Collaborating Centres
PROGRESS REPORT

Folder eCC_00002693 is in stage Annual Report Due (Last-2)

Institution Name	National Institute of Nutrition & Food Safety		
Name of the relevant department, unit, section or area of the institution			
City	Beijing		
Country	CHINA	Reference Number	CHN-24
Title	WHO Collaborating Centre for Food Contamination Monitoring		
Report Year	07/2009 to 07/2010		

1. Implementation of the work plan. For each main activity briefly explain how the activity was implemented, the outcome and impact and, if available, the results of the evaluation (e.g. evaluation of a course by the participants). Also explain difficulties (if any). Do not provide technical results in this form (technical results, if applicable, are to be sent directly to the WHO Department you work with).

Activity 1	The 4th China Total Diet Study
Explanation	

Chinese food consumption data were collected during the 4th China TDS. Around 700 food samples were collected and cooked. Composite food samples were made and analyzed on province basis. First, 12 individual provincial composites were made and analyzed separately and then regional basket composite data were formed. The Chinese dietary intakes for heavy metals and harmful elements (as Pb, Cd, Al, Sn, Hg & As), pesticides and veterinary drugs, persistent organic pollutants (POPs) and emerging organic contaminates (chloropropanols, acrylamide, perchlorates), macro (as Na, K, Mg, Ca) and micro elements (as Fe, Zn, Cu, Se, Cr, Mn etc.), lipids were obtained. Most of the element items are the first time to be determined by ICP-MS. And speciations of elements are focused, such as total and inorganic As, total Hg and methyl Hg, as well as total Sn and organic Sn. In particular, the dietary iodine intake assessment based on the 12 provincial composite samples was completed in the 2007 Chinese TDS, which provided critical data in risk assessment of the impact of universal salt iodization to dietary iodine intake in Chinese population. Residues monitoring and dietary exposure assessment in Chinese TDS have been extended to 73 veterinary drugs for the first time, which included 16 sulfates, 5 tetracyclines, 12 quinolones and 7 beta-lactam antibiotics, as well as 13 beta-agonists and 30 sedatives.
In addition, there were 122 pesticides residues including 34 chlorinated congeners, 59 organophosphorous compounds, 11 pyrethroids and 17 carbomates and their metabolites in 9 food items. Some contaminants occurred during cooking process, such as chloropropanols and acrylamide were also detected and evaluated. 3-Chloro-1, 2-propanediol was the only one chloropropanols detected in Chinese TDS samples. And the conyamination of 3-Chloro-1, 2-propanediol in food samples was mainly come from condiments, especially soy sauce. The evaluation of exposure of 3-Chloro-1, 2-propanediol showed that intake of 3-Chloro-1, 2-propanediol from daily diet was 21.3% of PMTDI. For acrylamide, the main food contributors to the total exposure were processed food such as vegetables, cereals, potato and potato products, etc.

Monitoring and dietary exposure assessments of POPs in 4th Chinese TDS samples were conducted using the same food samples. In addition to DDTs, HCHs and dioxin-like compounds which were involved in 3th TDS, other OCPs and some new compounds (PBDEs and PFOS) in POPs list of Stockholm Convention were also analyzed. Furthermore, HBCD, PFOA and TBBPA had been analyzed in 4th Chinese TDS samples. To evaluate effectiveness of implementing Stockholm Convention resolutions in China, individual breast milk from 12 Chinese TDS provincial sampling sites (rural and urban) were collected in 2007., in which 24 pooled breast milk samples from 1237 subjects were analysis for all POPs except toxaphene. The results of the biomonitoring data have been submitted to Stockholm Convention as POPs backgrounds in China. The analysis of some new POPs such as PBDEs, PFOS, PFOA, HBCD and TBBPA in breast milk was finished. The associations between dietary intake and body burden of PBDEs and PFOA were analyzed. And the results indicated that dietary intake is an important source for human exposure to PBDEs and PFOA in China. The same association was not found in PFOS, HBCD and TBBPA.

Papers are being prepared based on the data from 4th China TDS and will be published in 2010-2011. The distribution of individual dietary intake of Cd from the 4th China TDS based on individual food samples will be submitted to GEMS/Food after the laboratory analysis was done.

Activity 2 The 5th China Total Diet Study

Explanation

The Fifth Chinese TDS was carried out from 2009 to 2012. In this China TDS, the study sites were increased from 12 provinces to 20 provinces. Based on the 20 individual provincial food composites, 5 regional food composites instead of 3 regional composites were made. Another change from the 5th TDS is that food sample collection and laboratory analysis will be conducted in 5 provinces each year, instead of all 12 provinces carried out TDS in one year. In this new system, one national TDS will be conducted every 5 years.

The first five provincial TDS in the Fifth Chinese TDS was carried out in Beijing, Shanghai, Zhejiang, Fujian, and Liaoning, which was focused on the iodized salt and dietary iodine intake of coastal areas. The Fifth Chinese TDS training course was hold in Beijing from 21 to 25 June 2009, which was attended by almost 40 participants from the 5 provinces. Chinese TDS Experts (Dr. Junshi Chen, Dr. Yongning Wu, and Ms Xiaowei Li) were invited to give lectures in the training course. The analysis and dietary intake assessment of iodine of these 5 provincial based on composite and individual food samples were completed. The data of the dietary iodine intake served as the scientific basis of iodized salt policy assessment by the Ministry of Health.

In 2020-2011, the 5th China TDS will be conducted in another 6 provinces (including Heilongjiang, Hebei, Jiangsu, Hubei, Hunan and Guangxi), including a survey on food consumption of each provinces. The collection and preparation of food samples will begin after the completion of the food consumption survey. Sample analysis will carried out in all 11 provincial diet composite samples from 2009-2010 and 2010-2011. As in the 4th China TDS, about 150 analytes in all 12 food categories will be analyzed, such as heavy metals, harmful elements, nutrient minerals, pesticides, POPs, aflatoxins, lipids etc.

