

UNITED NATIONS  
ENVIRONMENT PROGRAMME (UNEP)

INTERNATIONAL REGISTER OF  
POTENTIALLY TOXIC CHEMICALS  
(IRPTC)

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USSR STATE COMMITTEE FOR  
SCIENCE AND TECHNOLOGY (GKNT)

USSR COMMISSION FOR UNEP  
(UNEP/COM)

EVALUATION MEETING ON THE TRAINING COURSE  
IN PREVENTIVE TOXICOLOGY

(Moscow, USSR, 9 - 10 June 1983)

Report



USSR-UNEP/IRPTC PROJECT  
"CONTROL OF HAZARDS POSED BY CHEMICALS  
TO HUMAN HEALTH AND THE ENVIRONMENT"

CENTRE OF INTERNATIONAL PROJECTS, GKNT  
MOSCOW

## I. Introduction

The Evaluation Meeting on the International Training Course in Preventive Toxicology was convened in accordance with the 1983 workplan of the USSR-UNEP/IRPTC Project "Control of Hazards Posed by Chemicals to Human Health and the Environment" and took place in Moscow, USSR, 9 - 10 June 1983.

The Meeting was attended by 22 experts, including representatives of UNEP/IRPTC, IPCS, as well as some lecturers and participants in the course. (See Annex I).

## II. Opening of the Meeting

Dr V.P. Voronin, Deputy Director of the Centre of International Projects, GKNT opening the Meeting on behalf of the Centre welcomed the participants and wished them success in their deliberations.

Dr A. Kucherenko, IRPTC, in his welcome to the participants, emphasized the main tasks and goals of the meeting, and suggested that the results of the evaluation of the training course together with proposals and recommendations during the meeting be presented in the form of a short report.

## III. Appointment of Officers and Draft Agenda

Professor I.P. Ulanova was elected Chairman with Dr P. Senga as Vice-Chairman. Professor Yu.S. Kagan and Professor S.N. Zaidi were elected Rapporteurs. The meeting then adopted the draft Agenda. (See Annex II).

## IV. Report on the Activities of the International Training Course in Preventive Toxicology

The report on the Activities of the International Training Course in Preventive Toxicology, which was introduced to the participants of the meeting by the Meeting's Rapporteur Prof. Yu.S. Kagan, states that the International Training Course in Preventive Toxicology was organized in accordance with the workplan of the USSR-UNEP/IRPTC Project on "Control of Hazards Posed by Chemicals to Human Health and the Environment". The Course was held in the USSR, namely Moscow, Kiev (the capital of the Ukrainian Soviet Socialist Republic) and Tashkent (the capital of the Uzbek Soviet Socialist Republic) from 11 April to 9 June 1983.

An information booklet for the Course participants which had been prepared by the USSR-UNEP/IRPTC Project in collaboration with the Moscow Research Institute of Industrial Hygiene and Occupational Diseases, the USSR Academy of Medical Sciences, and approved by IRPTC was distributed through the IRPTC National Correspondents to familiarize applicants with the objectives and tasks of the Course. Following the information about the forthcoming training course some 40 nominations were received by IRPTC and the USSR-UNEP/IRPTC Project. All application forms were officially endorsed by the Governments of the respective countries.

For the final selection of candidates, a special committee consisting of the Course organizers, representatives of the USSR Commission for UNEP, and IRPTC was established. The selection was made in accordance with the requirements of the Course Programme, and the recommendations of the International Workshop of Experts held in June 1982. After consideration of all the applications a list of 20 participants from various countries was approved, including 13 from Asia, the Middle East and the South-West Pacific, 1 from Africa, 3 from Europe, and 3 from North and South America. (See Annex III). The majority of candidates who were not accepted this year expressed their desire to take such a course in future and were interested in receiving the training materials of the current Course. Several candidates suggested that courses be also organized in French and Spanish.

