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MINISTRY OF HEALTH

Abridged Version of the Annual Report of the State General Laboratory

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STATE GENERAL LABORATORY (SGL)

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I N D E X

I N T R O D U C T I O N

The SGL in Cyprus

- **develops** and integrates actual scientific information, which is then made accessible to policy makers and the Law Enforcement community and facilitates the implementation and supervision of laws and regulations in the field of public health, environment and administration of justice

- **provides** maximum socio-economic impact through preventing and solving problems related to the safety and quality of food, environment and pharmaceutical preparations, safety and sustainability of water resources, the fight against crime and trafficking of illegal drugs

- **strives** towards harmonisation with international scientific developments as well as EU legislation, policies and approaches.

Services are provided to all Ministries, Municipalities and Organisations in Cyprus and co-operation is continuously strengthened with Institutes and Universities on a National and International level in its field of responsibilities.

Dr Costas Michael

Director of the State General Laboratory

March 2004

STATE GENERAL LABORATORY

1. Responsibilities

The State General Laboratory (SGL), a Department of the Ministry of Health is the official Laboratory used by the Government to fulfil requirements embodied in the laws covering the following areas: analysis of foodstuffs, pharmaceuticals, cosmetics, water, environmental samples, police exhibits, narcotics, biological samples for poisoning cases and unsuspected deaths, goods purchased by the Government Stores, agricultural products for export and industrial products, through customs, for tariff classification.

2. Priorities and Objectives of the SGL

The following could be highlighted:

(a) Developing and integrating scientific knowledge which is then made accessible for strategic planning and policy setting in the areas of food and water safety, consumer health and interest, environmental protection, administration of justice and socioeconomic development.
(b) Preventing and solving problems related to the safety and quality of food, environment and drugs.
(c) Securing the long term safety, sustainability and multifuctionality of the island's water resources.
(d) Facilitating the Police in crime investigation and combating drug trafficking/use as well as courts in the judicial process.
(e) Supporting commerce and industry and fair trade and strengthening the competitiveness of Cyprus products.
(f) Abiding to the stringent requirements of ISO/IEC 17025 so as to encompass, in a fruitful manner, its increasing responsibilities emanating from Cyprus' accession to the EU.
(g) Expanding its Accreditation fields based on the ISO/IEC 17025 standard.
(h) Implementing mechanisms, which target towards the representativeness, effectiveness of quality control while enhancing efficiency and productivity.
(i) Fulfilling its role within the European Union, by contributing to the various networks organized by European Bodies/Authorities, to the implementation of EU–level functions and research programmes.

3. Means of reaching objectives

3.1 Implementing and Maintaining a Quality Policy

The SGL has put in place within its laboratories a quality policy based on the standard ISO/IEC 17025 as a common harmonised approach to build mutual confidence, foster recognition of their quality of work and comply with international standards. Its quality policy forms an integral part of its response towards the responsibilities it has been given, in terms of reliability, safety and confidence. All areas, therefore, of scientific, technical and managerial work are subject to the quality provisions. The ISO/IEC 17025 is the valid quality standard for calibrating and testing laboratories and includes the application of standard methods, as well as non-standard methods in combination with an adequate level of calibration based on a clear concept of validation procedures. To date, 13 laboratories (all 10 Food Laboratories - 01, 02, 05, 06, 08, 12, 13, 14, 15 and 16), the Laboratory for the Quality Control of Pharmaceuticals and Cosmetics – (04), the Forensic Chemistry and Toxicology Laboratory (03) and the Ecotoxicology Laboratory (07)) (see organogramme) have received accreditation by ESYD (the Greek Accreditation Body) which accredited the first 11 laboratories in 2002 and the last 2 in 2003.

The Quality System covered both intra and inter laboratory controls while implementing official procedures (internal audits reviews, corrective actions etc.) Interlaboratory controls have been implemented through Proficiency Tests with Official Organisations/Labs in Europe and USA, while rating always among the top and showing a high professional level of its personnel and its competence. This results in enhancing the confidence, dedication, self-development and zeal of the personnel.

