylphenol ethoxylates	9016-45-9	Nonylphenolethoxylate	High	Dir 2003/53/EC (Restriction)			Opinion of the SCF		Dir 89/109/EEC Art 3
Bisphenols	106-89-8	Epichlorohydrin (1-chloro-2,3-epoxy-propane)	High				Opinion of the SCF	Dir 2002/72/EC	Dir 89/109/EEC Art 3
Carbamates	63-25-2	Carbaryl	High	Dir 97/56/EEC (Labelling R50)		Dossier under evaluation by EFSA. ES is Rapporteur.			
Chlorinated paraffins	85535-85-9	Intermediate chain chlorinated paraffins	High		List 2				

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
	85535-84-8	Short chain chlorinated paraffins	High	Dir 2002/45/EC (Ban on sale to general public)	List 1				
Chlorophenols and benzenes	608-93-5	Pentachlorobenzene	High	(Labelling R50, S3)			Opinion of the SCF		
	87-86-5	Pentachlorophenol (PCP)	High	(Labelling R50, S3)				Dir 2002/72/EC	Dir 89/109/EEC, Art 3
DDT derivatives and metabolites	2971-22-4	1,1,1-Trichloro-2,2-bis (4-chlorophenyl)ethane	High			Pesticide uses of these are all banned by Directive 79/117/EEC		DDT derivatives and metabolites (as group) Feed: Dir 2002/32/EC[x] Annex 1	DDT derivatives and metabolites (as group) Feed: Dir 2002/32/EC, Art 3
	65148-80-3	3-MeO-o,p'-DDE	High						
	43216-70-2	3-OH-o,p'-DDT	High						
	65148-81-4	4-MeO-o,p'-DDE	High						
	65148-72-3	4-MeO-o,p'-DDT	High						

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
	65148-75-6	5-MeO-o,p'-DDD	High						
	65148-82-5	5-MeO-o,p'-DDE	High						
	65148-74-5	5-MeO-o,p'-DDT	High						
	65148-73-4	5-OH-o,p'-DDT	High						
	4329-12-8	m,p'-DDD	High						
	65148-83-6	o,p'-DDA-glycinat = N-[(2-chlorophenyl) (4-chlorophenyl)acetyl] glycin	High						
	53-19-0	o,p'-DDD	High						
	3424-82-6	o,p'-DDE	High						
	14835-94-0	o,p'-DDMU	High						
	789-02-6	o,p'-DDT	High						
	72-54-8	p,p'-DDD	High						
	72-55-9	p,p'-DDE	High						

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
	1022-22-6	p,p'-DDMU	High						
Dioxins	50585-41-6	2,3,7,8-TeBDD	High				Dioxins (as group) SCF opinion.[xi] Feed: SCAN opinion.[xii]	Dioxins (as group) Food: Reg 466/2001[xiii], amended by Reg 375/2001[xiv] Feed: Dir 2002/32/EC. Annex 1; amended by Dir 2003/57/EC[xv]	Dioxins (as group) Food: Reg (EEC) 315/93[xvi], Art 2 Feed: Dir 2002/32/EC, Art 3
Dicarboxi-mides	32809-16-8	Procymidon	High			On first priority list. Decision expected in 2004-5			
Dithiocarba-mates	8018-01-7	Mancozeb	High	Dir 2002/41/EC (Labelling Xi)		In Annex I			
	9006-42-2	Metiram (Metiram-complex)	High			On first priority list. Decision expected in			

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
						2004-5			
Furans	118174-38-2	6-Methyl-1,3,8-trichlorodibenzofuran	High				Furans (as group) SCF opinion. Feed: SCAN opinion.	Furans (as group) Food: Reg 466/2001, amended by Reg 2375/2001 Feed: Dir 2002/32/EC. Annex 1; amended by Dir 2003/57/EC	Furans (as group) Food: Reg (EEC) 315/93, Art 2 Feed: Dir 2002/32/EC, Art 3
HCH and isomers	319-85-7	Beta-HCH	High			Pesticide uses of these are all banned by Directive 79/117/EEC		Feed: Dir 2002/32/EC, Annex 1	Feed: Dir 2002/32/EC, Art 3
	608-73-1	Hexachlorocyclohexane = HCH mixed	High					Dir 84/491/EEC[xvii] (Discharges to water) WFD-PS[xviii]	