The principal objective of the Course in Preventive Toxicology was to upgrade knowledge of different problems and methods of toxicology of specialists who have practical experience in such fields as public health and environmental protection with a view of using the obtained knowledge for establishing hygienic standards and controlling toxic substances in the human environment. The Course was also intended to encourage a broader international information exchange on toxicity and hazards of chemicals, as well as to facilitate the use of existing sources of information by acquainting the participants with national and international information systems, and problems of interpretation and comparison of the available data.

In his opening address Prof. Yu.F. Isakov, Deputy Minister of Public Health of the USSR welcomed the Course participants and stressed the importance of preventive toxicology in the field of public health and environmental protection from harmful effect of chemical substances. The significant role of Soviet scientific

and practical institutions especially for controlling the use of chemicals and preventing disease in the USSR was stressed and the value of international cooperation and exchange of accumulated experience for accomplishing one of the most noble tasks facing humanity, that is the safeguarding of human health and the quality of the environment, was also emphasised.

The programme followed by the Course was designed by several eminent scientists in the USSR and modified in accordance with the recommendations of the International Workshop of Experts held in 1982.

The final programme then, contained the following eight principal sections:

1. General Environmental Concerns.
2. General Toxicology.
3. Preventive Toxicology of the Industrial Environment  
(Occupational Health).
4. Preventive Toxicology of Agro-chemicals.
5. Preventive Toxicology of the Communal Environment  
(air, water, food and consumer products).
6. Preventive Toxicology of Ecosystems.
7. Clinical Toxicology (medical).
8. Information Systems on Chemicals; Hazards and Risk Assessment.

In accordance with the Course curriculum the study of these sections included the main lines of research, the topical and methodological problems of toxicology, the theoretical and practical aspects of development and implementation of sanitary standards and control of chemical substances in the environment. Efforts were made to ensure that the Course participants were acquainted with the principles, structure and availability of data in national and international data banks as well as with the concept of assessing hazards and risks posed by chemicals.

It had been recommended that 30 per cent of all training time should be devoted to practical sessions and that lectures should be accompanied by seminars. Therefore the entire Course programme was planned in such a way as to back up theoretical training with practical sessions.

The first four weeks and the summing-up session were held in Moscow. The 1982 Workshop while discussing the Training Course programme made a special recommendation to the effect that since many climatic and geographical conditions

in developing countries were similar to those in the Central Asian Republics of the USSR it would be valuable for the Course trainees to get acquainted with their experience in using chemical substances. Therefore a course of lectures in preventive agricultural toxicology of chemical substances was conducted for 19 days in the Ukrainian and Uzbek Republics and practical sessions were held under field conditions.

A total of 78 lectures were delivered to the trainees in preventive toxicology, ecotoxicology, and the general problems of environmental protection, including 13 lectures given by foreign experts. Among the Course lecturers were such prominent Soviet scientists as Prof. N.B. Bochkov, Academician, the USSR Academy of Medical Sciences; Prof. Yu.I. Kundiev, Academician, Academy of Medical Sciences of the Ukrainian Republic; Prof. B.T. Velichkovsky and Prof. N.F. Izmerov, Corresponding Members of the USSR Academy of Medical Sciences and Professors I.V. Sanotsky and I.P. Ulanova, the last two being WHO experts. Such well-known international experts as Prof. R. Côté (Canada), Prof. J. Koeman (Netherlands), Prof. F. Kaloyanova-Simeonova (Bulgaria), Prof. S. Zaidi (India), as well as other scientists representing international organizations such as Dr J.W. Huisman, Dr M.I. Mikheev, Dr M.I. Gunar, Dr M. Gilbert also delivered lectures.

A major objective of the theoretical and practical sessions of the Course was to familiarize the trainees with the experience gathered in the USSR and other countries in preventive toxicology. It was also important to focus the trainees' attention on the fact that environmental protection is a complex problem with different economic, technological, social, medical, administrative, and legal aspects.

