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Discussion on Current Pollution Status andLegislation of Environmental Hormone in China

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Abstract

Environmental hormone mainly cause harm to the reproductive function of human being and animal kingdom, which is a serious threat to human and animal survival or reproduction. This paper blacklisted 70 kinds of environmental hormones, studied pollution situation of some environmental hormone (which are remaining in the atmosphere, water, sediment, soil, seafood and human tissue) in Chinese Environment and population, and outlined the environmental hormone pollution hazards. Therefore, China should strengthen basic research in environmental hormone pollution, strengthen the environmental management and the publicity of environmental law to curb environmental hormone pollution. In addition, some legislative measures should be proposed, laws and regulations of environmental hormones should be formulated, and the law enforcement should be strengthen to control environmental hormones .

KeyWord: Environmental hormone, Human health, Environmental management, Environmental law.

Environmental hormone is the material which can cause abnormal effects and interfere with the endocrine system of human being and animal kingdom in the environment. Due to the most of the current organic compounds which interfere animal and human endocrine system have estrogenic characteristics, so the environmental hormone is also known as "endocrine disrupting chemicals ". Environmental hormone has the similar function to endocrine hormone of organisms in the structure and physiological aspect. It will has reproductive harm to the human being and animal kingdom. Many scientists in the world today is committed to the research in environmental hormone pollutants [1]. E. Carlsen et al reported that[2], in the past 50 years, male sperm density decreased by about 50% in 21 countries in Western Europe, which led about 20% of couples to loss of fertility. Environmental hormone is not only lead to male infertility, but also has teratogenic effect and carcinogenic effect, lower immune function, further more, lead to a variety of autoimmune diseases. There are some date display that [3], breast cancer and other reproductive system cancer patients were increased notably in China in recent years. The areas

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with high incidence of breast cancer were Shanghai, Beijing, Tianjin and other cities which have higher degree of industrialization. Because environmental estrogen have a wide range of pollution, great impact, and a more direct threat to human survival, at present, the Western countries compared the issue of environmental estrogens with the ozone layer depletion and the greenhouse effect, which shows its important position. Environmental hormones and persistent organic pollutants (POPs) is the two hot spots in the field of environmental science and engineering research.The first 12 POPs –that were so-called "Dirty Dozen"-- included in the current provisions of international conventions are in the category of environmental endocrine disrupting chemicals[4].

1. Environmental Endocrine Disruptors

In recent years, a number of countries and international organizations have screened out a list for environmental hormone pollutants which have great harm and needed to control urgently. In 1997, World Wildlife Fund (WWF) listed 67 species (types) environmental hormones [3,5], which are basically organic compounds. WWF regarded three heavy metals -- lead, cadmium and mercury -- as suspected environmental hormones. In addition, resin plasticizers (bisphenol A), detergents and surfactants (nonylphenol) also have the same effect as environmental hormones. In fact, there are a large number of compounds in the environment have not been detected on reproductive toxicity or hormone effect. It has reason to believe that many of them are environmental estrogens pollutants. Generally, these compounds are highly soluble and could enrich through the food chain. Especially in the body fat of animals and human being that lie in the high level of the food chain, environmental estrogens pollutants can be increased dozens of times or even thousands of times; moreover, they are toxic, refractory, and can retain for a long-term in the environment.