Efforts were also focused on (a) extention of its premises by buying a new building so that some laboratories can be transferred to this new building and planning for the construction of a new State General Laboratory, (b) completing necessary construction changes on the current premises, (c) the employment of scientific staff and (d) the strengthening of the co-operation of the SGL with the Greek National Metrology Foundation, Greek State General Laboratory and many other European Labs and Organisations.

During 2003, the Labs of the SGL participated in a total of 90 proficiency tests. 95% of the parameters analysed in these tests are within ± 2 z-score.

3.2 Accreditation

During 2003 the SGL managed to get ESYD´s official recognition for its conversion of its accreditation system from EN45001 to ISO/IEC 17025.

The laboratories which were accredited back in 2002 extended their accreditation to new methods and techniques, to an overall number of 23 methods/techniques. The Forensic Science and Toxicology Laboratory and the Ecotoxicology Lab were both accredited in 2003.

Two more labs are also heading for accreditation: Environmental Chemistry (I) and the Radionuclides Lab. The SGL having a wide experience in the implementation of QA system has voluntarily undertaken the responsibility with the Minister´s consent to share this experience with other Labs (privately own and governmental).

3.3 Planning and implementing Monitoring/Research programmes

To achieve the best possible outcome of all the activities surrounding risk assessment, within its area of responsibilities, appropriate coordinating programmes are drafted on the basis of surveillance approach in cooperation with the Competent Authorities.

Therefore, where applicable, SGL plans and implements national control and surveillance programmes with the relevant Departments of all Ministries so as (a) to confirm that products comply with national laws and regulations and
(b) to provide preventive measures to existing local problems through target oriented and applied research.

The SGL implements applied research in its areas of responsibilities incorporating it in the challenging fields of method development, surveillance and problem solving programmes. While doing so, it achieves more effective utilization and management of results.
The results from this research can be utilized for policy making and supervision. The SGL has also succeeded in incorporating part of its responsibilities in European Research Programmes. A number of such

research results have seen the light of publication in international journals.

3.4 Advancing its technological infrastructure and establishing new laboratories

The SGL has put strong efforts to obtain the state-of-the art equipment which is fully utilized. The use of such equipment is a prerequisite for compliance with continuously emerging requirements of International and European Regulations/Directives but also a need to reach lower detection levels, to increase productivity, selectivity and specificity in the analysis of samples. Within the framework of such efforts, it has acquired a SNIF-NMR a scanning electron microscope, an LC-MS and is ready to acquire an LC-MS-MS.

The establishment of the 3 new labs namely (a) SNIF-NMR for Food Authenticity, (b) Genetically Modified Organisms in Food and (c) Microbiological control of human, veterinary medicines and cosmetics has been completed. The Customs Lab for tariff classification and Safety of Children's Toys will be completed in 2004 in the new building.

3.5 Enhancing Human Resources

a) Providing continuous educational programmes by both in house training and training abroad gives an incentive to the staff but also provides tools for development and better performance. This has been the responsibility of the newly established "Learning Unit" of the SGL that monitors and suggests training programmes and scholarships for the staff after consultation with the Director and feedback from the staff. Training programmes on new techniques, new methods on Quality Systems, and European Legislation and Procedures, computer programmes were provided in house, locally and abroad.
b) The SGL has succeeded, after a lot of effort, in increasing its staff. Its wide range of analytical work is covered by 22 Laboratories as shown in the organogramme under six sections with the support of a registry, stores, library, IT and QA Unit, secretariat, accounts. During 2003, the staff comprised 40 chemists and microbiologists - grade one and two - in the positions of the Director, Senior Chemists and Chemists (as compared to 30 in 2001), 42 Chemists in the positions of senior technicians and technicians and 21, in all, clerks, receptionists, telephonists, cleaners, messengers, store keeper, sterilization and laboratory attendants.

Chemists and Microbiologists (35 in all) were also employed on a one-year contract.

3.6 International Co-operation

The SGL, when possible, encompasses part of its work in European Programmes/Projects.