During the Course the participants saw four documentaries, namely "Environmental Protection in the Ukrainian SSR", "Pesticides", "Environmental Hygiene" and "Health for All by the Year 2000". Some lectures were illustrated by slides, tables, diagrams, etc.

The main part of the theoretical and practical sessions of preventive toxicology of agricultural chemical preparations were conducted in the Ukraine and Uzbekistan.

Friendly and good working contacts between the lecturers and participants of the course as well as a good team spirit among the trainees largely contributed to the success and pleasant atmosphere of the Course. All the discussions held during the Course were marked by a scientific approach. During the discussions the

Course participants also shared information on the topical problems of preventive toxicology in their home countries. Thus, for example, an interesting presentation was made by Dr A. Gilman (Canada).

Following the completion of the first half of the Course the participants were asked to give their comments on the subjects covered and make their suggestions to improve the quality of the Course. The majority of comments and suggestions were taken into account by the organizers for improving the concluding part of the Course. The closing sessions of each Course section involved lively discussion of that section by the trainees, especially in terms of the new knowledge they acquired and the practical application of information on return to their respective countries.

One example of this is the trainees' comments while discussing the section "Preventive Toxicology of Agricultural Chemicals". Thus, Dr M. Dajani (Jordan) stated that he valued highly the information he had received in Moscow and Kiev. He considerably broadened his scope in research methods, namely the methods of determining threshold concentrations, handling scientific information sources, etc. Moreover, the main thing, according to Dr M. Dajani, is that upon completion of the Course he would use the knowledge obtained in his practical work.

Dr M. Bates (New Zealand) recognized the efficient organization of this programme section and stressed that the Soviet methods of toxicity criteria evaluation as well as the information he received on chronic toxicity and cumulative properties of chemicals would add to his toxicological knowledge.

Dr A. Gilman (Canada), Dr P. Mungai (Kenya), Dr Li Sheng (China), and Dr A. Awang (Malaysia) also contributed to the discussion, making special reference to the high standard of lectures and their value for anyone wishing to improve his or her knowledge in preventive toxicology.

Discussion of virtually all issues emphasized that achieving the key objectives in public health and environmental protection was possible if international cooperation in that realm was broad and comprehensive.

Upon the completion of the Course, the participants were requested to answer a number of questions dealing with the organization of the Course. All the answers gave a high assessment of the Course and stressed the advisability of holding similar courses in the forthcoming years.

An opinion was expressed that it would be desirable to publish the Course proceedings in a collected volume that would provide a good teaching aid and be of use in conducting similar future courses.

Upon the completion of the Course, certificates were issued and presented to all the participants to acknowledge that they had covered the complete programme of the International Training Course in Preventive Toxicology.

V. Discussion of the Results and Achievements of the Training Course in Preventive Toxicology

The report on the Course was unanimously accepted by the participants of the Evaluation Meeting. Dr J.W. Huismans further emphasized that the Course fulfilled the need for additional training in preventive toxicology, especially for people in advisory or decision-making positions. A small working group composed of Prof. R. Côté (Chairman), Dr M. Bates, Dr G. Smith and Dr A. Koucherenko, established at the proposal of the Meeting's participants to analyze the questionnaires, noted with satisfaction that all the questionnaires gave a high assessment of the Course. On the other hand, a number of trainees said, that in their opinion, the 2-month duration of the Course is too long and should be reduced to 6 weeks. The trainees also recommended that the audio-visual support of the Course be increased in quantity and quality, and lectures be conducted by summaries. They also recommended that pre-briefings be held before visits to institutes, which will also allow time for formulating questions and make the visits more useful for the trainees.

Useful recommendations for the organizers of the Course were made in respect of the content and presentation of the training programme. During discussion, Dr I.P. Ulanova and several other participants of the Evaluation Meeting argued that any reduction of the Course was undesirable because it could deteriorate the training and result in exclusion of some important sections of the programme.

The participants of the Meeting emphasized that training and research in preventive toxicology, i.e. the application of toxicological information for the protection of human health and the environment, were of great importance in the development of national and international programmes on chemical safety.