Table 1 The list of 67 species (types) environmental hormone compounds by WWF

category	names of compound
Pesticides (27)	HCHs，DDT*，DDE and DDD，dicofol（Mitigan），Aldrin,*，dieldrin *, endrin*，heptachlor *, heptachlor epoxide，chlordane *，oxidation chlordane, trans nine chlorine, toxaphene *, mirex *, methoxychlor, DBCP, endosulfan，malathion, methomyl, ethyl parathion (1605)，aldicarb, carbaryl, fenvalerate (speed kill D), cis-(H) fenvalerate,，cypermethrin, permethrin，chlorine enemy resistance（chlordecone）
Fungicides (8)	benomyl, hexachlorobenzene * (HCB), Maneb,Dipher，mancozeb，Thioneb，ziram, vinclozolin(ethylene sclerotia agent)
Herbicides (9)	alachlor, aminotriazole，Atrazine, 2,4-D, 2,4,5-T，metribuzin，nitrofen (NIP)，trifluralin, simazine (CAT)
Industrial raw materials and products (21)	Bisphenol A, alkylphenols (from C 5 to C 9), polychlorinated biphenyls * (PCBs)，pentachlorophenol (PCP), dichlorophenol (DCP), benzophenone，n-butylbenzene，eight chlorine Styrene, styrene, 4 - nitro-toluene, diethyl phthalate (DEP), dipropyl phthalate (DPrP)，dibutyl phthalate (DBP), dibutyl phthalate Pentyl (DPP), DHP, dicyclohexyl dimethyl phthalate ester(DCHP)，phthalate (2 - ethylhexyl) phthalate (DEHP), butyl benzyl phthalate（ BBP ），ethylene di-ethyl ester，tributyltin (TBT), triphenyltin (TPT)
Non-products (2)	dioxins (polychlorinated dibenzo dioxins * and polychlorinated dibenzofurans *, PCDD / Fs), benzo (a) pyrene (BaP)

Note: * denotes the first controlled pollutants which were adopted by < Stockholm Convention on Persistent Organic Pollutants> on May 2001.

2. The Residual Status of some Typical Environmental Hormones in Chinese Environment and Population

Most of the environmental estrogens are fat-soluble and have stable chemical property. They can be enriched through the food chain and accumulated for a long-term after absorbed into the living organisms because of their long biological half-life (such as dioxin would remain for 7 a on average). There are three routes in the environmental estrogens' ecosystem cycle and transfer, that means the soil channel, water channel and air channel. The major route of soil is insecticide spraying and leaching of waste containing estrogen, then the estrogen enter into the livestock and human through the crop and pasture; the water route is that the estrogen retained in soil runoff, pesticides and industrial waste water is concentrated by aquatic plants and animals, then transferred to birds, fish and people; the air route is primarily through breathing the polluted air, or transferred to the livestock and human being through the dust deposition of the pasture and crop.

2.1 Organochlorine Pesticides

Organochlorine pesticides are about two-thirds of 67 environmental hormones in WWF's list. In 1950s~1980s, the use and production of HCHs and DDTs accounted for more than half of the total pesticides in China. In the past 30 years, the total consumption of HCHs in China has reached about 490 million tons, which was 3 times more than the amount of the international over the same period; China stopped production of organochlorine pesticides in 1983. Table 2 displayed the soil remnants of HCHs and DDTs in three grain producing areas in east of China. From the table, it can be seen that the soil remnants in Tianjin area (in the north of China) were higher than Jiashan area(in the central of China), and followed by the lowest Pearl River Delta (in the southern region). DDE and DDD are DDT's metabolite. The (DDE + DDD) / DDT ratios were less than 1 in the original adobe of Tianjin and the Pearl River Delta, which indicated that there were still pollution input of DDT. Firstly, the use of DDT may not be effectively controlled. Secondly, it may still come from the use and production of pesticides dicofol. The latter is producted by DDT as raw materials, it may contain 3.54% -10.8% of DDT. And in itself, it is one of the 67 kinds of environmental hormones listed in Table 1.

Table 2 Recent Soil Remnants of HCHs and DDTs in Different Climatic Zones in China(ng • g-1 dry weight) (6-9)

Region	HCHs	DDTs	DDE+DDD / DDT
Tianjing	45.8 (x) (1.3-1094.6)	56.0 (x) (0.07-972.2)	0.98
Jiashan in Zhejiang province	34.6 (me) (nd-190.5)	48.9 (me) (0.94-229.3)	16.6
Pearl River Delta	2.6 (x)	14.5 (x)	

Note: "x" means the average, "me" is median, the number in the brackets is range of content. The same below. Chinese Soil Environmental Quality Standard of HCHs and DDTs: level 1≤ 50

The HCHs and DDTs contamination were also often detected in atmospheric environment in Chinese cities. As it shown in Table 3, the content of two types pesticides in atmospheric particles in Tianjin, Beijing, Hohhot and other northern cities was significantly higher than that in the southern Pearl River Delta cities. These cities (DDE + DDD) / DDT ratios were less than 1, indicating that DDT was still

inputted in these areas.