Also, to fulfil its role within the European Union the SGL has joined various networks (e.g. Official Medicines Control Laboratories) towards the implementation of EU–level functions. A UNOPS funded project was expanded to cover the monitoring of a sewage treatment plant (Mia-Milia) to safeguard the proper use of sewages.
At European level the SGL has been involved in several projects within the European Union´s 5th and 6th Research and Development Framework Programme (RDFP) e.g. European Programme QUA-NAS for the development of Metrology in Analytical Chemistry and support of pre-accession countries towards Accreditation.

It also participates in the programmes:

(a) European Virtual Insitute for Reference Material VIRM (2003-2006)
(b) Reduction of Environmental Risk, posed by emerging contaminants (2004-2007)
(c) Under COST
(d) Traceability of enteroviruses in the pollution of surface water (5th FP of EU).

For strengthening National and International co-operation the SGL has now its own web site: www.sgl.moh.gov.cy

4. Financial Resources

Expenditures incurred by the SGL in 2003 amounted to £3,407.245 (compared to £2.593.982 in 2002) as provided by the Ordinary and Development Budget. Revenue amounted to £72,342 compared £65,298 in 2002, an amount that reflects to fees charged on analysis. There was also an external fund, which amounted to £23,437 from European Projects.

5. WORK CARRIED OUT BY LABORATORIES

SECTION A

Food Composition and Nutrition Laboratory (01)

The laboratory analysed 1461 samples during 2003 (887 during 2002) which were collected according to national food laws. The Lab has been accredited since 2002 and during 2003 the accreditation was extended to another 3 methods. Also the Lab participated in proficiency tests with excellent performance.

General Water Analysis Laboratory (02)

The laboratory has the responsibility of the general chemical analysis of all water intended for human consumption, bottled water, as well as water from boreholes rivers and dams.
The number of samples analysed during the year 2003 was 1534. The criteria for the assessment of results were mainly based on the directives of the European Union.

SNIF-NMR Laboratory

The laboratory has the responsibility of food and beverage authentication, using spectroscopic techniques and chemometrics. Since 2003 the Laboratory has been participating in the European programme for establishing a databank for the results of analyses of wine products by nuclear magnetic resonance of deuterium.

SECTION B

Forensic Science and Toxicology Laboratory (03)

The laboratory has the responsibility for the analysis of police cases involving controlled drugs, arson, and explosives cases, murder investigations etc. Its aim is to provide and independent scientific service to the police as well as unbiased evidence to the justice system as a whole. During 2003 the laboratory received 2834 exhibits, with narcotics being the predominant class (1707 exhibits). The tremendous increase observed in the ECSTACY amphetamine class (5725 tablets) as well as in heroin exhibits (130) in 2003 is cause for particular concern.

The laboratory also carried out toxicological analyses in criminal investigations involving unnatural deaths, drink/driving offences (blood alcohol) and poisonings as well as in hospital emergency cases involving namely drugs and pesticides. The laboratory also periodically monitored drug addicts on detox programs as well as prisoners from the Cyprus Prison.
The laboratory on a yearly base participates in the UNDCP external proficiency testing scheme in narcotics with excellent results. In 2003 the laboratory was accredited (ISO/IEC 17025).

Quality Control of Pharmaceuticals and Cosmetics (04)

The aim of the laboratory is to contribute towards the following:

To protect human health in relation to the quality, safety and effectiveness of the prescribed drugs until their expiry date, to assist in the advancement of Trade and Pharmaceutical Industries and the competitiveness of their products through their analysis and the assessment of the manufacturer's dossiers, and to provide reliable laboratory data to the Drug Council for the support and implementation of government policies.

The Laboratory has achieved accreditation by ISO/IEC 17025 on techniques rather than methods. In the proficiency tests that has participated in, within the European Official Medicines Control Laboratory network, it rated among the first, once again.

The responsibilities of the lab during 2003 have covered 3 distinct areas by 3 monitoring/surveillance programs: Pharmaceuticals of human use, pharmaceuticals for Veterinary use and Cosmetics (the last two programmes were implemented due to the new legislation that has been passed, on Veterinary Drugs (N116(I)2001) and Cosmetics (N106(I)2001).

Out of a total of 271 samples, 10 were found not comply for the following reasons: out of manufacturer's specifications, wrong labeling and incomplete method of the manufacturer's dossier.