The participants of the meeting consider that there should be a greater involvement of the International Programme on Chemical Safety (IPCS) in the organization and conducting of future International Training Courses in Preventive Toxicology. To this end, the IRPTC Director should discuss the matter with senior officials of the IPCS Secretariat.

The participants of the Meeting noted that the programme of the International Training Course in Preventive Toxicology, held in the USSR from 11 April to 9 June 1983 had been fully completed. The Course maintained a high scientific, methodological and organizational standard. During the Course, consideration was given to the proposals and recommendations made by the trainees for improvements. All lectures, both by Soviet and foreign lecturers provided data reflecting the most current achievements in toxicology and preventive toxicology. The Course trainees, during the seminars and discussions, shared their own knowledge and information on the situation in preventive toxicology in their respective countries.

The participants of the Evaluation Meeting noted with satisfaction the unanimous view of the trainees that the Course had considerably increased their level of knowledge in preventive toxicology which would undoubtedly help them in the development and implementation of their national programmes on evaluation and control of chemicals in the environment.

Also discussed were such matters as a two-stage selection of candidates, possibilities for holding the Courses in French and Spanish and for better editing of the English translation of lectures, and organization of follow-up studies of the former participants' practical work.

Upon completion of the discussions, Rapporteur Prof. S. Zaidi presented a draft summary and recommendations of the Meeting. The report of the Evaluation Meeting together with recommendations was then unanimously approved by all the participants.

#### VI. Recommendations of the Evaluation Meeting.

1. Recognizing that training and research in preventive toxicology have great importance for the development of national and international programmes on chemical safety; noting that the programme of the International Training Course in Preventive Toxicology, held in the USSR from 11 April to 9 June 1983 has been fully completed and that the Course maintained a high scientific, methodological and organizational standards, the Evaluation Meeting recommends that:

- a course in preventive toxicology, within the framework of the USSR-UNEP/IRPTC Project, be provided in 1984 and subsequent years with a consideration of also serving French and Spanish-speaking trainees;



- the organizers of the Course consider the publication of the training materials in a collected volume that would provide a teaching and promotional aid for future courses in preventive toxicology, as well as for relevant training courses under other international cooperation projects;

- there should be a greater involvement of the International Programme on Chemical Safety (IPCS) in the organization and executing of future International Training Courses in Preventive Toxicology. With this in mind, a recommendation was made that the Director of IRPTC should explore the possibility of discussing the matter with the Manager of the Central Unit of IPCS.

2. The Meeting further considers that the activities of the International Register of Potentially Toxic Chemicals and the International Programme on Chemical Safety are particularly relevant to the Course and, therefore, it is proposed that it would be desirable to increase the number of sessions devoted to the detailed study of the methods and procedures of IRPTC data profile preparation, and national and international regulatory documents and programmes on control of exposure to chemicals as well as to IPCS Environmental Health Criteria documents and similar evaluative reviews of chemicals. The practical application of this information would be of considerable interest for participants of the Course, especially for those representing developing countries.

3. With a view to increasing the effectiveness of the training course the meeting deems that it would be expedient to select participants for the course in two stages. The first stage would involve submission and review of applications as approved by appropriate government agencies. At the second stage potential participants should be requested to submit written reports or papers reflecting their personal experience with toxicological practices in their respective countries. The participants' command of working languages of the Course should also be fully taken into account.

4. It seems desirable to select a well matched group of trainees and to place more emphasis on upgrading their knowledge in specific aspects of preventive toxicology by combining theoretical problems with 'hands-on' training. Practical sessions and seminars should be devoted to the application of obtained knowledge in solving the problems of protection of human health and the environment against the negative impact of chemicals. Future Course programmes should place more emphasis on chemical hazard evaluation and risk assessment.

5. It is recommended that the Course organizers should collect information from the first group of trainees on the application of the knowledge acquired during the course. To this end, a special questionnaire should be formulated and sent to the participants later this year or early in 1984. The information received will serve as a basis for revision of the training programme.