Table 3 The Detection Condition of HCHs and DDTs in Part of China's Urban Air Particles (10) (ng • m-3)

Region	HCHs	DDTs	DDE+DDD / DDT
Beijing	0.240	0.962	0.13
Tianjing	0.581	1.874	0.21

There are prevalence of HCHs and DDTs pollution in Chinese water environment. Table 4 listed recent developments of HCHs and DDTs detection in some of the Chinese surface water. The DDTs pollution in Daya Bay and the estuary of the Minjiang River is prominent, which beyond the relevant water quality standards in varying degrees. However, in Table 5, (DDE + DDD) / DDT ratios of the waters were less than 1(except Liaodong Bay was 1.5), that means the DDT contamination was still inputted in these area.

Table 4 The detection situation of HCHs and DDTs in some Chinese surface waters (ng • L-1) (11-14)

Water area	HCHs	DDTs	DDE+DDD / DDT
Liao River	92.4 (x) (65.0-133.9)	30.0 (x) (17.5-63.2)	0.1
Liaodong Bay	38.9 (x) (26.8-47.1)	8.2 (x) (nd-36.2)	1.5
Guanting Reservoir	0.1-53.5	nd-15.2	<1
Yangtze River in Nanjing	9.3-10.5	1.6-1.8	<1
Minjiang River Estuary	297 (x) (103-515)	159 (x) (89.1-234)	0.6
Macao Inner Habor	8.7-27.0	8.6-29.8	0.8
Daya Bay	285.0 (x) (33.5-1228.5)	188.4 (x) (26.8-975.9)	0.1

The two pesticides' residual volume of surface sediments in some Chinese waters is in the range of 2-20 ng / g (15), in the second Songhua River, Pearl River Delta and some high Value area of the East China Sea shore, the DDTs residual volume was higher than the ecological high risk assessment (ERM) in other countries; in other waters such as Guanting River, Minjiang River estuary, Daya Bay and Yellow Sea near the shore, some high value points of DDTs were between ERM and ERL (low risk assessment limits). In addition, most of the (DDE + DDD) / DDT ratios were more than 1, shown that sediments mainly composed by DDT metabolite, but the ratio was less than 1 in the Liao River, Minjiang River Estuary and Daya Bay, also shown that DDT was still inputted in these areas.

In Chinese environment, aldrin, dieldrin, endrin, heptachlor, heptachlor epoxide, methoxychlor and endosulfan have pollution at different degrees (Table 5), compared with the United States surface water quality standards, they basically had various degrees of excess, and some were many times higher than the upper limit of detection.

Table 5 The detection situation of organochlorine pesticides in some of the surface water in China(ng • L-1) (14)

Water area	Guanting Reservoir	Jiulong River Estuary	Daya Bay	Macao Inner Habor	Reference standard*
aldrin	nd-8.71	2.66-46.5	1.0-227.0	5.14	0.13
dieldrin	nd-2.73	nd-278	nd-2.3	0.41	1.4
endrin	nd-0.76	nd-16.9	0.9-64.2	2.07	2.3
heptachlor	nd-7.13	0.19-9.25	nd-12.3	0.93	0.21
heptachlor epoxide	nd-5.76	0.05-4.31	1.0-109.0	0.39	0.1
methoxychlor	nd-31.6	12-844	18.2-2179	0.15	30
endosulfan I	nd-1.65	0.08-7.58	0.1-1.2	3.26	110,000
endosulfan II	nd-36.4	nd-346	0.1-70.9	1.12	110,000

*is Surface Water Quality Standards for U.S. Environmental Protection Agency EPA822-Z-99-00; “nd” is not detected, the same below.