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
Hydroxy-benzonitrils	1689-83-4	Ioxynil	Medium			Annex I inclusion proposal expected soon			
Methoxychlor and derivatives	No CAS 096	1,1-trichloro-2,2-bis(4-hydroxyphenyl)ethane (HPTE)	High	No restriction. It will be men-tioned as toxic for reproduction (Cat 3) in 28th ATP					
	72-43-5	Methoxychlor	High			Uses withdrawn by COM Decision 2076/2002/EC			
Organophos-phorpesticides	122-14-5	Fenitrothion	High	Dir 2002/61/EC (Labelling R50, S3)		Dossier under evaluation by EFSA. UK is Rapporteur.			
PAHs	56614-97-2	3,9-Dihydroxybenz(a) anthracene	High				PAH (as group) Opinion SCF		Food: Reg (EEC)315/93, Art 2

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
	50-32-8	Benzo[a]pyrene	High	Dir 2002/61/EC (Ban on sale to the general public - CMR 2)				WFD-PS (PAH as group, BaP one indicator PAH)	
PCBs and PCB ethers	No CAS 127	2,4-6-Trichlorobiphenyl	High	Dir 76/769/EEC and 85/467/EEC (Ban on sale to the general public)			Dossier under evaluation by EFSA – CONTAM panel		Food: Reg (EEC)315/93, Art 2 Feed: Dir 2002/32/EC, Art 3
	No CAS 128	3,4',5-Trichlorobiphenyl	High						
	67651-37-0	3-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	High						
	100702-98-5	4,4-Dihydroxy-2,3,5,6-tetrachlorobiphenyl	High						
	13049-13-3	4,4-Dihydroxy-3,3',5,5'-tetrachlorobiphenyl	High						
	53905-33-2	4-Hydroxy-2,2',5'-	High						

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
		trichlorobiphenyl							
	67651-34-7	4-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	High						
	14962-28-8	4-Hydroxy-2',4',6'-trichlorobiphenyl	High						
	No CAS 040	4-Hydroxy-3,3',4',5'-tetrachlorobiphenyl	High						
	4400-06-0	4-Hydroxy-3,4',5-trichlorobiphenyl	High						
	No CAS 097	4-OH-2,2',4',5,5'-pentachlorobiphenyl	High						
	54991-93-4	Clophen A30	High						
	8068-44-8	Clophen A50	High						
	No CAS 038	Mixture of 2,3,4,5-tetrachlorobiphenyl (PCB 61), 2,2',4,5,5'-octachlorobiphenyl (PCB 101) and 2,2',3,3',4,4', 5,5'-octachlorobiphenyl	High						

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
		(PCB 194)							
	No CAS 039	PCB 104 (2,2',4,6,6'-pentachlorobiphenyl)	High						
	No CAS 041	PCB 105 (2,3,3',4,4' -pentachlorobiphenyl)	High						
	No CAS 092	PCB 114 (2,3,4,4',5-pentachlorobiphenyl)	High						
	31508-00-6	PCB 118 (2,3',4,4',5-pentachlorobiphenyl)	High						
	No CAS 042	PCB 122 (2,3,3',4,5 -pentachlorobiphenyl)	High						
	No CAS 037	PCB 126 (3,3',4,4',5-pentachlorobiphenyl)	High						
	38380-07-3	PCB 128 (2,2',3,3',4,4'-hexachlorobiphenyl)	High						
	37680-65-2	PCB 18 (2,2',5-trichlorobiphenyl)	High						
	55702-46-0	PCB 21 (2,3,4-trichlorobiphenyl)	High						