6. While giving a positive assessment of the Course programme, the Evaluation Meeting deems it expedient to change some sections of the programme in such a way as to avoid unnecessary duplication and to focus the attention of trainees on the key elements of preventive toxicology, as well as to distribute more evenly the training load between the days of the course. It is also recommended that a means be sought by UNEP/IRPTC to have the English translation of course papers properly edited, preferably by a professional editor of English mother tongue.

Evaluation Meeting on the International  
Training Course in Preventive Toxicology

Moscow, USSR, 9 - 10 June 1983

LIST OF PARTICIPANTS

1. Dr S.N. BAIBAKOV Deputy Chairman, USSR Commission for UNEP, Director of the Centre of International Projects, Moscow, USSR
2. Dr M.N. BATES Principal Toxicologist, Department of Health, Participant of the Training Course, New Zealand
3. Dr R.P. COTE Lecturer, Institute for Resource and Environmental Studies, Halifax, Canada
4. Dr M. DRAPER Medical Inspector/Toxicologist, International Programme on Chemical Safety, WHO, Geneva, Switzerland
5. Dr O.F. FILENKO Scientific Adviser for the Course Section on Preventive Ecotoxicology, Moscow State University, Moscow, USSR
6. Dr M.I. GUNAR Officer, International Programme on Chemical Safety, WHO, Geneva, Switzerland
7. Dr J.W. HUISMANS Director, IRPTC/UNEP, Geneva, Switzerland
8. Dr T.I. ISKANDAROV Director, Uzbek Research Institute of Sanitary, Hygiene and Occupational Diseases, Tashkent, USSR
9. Dr Yu.S. KAGAN Head of Department, All-Union Research Institute of Hygiene and Toxicology of Pesticides, Polymers and Plastics, Kiev, USSR
10. Dr M.I. KOLEVA Assistant, Institute of Labour Hygiene and Occupational Diseases, Participant of the International Training Course in Preventive Toxicology, April - June 1983, Moscow; Sofia, Bulgaria
11. Dr Yu.I. KUNDIEV Director, Kiev Institute of Labour Hygiene and Vocational Diseases, Ukrainian Ministry of Health, Kiev, USSR
12. Dr A.I. KUCHERENKO Scientific Affairs Officer, IRPTC/UNEP, Geneva, Switzerland
13. Dr V.E. KOVSHILO Head, Main Sanitary and Epidemiological Department, USSR Ministry of Health, Moscow, USSR

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14. Dr G.N. KRASOVSKY           Head of Laboratory, A.N. Sysin Research Institute of General and Communal Hygiene, USSR Academy of Medical Sciences, Moscow, USSR
15. Dr LI SHENG                Chief, The Group of Register of Potentially Toxic Chemicals, Institute of Health, Chinese Academy of Medical Sciences, Participant of the International Training Course in Preventive Toxicology, April - June 1983, Moscow; Peking, China
16. Dr J. PIOTROWSKY          Scientific Worker, Department of Sanitary Toxicology, National Institute of Hygiene, Participant of the International Training Course in Preventive Toxicology, April - June 1983, Moscow; Warsaw, Poland
17. Dr O. RATANACHAN          Scientist, Toxic Substances Control Section, Technical Division, Food and Drug Administration, Ministry of Public Health, Participant of the International Training Course in Preventive Toxicology, April - June 1983, Moscow; Bangkok, Thailand
18. Dr P.J. SENGA              Specialist YI, National Environmental Protection Council (NEPC), Ministry of Human Settlements, Participant of the International Training Course in Preventive Toxicology, April - June 1983, Moscow; Philippines
19. Dr E. SMITH                First Medical Officer, Albright and Wilson Ltd., London, United Kingdom
20. Dr I.P. ULANOVA            Scientific Consultant of the Course Programme in Preventive Toxicology, Chief of Laboratory, Institute of Labour Hygiene and Occupational Diseases, USSR Academy of Medical Sciences, Moscow, USSR
21. Dr V.P. VORONIN            Deputy Director of the Centre of International Projects, GKNT, Moscow, USSR
22. Dr S.H. ZAIDI              Adviser on Toxicology and Environmental Pollution, Ministry of Railways, Lucknow, India