Veterinary Drug Residues Laboratory (05)

The laboratory has the responsibility to fulfil 80% of the total national monitoring program for the control of the veterinary drug residues

according to E.C directives but it covered only 55% of it.1394 analyses were performed in a total of 1114 samples concerning groups of anabolics, antibiotics, parasitics, thyreostatics, antiprotozoa, tranquilizers, β-agonists and coccidiostatics.

2% of the total number of samples that were submitted for tetracycline analysis were found positive for Oxytetracycline above MRL and 3% below MRL. The banned anabolic, substance a-Nortestosteron was identified in one out of 5 samples that were submitted for analysis. Additionally, 20% of the total number of samples were quality control samples for implementation of the Quality Assurance system.

The lab also functions as a National Reference Laboratory according to the harmonization processes.

SECTION C

Laboratory of Environmental Chemistry I (06)

The Lab of Environmental Chemistry I undertakes almost exclusively monitoring and research activities in the field of water pollution investigation and control. It supports the competent authorities in implementing the EU legislation and has been accredited by ESYD since 2002. In 2003 it has participated successfully in a collaborative study for the "Preparation of a CRM: Pesticides in water. Feasibility study" of the European program WARP.

During 2003 the laboratory has analyzed 262 water samples for 5-8 different groups of parameters. The main activities are summarized as follows:
1) Monitoring and applied research Program on potential pollution of (i) the Surface waters according to the directives 75/440/EE and 79/869/EE and (ii) the drinking water, according to directive 98/83/EE and the respective Law N87(I)/2001. Under this program 95 samples were analyzed.
2) "Integrated Monitoring and Early Warning System for the Nicosia Sewage Treatment Plant –Safe Reuse of Effluents "financed by UNOPS under which 35 water samples from the river into which the treated effluent is discharged were examined.
3) "Monitoring the Environmental impact of Ezousa aquifer after its enrichment with treated effluent from the Pafos treatment plant".

So far only 9 samples were examined for the determination of the background pollution before the discharge. The investigation will continue after the discharge.
4) Investigation of pollution incidents: (i) pollution of the Larnaca Salt Lake by the nearby Shooting Club for which 5 water samples and 19 sediments were examined and (ii) pollution by petrol of the aquifer in the Limassol seaside area. 40 ground water samples and 5 sea water samples were examined. The investigation will continue in 2004.

(b) Ecotoxicology Laboratory (07)

The Ecotoxicology laboratory is an essential part of the integrated monitoring and surveillance programme in accordance with the international and European practice and legislation. It supports the implementation of the EU Framework Directive 2000/60. Toxicity testing is carried out on environmental samples using bacteria, algae and daphnia. The samples include water, soil, sediments industrial and other wastes and chemical substances.

The laboratory has been accredited by ESYD in 2003.
During 2003, 251 environmental samples were tested for 3-4 different toxicity tests. The total number of tests done was 1100, 54% of which were quality control samples. Testing is carried out either for purposes of specific surveillance and monitoring or for investigation of pollution incidents. The environmental samples analyzed include:
a) treated effluent (46 samples) from the treatment plant at Mia Milia under UNOPS financed program "Integrated Monitoring and Early Warning System for the Nicosia Sewage Treatment Plant –Safe Reuse of Effluents "
b) treated effluent (9 samples) under the Monitoring program for the Waste Treatment Plants with the Water development Department
c) water samples (50) under the Monitoring program for surface waters of Cyprus according to directives 2000/60/EC and 74/440/EC.
d) ground waters (9) under The Program "Monitoring the Environmental impact of Ezousa aquifer after its enrichment with treated effluent from the Pafos treatment plant".
e) water (15) and sediments (19) from the Larnaca Salt Lake for the investigation of the pollution caused by the nearby Shooting club and
f) soil samples (19) for the investigation of the pollution of the formal disposal area of Aglantzia park.

Pesticide Residues Laboratory (08)

The Pesticide Residues Laboratory of SGL is the Official Laboratory for monitoring and surveillance of pesticide residues in Foodstuffs. It has been accredited by ESYD since 2002.