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
	7012-37-5	PCB 28 (2,4,4'-trichlorobiphenyl)	High						
	35693-99-3	PCB 52 (2,2';5,5'-tetra-chlorobiphenyl)	High						
	No CAS 036	PCB Aroclor 1016	High						
	No CAS 087	PCB138 2,2',3,4,4',5'-hexachlorobiphenyl	High						
	No CAS 088	PCB180 2,2',3,4,4',5,5'-heptachlorobiphenyl	High						
PCT	12642-23-8	PCT Aroclor 5442	High				Dossier under evaluation by EFSA – CONTAM panel		Food: Reg (EEC)315/93, Art 2 Feed: Dir 2002/32/EC, Art 3
Phthalates	84-61-7	Dicyclohexyl phthalate (DCHP)	High					Dir 93/10/EEC	Dir 89/109/EEC, Art 3
	84-66-2	Diethyl phthalate (DEP)	High				Opinion of the SCF		Dir 89/109/EEC,

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
									Art 3
Pyrethroids	82657-04-3	Bifenthrin (@Talstar)	High			Dossier under evaluation by Rapporteur France prior to EFSA evaluation.			
	91465-08-6	Cyhalothrin (@Karate)	High			Uses withdrawn by COM Decision 94/643/EC			
	52918-63-5	Deltamethrin	High			In Annex I (Dir 2003/5/)			
	10453-86-8	Resmethrin	High			Uses withdrawn by COM Decision 2076/2002/EC			
Pyrimidines and Pyridines	60168-88-9	Fenarimol	High			On first priority list. Decision expected in 2004-5			
	1918-02-1	Picloram	Medium			To be evaluated. Dossier			

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
						expected to arrive to Rapporteur (UK) before November 2003.			
Triazines and triazoles	65277-42-1	Ketoconazol	High			No status as not listed as being authorised anywhere			
	21087-64-9	Metribuzin	High			Dossier under evaluation by EFSA after DK as Rapporteur prepared the draft assessment report.			
	886-50-0	Terbutryn	Medium			Uses withdrawn by COM Decision			

Group name	CAS Number	Substance	Exposure concern	Status under Dir 76/769/EEC[iv] or adaptations to technical progress	Status under Reg 793/93/EEC[v]	Status of review under Dir 91/414/EEC[vi]	Other Risk Assessment Instruments	Other Risk Management Instruments	Other Hazard Identification Instruments
						2076/2002/EC			
Other substances	72-33-3	Mestranol[28]	High						
Other pesticides	106-93-4	Dibromoethane (EDB)	Medium	Dir 97/56/EEC (Ban on sale to the general public - CMR 2)		Pesticide uses of this are banned by Directive 79/117/EEC			

[28] Mestranol, synthetic contraceptive drug

Table 3: Substances with potential evidence on ED (Category 2) already regulated or being addressed under existing legislation (47 substances)

High Production Volume (HPV) and/or persistent and/or exposure expected as well as evidence of potential endocrine disruptive effects

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
Alkylphenol ethoxylates	14409-72-4	4-Nonylphenolnonaethoxylat (Tergitol NP 9)	(Restriction)		Uses withdrawn by COM Decision 2076/2002/EC			
Carbamates	116-06-3	Aldicarb			Uses withdrawn by Council Decision 2003/199/EC			
	1563-66-2	Carbofuran			Dossier under evaluation by EFSA after preparation of draft assessment report by Rapporteur (B)			

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
	72490-01-8	Fenoxycarb			To be evaluated. Dossier expected to arrive to Rapporteur (DK) before November 2004.			
	16752-77-5	Methomyl			Dossier under evaluation by EFSA after preparation of draft assessment report by Rapporteur (UK)			
Dinitroanilides	1582-09-8	Trifluralin			Dossier under evaluation by EFSA after preparation of draft assessment report by Rapporteur (Greece)		WFD-PS	

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
Dioxins	109333-34-8	1,2,3,7,8-PeBDD				Dioxins (as group) SCF opinion. Feed: SCAN opinion.	Dioxins (as group) Food: Reg 466/2001, amended by Reg 2375/2001 Feed: Dir 2002/32/EC. Annex 1; amended by Dir 2003/57/EC	Dioxins (as group) Food: Reg (EEC) 315/93, Art 2 Feed: Dir 2002/32/EC, Article 3
	No CAS 112	1,2,4,7,8-PeCDD						
	No CAS 115	1,3,7,8-TeBCDD						
	50585-46-1	1,3,7,8-Tetrachlorodibenzo-dioxin						
	50585-40-5	2,3-Dibromo-7,8-dichloro-dibenzodioxin						
	109333-32-6	2,8-Dibromo-3,7-dichloro-dibenzodioxin						