2. Other information related to the Collaboration between the centre and WHO. Briefly describe visits by WHO staff to the centre, visits by the centre staff to WHO (HQ and/or Regional Office), use of the centre staff by WHO, support provided by centre staff for courses cosponsored or organized by WHO (HQ and/or Regional Office), WHO financial support to the centre through contractual or Technical Services Agreement or other type of support provided by WHO, any other collaborative activities. Please mention any difficulties encountered in the collaboration and suggestions for increased and improved collaboration with WHO.

1, Prof. Dr Yongning Wu participated in the Joint FAO/WHO Expert Consultation on the Risks and Benefits of Fish Consumption in 25-29 January 2010, Rome. The purpose of the expert consultation was to provide a framework for assessing the net health benefits or risks of fish consumption that would assist governments to prepare advice for their own populations.

2. Prof. Dr Yongning Wu participated in the 72nd Joint FAO/WHO Expert Committee on Food Additives, which evaluated acrylamide, arsenic, DON, furan, mercury, perchlorate in food in 16-25 February 2010, Rome.

3. Dr. Junshi Chen participated in the 73rd Joint FAO/WHO Expert Committee on Food Additives in his capcity of the Chair of CCFA, which evaluated certain food additives and contaminants (lead and cadmium) in 8-17 June 2010, Geneva.

4. Prof. Dr Yongning Wu was invited as a member of the WHO working group on data reporting for hazards occurring in food (HOF) and provided the Chinese data reporting experience.

5. Monitoring data was collected and submitted to GEMS/Food for Pb and Cd in about 4,474 individual food samples collected (?) in 2000-2006 and 34,831 individual food samples in 2007-2009 separately, DON in about 3,006 individual food samples and fumonisin in about 577 individual food samples, acrylamide in 1,316 individual food samples and perchlorates in 92 food composite samples and 24 composite breast milk samples from about 1,200 mothers. And dietary intakes data of average Chinese adult man from 12 provinces for Pb, Cd, Hg & Methyl-Hg, As & iAs, acrylamide, from 4th Chinese TDS have been sent to WHO GEMS/Food. All these data were used in the 72nd and 73rd JECFA evaluations and in the preparation and revision of Chinese national food safety standard for maximum limits of contaminants and mycotoxins.

6. HongKong has submitted monitoring data to GEMS/Food, including benzoic acid, aluminium, ethyl carbamate and polybrominated diphenyl ethers. These data were copied to our centre at the same time.

3. Collaboration with other WHO Collaborating Centres: Briefly describe the nature and outcome of the collaboration and the name(s) of the other WHO collaborating centre(s) with which the centre has collaborated. If applicable, please mention the name of the network of WHO CCs to which the centre belongs. Also include suggestions for increased and improved collaboration with other WHO CC

1. This WHO CC was involved in data submission to the GEMS/Food Programme with other WHO Collaborating Centres including SIN17, AUS38, CAN 64 and FRA111. The report of the WHO working group and data reporting for hazards occurring in food (HOF) was finished in 25 June 2010 and is available on the Internet at: http://www.who.int/foodsafety/chem/gems/en/index.html

2 The Dutch Ministry of Health, Welfare and Sport and the Ministry of Health of the People's Republic of China have signed a memorandum of understanding in order to jointly invest in global health. A Dutch delegation visited the National Institute for Nutrition and Food Safety, China CDC in Beijing in August 24-27, 2009. The working visit included the following items
2.1 Lectures on chemical risk assessment methodologies (from both RIVM and China CDC)
2.2 Lectures on microbiological risk assessment methodologies (from both RIVM and China CDC) incl. 1 day interactive presentations on MRA activities in the Netherlands and China (completed, on-going and future projects)
2.3 A 2-day training on microbiological risk assessment
? s-QMRA tool
? MPRM
? Dose-response
? Risk characterization
? Disease burden
? Cost-benefit analysis
2.4 Lectures and training on dose response modeling (Bench Mark Dose / PROAST)
? A 2-day training with hands on exercises in using and interpreting the software models.
2.5 Lectures and expert visit to the Chinese laboratories (tasks of reference Laboratories; both chemical and microbiological), especially carried out the bioavailibity test for As in seaweed and rice.
2.6 Lectures and training of the evaluation of Food Contact Materials

3 European Commission (EC) - Orange House Partnership (OHP) Training Programme to Assist the Ministry of Health (MoH) with Technical and Scientific Aspects Related to food safety risk assessment and food safety standard setup. The two training courses were held in September (Sep. 15-17 and 23-25, respectively) 2009. The other two were held in October 2009. Training contents focus on:
3.1 In-depth, tailored training on the establishment, operation, general functioning and working procedures of scientific expert committees on food safety risk assessment;
3.2 In-depth, tailored training, guidance and advice on surveillance principles, methodology and related activities;
3.3 In-depth, tailored training, guidance and advice on the development of food safety standards.

4. Sino-German food safety training project
In 2009, the Germany scientists from Germany Institute of Risk Assessment (BfR) and BVL, two agencies respectively responsible for food safety risk assessment and foodborne hazardous monitoring, were invited to China to give a training course in food safety areas. The detailed items include:
4.1 To elaborate and implement risk based inspection of food enterprises in selected provinces. Upgrade skills and infrastructure to the required level (Sept 24-25, 2009).
4.2 Elaborate and implement proposal for improved Chinese risk communication procedures (incl. communication channels, communication strategies) (Nov. 2-4, 2009)