2.2 Polychlorinated Biphenyls (PCBs)

Between 1965-1974, China has produced nearly 10 thousands tons of PCBs, which was mainly used in power capacitors, paint and so on. Although the number of production and use was far from developed countries, but Table 6 shown that in some areas, such as the second Songhua River, Liao River, Minjiang estuary and the Pearl River Delta, the pollution of PCBs was still in a high degree. And in the coastal waters of the Yellow Sea and East China Sea , PCBs of sediments was also on the high side.

Table 6 The Remnant Situation of PCBs in surface sediment in some Chinese Waters(ng • g-1 dry weight) (14)

Water Area	**PCBs content**
The second Songhua River	0.6- 337
Liao River	0.9-42.9
Guanting Reservoir	0.81-9.7
Yangtze River estuary	0.19-18.95
Jiulong River Estuary	15.13-57.93
Pearl River Delta	10.2-485.5
Bohai Sea nearshore	0.15-6.78
Yellow Sea nearshore	0.15-24.2
East China Sea nearshore	0.15-24.1
South China Sea nearshore	0.14-6.54
Risk assessment Value of sediment in North America	ERL：22.7
	ERM：180
Assessed reference value of Literature [15]	20

2.3 Benzo (a) pyrene (BaP)

BaP is the most toxic compound in polycyclic aromatic hydrocarbons, and mainly comes from non-product pollutants which is discharged by fossil fuel combustion. BaP is widespread in the environment of China, especially in winter, the air content of BaP would far exceed the WHO Air Quality Standards in many Chinese cities (Table 7).

Table 7 The BaP of atmospheric particles in part of Chinese cities (ng • m-3) (14)

Cities	**Sampling time**	**The BaP of atmospheric particles**	
		Winter	**Summer**
Guangzhou	（ 2000 ）	7.07	0.88
Nanhai	（ 2000 ）	3.62	0.66
Hangzhou	2000/2001	10.5-13.5	0.1-0.8
Lhasa	2002	3.95	

2.4 Dioxins (PCDD / Fs)

Dioxins (PCDD/Fs) is generic terms of polychlorinated dibenzo dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs).Dioxins mainly come from the CPs, PCBs, pulp bleaching, metal smelting and waste discharge, chemical impurities releasing, and waste incineration emissions of industrial process. There are some reports in Schistosomiasis Area of Jiangxi Province and Qingdao coastal area (Table 8). In the infected areas, dioxin residues (come from Oncomelania drugs - impurities of sodium PCP) in human blood and human milk was also 2-3 times higher than non-infected areas. The dioxin pollution in Qingdao coastal sediments and shellfish may be related with industrial wastewater discharge. Moreover, it is also worth noting that Jianqing Zhang has also detected a trace amount of dioxin in one brand of milk which is commercially available [14].

Table 8 The Remnant Situation of dioxin in Jiangxi schistosomiasis area and Qingdao coastal area (14)

Testing samples and dioxin toxic equivalent units	**Jiangxi schistosomiasis area**	**Non-infected area**	**Qingdao coastal area**
saface sediment in water (pgTEQ·g^{-1} dry weight)	16.2-439	1.11	11.6-369
Human blood agedness(35-70）	16.3	6.4	
Juvenile(15-19) (pgTEQ·g^{-1}fat)	9.0	4.8	
Human milk(18-30 years) (pgTEQ·g^{-1} fat)	5.4	2.6	
Shellfish(meat) (pgTEQ·g^{-1} dry weight)			2.9-5.1

2.5 Phthalates

There are 8 kinds of phthalates are environmental hormones (Table 1). Among them, dibutyl phthalate (DBP), phthalate (2 - ethylhexyl) phthalate (DEHP), diethyl phthalate (DEP) are all detected in Chinese air, water, soil and food (Table 9). It is reported that DEP, DBP and DEHP were generally contained in human fat, blood and semen in Shanghai and Chongqing (Table 10); in addition, the contents of these substances are correlative with semen quality. When the target organ was exposed in 0.08-1.32 mg • L^{-1} condition, some negative effects will happen, such as semen liquefaction time will be extended, semen volume will be decreased, sperm deformity rate will be increased and the activity will be reduced and so on [14].