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
	131167-13-0	2-Bromo-1,3,7,8-tetrachloro-dibenzodioxin						
	109333-33-7	2-Bromo-3,7,8-trichloro-dibenzodioxin						
	97741-74-7	7-Bromo-2,3-dichloro-dibenzodioxin						
	112344-57-7	8-Methyl-2,3,7-trichloro-dibenzodioxin						
	103456-39-9	TeBDD						
Furans	125652-16-6	6-Ethyl-1,3,8-trichloro-dibenzofuran				Dioxins (as group) SCF opinion. Feed: SCAN opinion.	Dioxins (as group) Food: Reg 466/2001, amended by Reg 2375/2001 Feed: Dir 2002/32/EC Annex 1; amended by Dir 2003/57/EC	Dioxins (as group) Food: Reg (EEC) 315/93, Art 2 Feed: Dir 2002/32/EC, Article 3

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
	125652-13-3	6-i-Propyl-1,3,8-trichloro-dibenzofuran						
	139883-51-5	6-Methyl-2,3,4,8-tetrachloro-dibenzofuran						
	172485-97-1	6-Methyl-2,3,8-trichloro-dibenzofuran						
	125652-14-4	6-n-Propyl-1,3,8-trichloro-dibenzofuran						
	125652-12-2	6-t-Butyl-1,3,8-trichloro-dibenzofuran						
	103124-72-7	8-Bromo-2,3,4-trichloro-dibenzofuran						
	139883-50-4	8-Methyl-1,2,4,7-tetrachloro-dibenzofuran						
	172485-96-0	8-Methyl-1,3,6-trichloro-dibenzofuran						
	172485-98-2	8-Methyl-1,3,7-trichloro-dibenzofuran						

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
	172486-00-9	8-Methyl-2,3,4,7-tetrachloro-dibenzofuran						
	172485-99-3	8-Methyl-2,3,7-trichloro-dibenzofuran						
HCH and isom.	319-86-8	Delta-HCH			Pesticide uses of this are banned by Directive 79/117/EEC			
Hydroxybenzo-nitrils	1689-84-5	Bromoxynil			Annex I inclusion decision expected in coming months			
Organophos-phorpesticides	30560-19-1	Acephate			Uses withdrawn by COM decision 2003/218/EC			
	470-90-6	Chlorfenvinphos			Uses withdrawn by COM Decision 2076/2002/EC		WFD-PS	

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
	7786-34-7	Mevinphos = Phosdrin			Uses withdrawn by COM Decision 2076/2002/EC			
	13171-21-6	Phosophamidon			Uses withdrawn by COM Decision 2076/2002/EC			
PAH	56-55-3	Benz(a)anthracene	Dir 97/56/EEC (Ban on sale to the general public - CMR 2)		Dossier under evaluation by EFSA after preparation of draft assessment report by Rapporteur (S)			
Pyrethroids	584-79-2	Bioallethrin = d- trans allethrin			Uses withdrawn by COM Decision 2076/2002/EC			
	52315-07-8	Cypermethrin			Annex I inclusion decision expected in 2004-2005			

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
	26002-80-2	Fenothrin = sumithrin			No status as not listed as being authorised anywhere			
	51630-58-1	Fenvalerate			Uses withdrawn by COM Decision 1998/270/EC			
	69409-94-5	Fluvalinate			Tau-fluvalinate to be evaluated. Dossier expected to arrive to Rapporteur (DK) before November 2004.			
	52645-53-1	Permethrin			Uses withdrawn by COM Decision 2000/817/EC			
Triazines and triazoles	21725-46-2	Cyanazine			Uses withdrawn by COM Decision 2076/2002/EC			

Group name	CAS Number	Substance	Status under Dir 76/769/EEC or adaptations to technical progress	Status under Reg 793/93/EEC	Status of review under Dir 91/414/EEC	Other Risk Assessment Instruments	Other Risk Management Instruments	Hazard Identification Instruments
	2593-15-9	Etridiazole			To be evaluated. Dossier expected to arrive to Rapporteur (NL) before November 2004.			
	123-88-6	Triadimenol			Dossier under evaluation by Rapporteur UK prior to EFSA evaluation.			
Other pesticides	51-03-6	Piperonyl butoxide			Is not considered as a pesticidal active substance. Is out of scope of the Directive.			
	7287-19-6	Prometryn			Uses withdrawn by COM Decision 2076/2002/EC			