Evaluation Meeting on the Training Course  
in Preventive Toxicology

Moscow, USSR, 9-10 June 1983

AGENDA

1. Opening of the Meeting
2. Appointment of Officers
3. Adoption of the Agenda
4. Organization of work
5. Discussion of the results and achievements of the Training Course in Preventive Toxicology.
6. Evaluation of the Course and development of recommendations and proposals for the organizers of the Training Course in Preventive Toxicology
7. Adoption of a short report with recommendations
8. Any other matters
9. Closure of the Meeting

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INTERNATIONAL TRAINING COURSE  
IN PREVENTIVE TOXICOLOGYMoscow, Kiev, Tashkent  
USSR, 11 April - 9 June, 1983LIST OF PARTICIPANTS

Nos.	Country	Name	Present occupation
1	2	3	4
1.	Bolivia	JUSTINIANO RUIZ Jorge	Professor in Analytical Chemistry, the Chemistry Department, Universidad Mayor de San Andrés, IRPTC Correspondent
2.	Bulgaria	KOLEVA Margarita Ilieva (Ms)	Assistant, Lecturer in General Hygiene, Chair of Hygiene, Institute of Hygiene and Health
3.	Canada	GILMAN Andrew Philip	Toxicologist-Evaluator, Environmental Health Directorate, Health and Welfare Canada
4.	China	LI SHENG	Chief, The Group of Register of Potentially Toxic Chemicals, Institute of Health, Chinese Academy of Medical Sciences
5.	Ecuador	MAYORGA Jorge Humberto	Chief, Contamination Control Division, Ecuadorian Institute of Sanitary Works (IEOS)
6.	Jordan	DAJANI Moh'd Hussein Mahmoud	Director, Department of Environmental Health, Ministry of Health
7.	India	MOHAN DAS	Scientist, Occupational Health Centre
8.	Iran	FARCHAD Ali Asghar	Expert of Industrial Hygiene Unit, Ministry of Health
9.	Kenya	MUNGAI Paul Mwaura	Environment Protection Officer, Pollution Control, National Environment Secretariat
10.	Kuwait	AL-ZAYED Yousef Salem Essa	Head, Work Environment Section, Ministry of Public Health, Environmental Protection Department
11.	Malaysia	AWANG Abdul Rahman Bin	Environmental Control Officer, Ministry of Science, Technology and Environment

1	2	3	4
12.	Mauritius	LAM THUON MINE Lam Cheng	Scientific Officer, Division of Fisheries and Natural Resources, Ministry of Agriculture
13.	New Zealand	BATES Michael Neville	Principal Toxicologist, Department of Health
14.	Pakistan x)	CHAUDHRY Muhammad Ali	Senior Scientific Officer (Entomology), Cotton Research Institute
15.	Philippines	SENGA Pollyanna Javier (Ms)	Science Research Specialist, National Environmental Protection Council (NEPC), Ministry of Human Settlements
16.	Poland	PIOTROWSKI Jerzy	Scientific Worker, Department of Sanitary Toxicology, National Institute of Hygiene
17.	Portugal	RAMOS Flavia Manuela (Ms)	Member of the Secretariat of the Toxicological Commission of Pesticides
18.	Thailand	JOTISAKULRATANA Suparatana (Ms)	Environmentalist, Toxic Substance Section, Office of the National Environment Board
19.	Idem	RATANACHAN Orapin (Ms)	Toxic Substances Control Section, Technical Division, Food and Drug Administration, Ministry of Public Health
20.	Idem	SENGKISIRI Wigrom	Assistant Director, Division of Occupational Health, Department of Health, Ministry of Public Health

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x) Unable to attend