Table 9 Recent contamination of DBP, DEHP and DEP in aquatic product and environment in some parts of China (14)

Environment type / concentration unit	Region	Sampling time	DBP	DEHP	DEP
Atmospheric particles ng·m^{-3}	Hohhot	1996	55.0-253.5	13.8-32.6	163.35
	Beijing	2001	1.23		
	Shijingshan	1999	28.2-283.2	90.8-215.2	
	Hangzhou				
Drinking water source ng·L^{-1}	Yellow River in Wanjiazhai	1999	63140		
	Chongqing	2000-2001	80-9480		
	Hangzhou	（1999）	1000-33000	Nd-17000	
Aquatic product ng·g^{-1} wet weight	Market of Shanghai, Jiangsu and Zhejiang	（2003）	270-1160	1200-3730	130-550

Table 10 The exposure of DBP, DEHP, DEP in human tissues (14)

Region	Shanghai				Chongqing
Human tissues	**Blood serum** mg·L^{-1}		**Semen** mg·L^{-1}	**Fat** mg·kg^{-1}	**Blood** mg·L^{-1}
Sample num	52 （female）	8 （male）	36	11	50 （female）
DBP	2.55-12.61	4.76-14.94	0.09-0.57	nd-2.19	10.45-191.13
	6.52 (x)	7.24 (x)	0.16 (x)	0.99 (x)	78.29 (x)
DEHP	2.62-22.78	4.05-23.99	0.08-0.98	nd-1.88	
	8.13 (x)	9.48 (x)	0.28 (x)	0.52 (x)	
DEP	nd-15.96	nd-37.91	nd-1.88	0.03-2.01	
	1.52 (x)	6.60 (x)	0.52 (x)	0.66 (x)	

2.6 Organic tin Compounds

Tributyltin (TBT) and triphenyltin (TPT) are widely used as insecticides in pesticides, antifouling paint of marine vessels and facilities, wood preservatives and textiles mildew preservatives and so on. TBT is generally detected in the waters of Chinese nearshore and ports (Table 11), but at present, China still lack of appropriate control regulations and standards.

Table 11 The TBT detection situation of commercial seafood in part of Chinese city [14]

Region	Sampling Time	Seafood Type	TBT content range(ngSn·g^{-1} wet weight)
Dalian	2001	Snails,shellfish,shrimp,seaweed	nd-360.2
Yantai	2001	Snails,shellfish	nd-63.5*
Beijing	2001-2002	Snails,shellfish,shrimp	nd-38.8**
Shanghai	2001	Snails,shellfish,crab	nd-42.9
Fuzhou	2001	Snails,shellfish	nd-51.3

Note: *-- sand Mya (porcelain clam) had the highest content at 1029.3 ngSn • g-1 wet weight; **--sand Mya also had the highest content at 4193.9 ngSn • g-1 wet weight.

3. Carry out the Basic Research and Management of Environmental Hormone Pollution Effectively

The 12 Pops , which will be reduced and eliminated According to Stockholm Convention on Persistent Organic Pollutants made by governments, are all environmental hormone compounds showed in table 1. China is one of the first signatories of the Convention, so we should control the pollution of the environment Hormone with strategic foresight.

3.1 Clean Production Process Should be Carried out to Control and Reduce the Pollution of Environmental Hormones.

Taking DDT as an example, although the use of DDT was stopped since 1984 in China, it is still inputted into environment In many regions in recent years. from this, it can be seen that, in order to control and reduce the pollution of Environmental hormones and achieve the goal of Zero emission of Environmental hormones, Green Agriculture should be carried out and new Pesticide should be developed to replace the Pesticide belonging to Environmental hormone compound. At the same time, cleaner Production should be carried out also, and new materials, new products should be developed to replace the materials and products which are belonging to Environmental hormone compound.