The Lab is in continuous process of adopting EU regulations in the Cyprus legislation. In the year 2003 the following EU directives were adopted in Cyprus legislation (Pesticide Residues Regulation Κ.Δ.Π.775/2003) 2000/82/EC, 2001/35/EC, 2001/39/EC, 2001/48/EC, 2001/57/EC, 2002/5/EC, 2002/23/EC, 2002/42/EC, 2002/66/EC, 2002/71/EC, 2002/76/EC, 2002/79/EC, 2002/97/EC and 2002/100/EC.

In 2003 the lab has analysed 303 samples of plant origin and 423 QC samples. 6,3% of the samples exceeded MRLs (5,2% of the analysed fruit samples and 7,3% of vegetables). 10,6% of the analysed samples were characterized as «critical». The term "critical" refers to samples which are likely to exceed the MRL, which however cannot be considered as real legal violations when uncertainties are included in the calculation.

The monitoring program of samples of animal origin for pesticide residues and PCBs was not fully covered due to lack of personnel (33% of meat samples, 100% of milk and honey samples were analysed for a wide spectrum of parameters covering 96% of the required needs in the program).

During 2003, 29 meat samples, 9 milk samples, 18 honey samples and 54 quality control samples were analyzed.
In three meat samples hexachlorobenzene was determined and in four milk samples hexachlorobenzene and ppDDE were determined in concentrations well below the MRLs. In 8 honey samples fluvalinate was determined in concentrations ranging from < 0,01 to 0,03 mg/kg.
The pilot program of baby foods intended for infants and young children was completed.
46 samples of imported milk powder and one concentrated milk sample were analysed for 14 Organochlorine pesticides and 15 PCBs congeners. None of the samples was positive. Detection limits were 5 to 10 times below the available MRLs.
The lab has participated in a Medpol program for testing fish samples for Organochlorine pesticides and PCBs as indicators for Mediterranean Sea pollution.

Radioactivity Laboratory (09)

The radioactivity laboratory is the official laboratory for monitoring radioactive nucleids in food, water and environmental samples.
In year 2003 the control was focused on the determination of γ - radionuclides in food samples. (49 food samples and 6 quality control samples were examined).
47 samples of baby and infant food were examined for γ – radionuclides. In 15 samples Cs137 was detected. In four samples the activities were ranging from 0,07-0,17Bq/Kg and in the other 11 samples were below 0,04Bq/Kg (Minimum detectable activity 0,01-0,04 Bq/kg). These activities were well below the available maximum levels.

SECTION D

Environmental Chemistry II and Treated Wastes (10)

The laboratory carries out analyses of air samples, soil, sediments, rain, sea water, industrial wastes and treated domestic wastes.

It's objective is to contribute towards the protection of the environment and the Public health in general from chemical compounds which originate from industrial, agricultural and other sources or other activities.

During the year 2003, 811 samples were analysed for 4384 parameters.

The laboratory participates successfully with excellent results in Interlaboratory quality schemes organized by Aquacheck for the determination of BODS, (Biological Oxygen Demand COD) (Chemical Oxygen Demand) suspended solids, TON (Total Organic Nitrogen) Nitrites, Nitrates, Phosphates, Chlorides, Kjeldahl Nitrogen and total Phosphorus.
The laboratory participates also in the Interlaboratory programme, organized by WHO, for the determination of cations, anions and heavy metals in acid rain samples.

The laboratory implements, in cooperation with the Department of Water Development a monitory programme for monitoring the quality of secondary and tertiary treated domestic wastes from treatment plants in rural and urban areas.

Laboratory for the Control of Industrial Products and Fuels (11)

A wide spectrum of tests is performed within the laboratory including liquid fuels, detergents, glass, cigarettes, paints e.t.c.
During the year 2003, 388 samples were analysed for 1487 parameters. More than 60% percent of the samples were liquid fuels and about 25% of samples were detergents.
This year a preliminary research was also contacted for household chemicals in the Cyprus market. Based on the results of this research a control program will be scheduled.
The laboratory is also responsible for checking products for conformity to specifications, purchased by the government.