Table 4: Substances classified as HPV and/or persistent and/or exposure expected in humans and wildlife, with insufficient data (38 substances)

Group name	CAS Number	Substance
Alkylbenzenes and styrenes	29082-74-4	Octachlorostyrene
Alkylphenols and derivatives	53792-11-3	4-(4-Hydroxyphenyl)-2,2,6,6-tetramethylcyclo-hexane-carbonacid
Alkylphenol ethoxylates	2717-05-5	Heptaoctatrikosan-1-ol, 23-(nonylphenoxy) 3,6,9,12,15,18,21-nonylphenolmonoethoxylate
	9014-90-8	Poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-nonylphenoxy
Bisphenols	No CAS 027	2,2,6,6-Tetramethyl-4,4-bis(4-hydroxyphenyl)–n-heptan
Chlorinated paraffins	85535-86-0	Long chain chlorinated paraffins
Chlorophenoxy compounds	69806-50-4	Fluazifop-butyl
Dinitroanilides	29091-21-2	Prodamine
Dithiocarbamates	142-59-6	Nabam
Naphthalenes and derivatives	135-19-3	2-Naphthol
	1335-87-1	Halowax 1014
Phthalates	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
	103-23-1	Bis(2-ethylhexyl)adipate
	117-84-0	Di-n-octylphthalate (DnOP)
Pyrethroids	66230-04-4	Esfenvalerate
Triazines and triazoles	55179-31-2	Bitertanol
	94361-07-6	Cyproconazole
	119446-68-3	Difenoconazole
	No CAS 121	Epiconazol
	No CAS 008	Epoxiconazole
	66246-88-6	Penconazole
	60207-90-1	Propiconazole
	107534-96-3	Tebuconazole

Group name	CAS Number	Substance
	74115-24-5	Clofentezine = chlorfentezine
Other pesticides	88-85-7	Dinoseb
	80844-07-1	Ethofenprox
	120068-37-3	Fipronil
	76674-21-0	Flutriafol
	2212-67-1	Molinate
	88671-89-0	Myclobutanil
	4685-14-7	Paraquat = 1,1'-dimethyl-4,4'-bipyridinium
	82-68-8	Pentachloronitrobenzene (PCNB)
	23950-58-5	Pronamide
	117718-60-2	Thiazopyr
Other substances	106-47-8	4-Chloroaniline
	119-61-9	Benzophenone
	68-12-2	Dimethylformamide (DMFA)
	108-05-4	Vinyl acetate

Table 5: Substances which are deemed not to be endocrine disrupters, on the basis of available information (19 substances)

Group name	CAS Number	Substance
Biphenyls	92-52-4	Diphenyl
Benzamidazoles	17804-35-2	Benomyl
Chlorinated cyclodienes and camphenes	3734-48-3	Chlordene
Dinitroanilides	40487-42-1	Pendimethalin
Diuron derivatives and metabolites	35367-38-5	Diflubenzuron
Organophosphor pesticides	2921-88-2	Chlorpyrifos
	919-86-8	Demeton-s-methyl
	62-73-7	Dichlorvos
	51276-47-2	Glufosinate
	301-12-2	Oxydemeton-methyl
	299-84-3	Ronnel = fenchlorfos
	22248-79-9	Tetrachlorvinphos = Gardona
Other pesticides	71751-41-2	Abamectin
	33089-61-1	Amitraz
	2439-99-8	Glyphosate
	1024-57-3	Heptachlor epoxide
	3554-44-0	Imazalil
	11141-17-6	Azadirachtin
	19044-88-3	Oryzalin

Annex 4: Specific recommendations of the SCTEE on "Two study reports on endocrine disrupters by WRc-NSF and BKH Consulting Engineers"

"Study on the scientific evaluation of 12 substances in the context of endocrine disrupter priority list of actions", carried out by WRc-NSF (UK).