Food Contact Materials and Toys Laboratory (12)

The laboratory is responsible for chemical safety of (a) Food Contact Materials and (b) Toys.

The basic target of the control is to protect consumers from substances which may migrate from the food contact materials or from toys and endanger human health.

Totally the lab analysed during 2003 43 samples (149 real samples) for 228 parameters/analyses, 6 samples (18 real samples) for intralaboratory control and 3 samples (9 real number of samples) for proficiency testing.

In cooperation with Health inspectors of the Ministry of Health the programme of market control has been continued. Under this programme 13 ceramics (26 samples) were examined for migration of Pb and Cd according 84/500/EEC. The samples concluded plates, glasses of water and wine, small bowls and cooking baking pans. All results were in compliance with the above Directive.

27 plastics (102 real samples) – drinking water bottles of 19L, glasses, bowls with lid, storage vessels for food (from PC, PE, PP). All results regarding identification and overall migration were in compliance with national regulations.

The lab has continued with validation of methods. The fourth method that has been validated is "Quantitative determination of Bisphenol A in water simulants by HPLC technique".

The laboratory on a yearly base participates in external proficiency tests (FAPAS) with excellent results.

Control of Toys and Articles of Common Use

During 2003 the laboratory examined 3 samples (21 real samples) – (a) Play kitchen for migration of colours from plastic, (b) Yo-Yo balls for control of safety and examinations of the liquid inside the ball and (c) Plastic bags (Nivea) for investigation of liquid inside the bag for Cd, Pb content.

Yo-Yo balls were not found to conform to basic requirements for safety of toys according EC Directives and Cyprus Regulations.

SECTION E

Food Additives and Special Analysis of Food Laboratory (13)

The laboratory is responsible for the official control of foodstuffs for food additives and special analysis of foods related to quality and adulteration. The aim of the official control, monitoring and surveillance applied by the lab is to protect public health and promote Good Manufacturing Practices, Food Safety and relevant policies.
An appropriate coordinating programme concerning all the activities of the laboratory was drafted for 2003 on the basis of surveillance approach in cooperation with Public Health Services, Ministry of Health, taking into account the harmonised Cyprus Legislation according to EU Legislation. A number of 668 samples were analysed (1040 tests) for food additives and special analysis of food (e.g. dairy products, adulteration). Apart from the above programme, samples were analysed for non permitted colour Sudan I in chilli products after relevant information from Rapid Alert System for Food and Feed (RASFF).
During 2003 a new method was validated for accreditation purposes: "Cyclamates determination in drinks by HPLC (CYS EN: 12857: 1999)" and an already accredited method for sweeteners was validated for other foodstuffs as well:

"Determination of acesulfame potassium, aspartame, saccharin and caffeine in clear drinks, semi-solid and solid foodstuffs (CYS EN: 12856: 1999)"

Environmental and Other Food Contamination and Natural Toxins Laboratory (14)

The laboratory is responsible for the official control of food contamination such as mycotoxins (Aflatoxins), heavy metals, nitrates etc and is accredited.
In the framework towards harmonization with the *Acquis Communautaire*, monitoring, compliance control and surveillance programs have been designed and based on the information from violated samples, Rapid Alert System (RASSF) and food consumption data. The most frequent violated samples are imported peanuts and pistachio for aflatoxins. The programs shown below are prevention oriented:

- National Monitoring Programme for the Prevention and Control of Aflatoxins in foodstuffs. Samples are taken at critical control points i.e. import, primary storage, processing etc. Target samples are: nuts, cereals, oily seeds, spices, milk and their products.

- Compliance Control and Monitoring Programme for Heavy Metals in foodstuffs (Pb & Cd and Hg).

- Monitoring of Mycotoxins (OTA, ZEA, DON, Fumonisines, etc.) in cereals, their products and coffee (OTA).

- Programme for the Monitoring and Control of Residues (toxic metals, mycotoxins etc.) in meat and animal products (according to relevant E.U. legislation).