- As noted in the report, there is very limited knowledge of invertebrate endocrine system and ecotoxicological methodology for reproductive toxicity testing. It also points to the almost total lack of data on potential endocrine disrupter effects in amphibians.

- For compounds with an identical mode of action, such as oestrogenic hormones and xeno-oestrogens that act through an oestrogen receptor, the performance of individual risk assessments is problematic. For example, the effects of natural and synthetic oestrogens may be additive, especially since these compounds often co-occur in the aquatic environment.

- A problem encountered in the assessment and interpretation of the data concerns the low and variable detection levels of various compounds, in particular the oestrogenic hormones: the detection limits for these compounds were in the range of, or above concentrations at which (oestrogenic) effects have been shown on fish.

- The CSTEE agrees with the overall conclusions for the three oestrogens, but notes that the report sometimes contains errors and that limited notice is given to *in vitro* studies.

"**Study on gathering information on 435 substances with insufficient data"**, carried out by BKH-RPS Group (NL).

- The CSTEE agrees with the report that reproduction toxicity was classified as systemic toxicity and not as endocrine disruption, unless specific parameters were affected such as hormone levels.

- Low production volume chemicals but with high release in the environment or with high potency are not sufficiently covered in the report.

- Comments on wildlife are generally good, but it must be specified that potential endocrine disrupter effects are different for the health of human individuals as compared to wildlife populations.

- The use of terms such as classification and labelling may give rise to considerable misunderstanding in view of their current use in the European Union.

- Type of release is not taken into account in the report: industrial chemicals often result in continuous release; pesticide use often results in temporal release.

---

[i] Directive 76/769/EEC relating to restrictions on marketing and use of certain dangerous substances and preparations, or adaptations to technical progress (ATP) of Dir 76/769/EEC
[ii] Regulation (EEC) No.793/93 for Risk Assessment of Existing Substances
[iii] Directive 91/414/EEC concerning the placing on the market of Plant Protection Products

[iv] Directive 76/769/EEC relating to restrictions on marketing and use of certain dangerous substances and preparations, or adaptations to technical progress (ATP) of Dir 76/769/EEC
[v] Regulation (EEC) No.793/93 for Risk Assessment of Existing Substances
[vi] Directive 91/414/EEC concerning the placing on the market of Plant Protection Products
[vii] SCF: Scientific Committee on Food.
http://europa.eu.int/comm/food/fs/sc/scf/index_en.html
[viii] Directive 2002/72/EC relating to plastic materials and articles intended to come into contact with foodstuffs
[ix] Directive 89/109/EEC Framework Directive on food contact materials and articles
[x] Directive 2002/32/EC on undesirable substances in animal feed
[xi] Opinion of the Scientific Committee on Food on the Risk Assessment of Dioxins and Dioxin-like PCBs in Food; adopted on 22 November 2000.
http://europa.eu.int/comm/food/fs/sc/scf/out78_en.pdf.
Opinion of the Scientific Committee on Food on the Risk Assessment of Dioxins and Dioxin-like PCBs in Food – Updated based on new scientific information available since the adoption of the Scientific Committee on Food opinion of 22nd November 2000, adopted on 30 May 2001. http://europa.eu.int/comm/food/fs/sc/scf/out90_en.pdf
[xii] Opinion of the Scientific Committee on Animal Nutrition on the "Dioxin contamination of feeding stuffs and their contribution to the contamination of food of animal origin" adopted on 6 November 2000. http://europa.eu.int/comm/food/fs/sc/scan/out55_en.pdf
[xiii] Regulation 466/2001 setting maximum levels for certain contaminants in foodstuffs
[xiv] Regulation 2375/2001 amending Regulation 466/2001 setting maximum levels for certain contaminants in foodstuffs
[xv]Directive 2003/57/EC amending Directive 2002/32/EC on undesirable substances in animal feed
[xvi] Regulation 315/93 laying down Community procedures for contaminants in food
[xvii] Directive 84/491/EEC of 9 October 1984 on limit values and quality objectives for discharges of hexachlorocyclohexane
[xviii] On the list of Priority Substances under the Water Framework directive (Directive 2000/60/EC, Annex X) and subject to a legislative proposal currently being drafted, to provide protection against human exposure via the aquatic environment.