SECTION F

Water and Pharmaceuticals Microbiological Control Laboratory (15)

The laboratory is responsible for the official microbiological control of all water categories for the protection of public health, consumer interests and the environment. 9525 samples were analysed in 2003, in the framework of "The Quality of Water for Human Consumption Law,

N.87(I)/2001", "The Public Swimming Pools Law, N.105(I)/1996" and "The Cyprus Standard for Bottled Drinking Water, CYS109:1996".

The parameters analysed include coliforms, *Escherichia coli,* enterococci, *Pseudomonas aeruginosa*, sulphite-reducing clostridia, total bacterial count (all with accredited methods), salmonellae, *Legionella pneumophila*, intestinal parasite eggs, yeasts and moulds.

A Quality Assurance System is implemented which includes intralaboratory schemes for bacteriology, legionella and enteroviruses and the laboratory is accredited for 6 methods.
The laboratory has been participating, along with the Environmental Virology Laboratory, in the following research programmes:
i) "Tracking the origin of faecal pollution in surface waters" EVK1-2000-22080, funded by the EU 5th Framework Programme, since 1/1/2001.
ii) "Integrated monitoring and early warning systems for the Nicosia Sewage Treatment Plant at Mia Milia- Safe reuse of effluents" WSE-FS-4049, funded by UNOPS, since 1/4/2001.

16 pharmaceutical samples were examined in 2003 for sterility, biological activity of antibiotics and/or endotoxin detection (LAL test). In addition, 13 cosmetics products were analysed for microbiological parameters.

Food Microbiology Laboratory (16)

The FML is the official food microbiological laboratory of the Ministry of Health. The food control exercised by the laboratory is aimed at verifying compliance with legislation and the protection of public health, consumer interests and fair trade practices. The laboratory, in cooperation with the Public Health Services of the Ministry of Health, designs an annual national program for the Microbiological control of foodstuffs.

The total number of samples analyzed amounted to 1796. These included Milk and Milk products (31.8%), Desserts (12.0%), Cured Meats (11.0%), Sandwiches (8.7%), Ice-creams (6.7%), Ready-to-eat foods (5.9%), Juices (5.8%), Coconut (5.4%), Salads (4.5%), etc.

87.0% of the samples were found to be satisfactory, 2.5% marginally acceptable, 5.6% of suboptimal quality and 4.7% unsatisfactory or not in compliance with the legislation. Refer to Figure 4.

The FML implements a quality assurance system according to ISO/IEC 17025 and is accredited for five (5) methods.

Media Preparation and Sterilization Laboratory (17)

The MPSL prepares all the culture media, broths and reagents necessary for the implementation of Microbiological/virological/biological control within the Microbiology Section (Food Microbiology, Water and Drug Microbiology, Virology and GMO laboratories). Additionally, it sterilizes bottles, containers and utensils to be used for sampling purposes.

During 2003, 1350 batches of 100 different culture media were prepared and quality controlled before being used.

Environmental Virology Laboratory (18)

The laboratory's scope is the protection of public health and the environment by monitoring the effectiveness of sewage treatment plants and the quality of effluents discharged into the environment as well as the quality of surface waters and natural mineral waters.

It performs analyses for enteroviruses and somatic, F-specific and *B. fragilis* bacteriophages. Molecular biology methods have also been introduced such as hybridization, PCR and RFLP for genotyping of the above viruses.

The laboratory participates in the same research programmes as the Water Microbiology Laboratory and has established a collaboration with the Hellenic Pasteur Institute.

GMO Laboratory

The GMO laboratory was officially established in July 2003. A National Control program was designed in cooperation with the Public Health Services of the Ministry of Health, to check the labeling of foodstuffs containing Soya or Maize in accordance with the Labeling, Presentation and Advertisement of foods (General) Regulations of 2002 (Appendix 10). Six samples labeled as GM free (5 Soya drinks, 1 Soya mince meat) were examined and the label was found to be correct. In October 2003, the GMO Lab participated successfully in the Gemma Proficiency Scheme of the CLS, UK.

IT UNIT

In 2003 the IT Unit developed a Web page for the State General Laboratory and a new system for the management of education of personnel, called "SGL Education System". The Unit also upgraded the systems "LIMS" and "Tenders" and took full responsibility for updating the "Inventory System". An Internal Mail was also set up.

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SGLSum2003.doc