3.2 Enhance the Basic Research of Environmental Hormone to Promote the Scientific Development of Social and Economy.

Started lately, the basic research of environmental hormone was Very weak in our country, and should be strengthened, especially the research of the source, route and destination, as well as the influence on Human health, reproductive health and ecological. That's will Provide scientific basis for making Ecological risk assessment and Relevant laws and standards, comprehensive treatment of Environmental hormone pollution, elimination of Backward process revision of industrial structure, and implementation of Clean production process.

3.3 Enhance the Management and Investment of Environmental Monitoring and Carry out the Investigation of the Degree of Contamination and Damage to Human Health of Environmental Hormone Widely.

The width and depth of the pollution of environmental hormone , The number of people involved and Condition of the patients, are all Qualitative or semi-quantitative and not Entirely clear. The detection of

environmental hormone needs Advanced equipment and higher analysis technology, which is our weakness. In order to investigate the Pollution status of every kind of environmental hormones and the Sources and emissions of them, Environmental monitoring team building must be enhanced and Advanced equipment should be provided with Strategic vision. environmental monitoring is the basic of Environmental Enforcement, so it is necessary to increase the Capital investment to purchase Advanced analytical instruments, Improve the quality of monitoring staff, set impeccable monitoring indicators, Track new technologies and methods, and to implement strict quality assurance procedures. Emissions of environmental hormone should be mastered in time to expose the environmental violations timely. And realize the leap of control pollution from end to source. At the same time, To make a fundamental improvement of pollution of environmental hormones, Effective environmental management measures should be adopted, Law enforcement should be enhanced and law-enforcement procedure should be standardized.

3.4 Guide the Direction of the Research of Environmental Hormone Correctly

In recent decades, Research projects and articles on Damage of environmental hormone to human health are focus on Molecular mechanism, risk assessment and model building mostly, and there are not many research results can do good to Solving practical problems and making Policies and laws. The following two research should be strengthened: firstly, the Ecological distribution and migration of environmental hormone, whose research results can be used to direct the cut of the way of Hormone getting into human body; secondly, Chronic and cumulative poisoning mechanism, which is mostly focus on the Pathogenesis and clinical outcomes observation based on High consistency model at the present time, having A certain gap to The actual situation that bio-accumulation last for a long time in human body leading disease.

3.5 Strengthen the International Cooperation and Exchanges, and Improve the Levels of Monitoring and Supervision of Environmental Hormone Pollution.

In the filed of control and research of environmental hormone pollution, China should strengthen the international cooperation and exchange, in order to mater the newest information, Theory and technology of control of environmental hormone pollution, and to Improve China's levels of monitoring, research of environmental hormone pollution as soon as possible.

4. Develop Laws of Environmental Hormone, and Strengthen Law Enforcement

4.1 There are Defects of Environmental Hormone Pollution Legislation in China's Environmental Legal System.

To meet the development of environment , Various types of laws about pollution control are promulgated or re-enacted after modification, which provides legal weapons For law enforcement. But there is few implementation details in 7 laws and 3 regulations in the filed of environment. Some environmental laws, regulations, policies are Uncoordinated, and there is still no legal basis for some environmental areas such as environmental hormone pollution.

4.2 There are Many Environmental Law Enforcement Bodies, Leading the Unclear Responsibilities and Rights

Multi-sectoral and sub-level law enforcement system combining ruling with classification are implemented in the field of environmental protection, which means that Environmental protection administration departments supervise and administrate the environment completely, and the relevant administrative departments implement the special supervision and management. But in reality, Environmental protection laws and regulations do not make specific provisions on how the environmental protection administration departments supervise the other departments, and what rights they have, which lead the environmental protection administration departments can not carry out the supervision and management on the environment effectively. Many departments are involved in the event of management Environmental hormone pollution, but few of them have done effectively.

4.3 The Enforcement Tools are Weak, and Local Government Lack Pressure and Power for Enforcement of Environmental Laws

Though pollution control regulation Provides local government's responsibility for the quality of the environment, do not clearly define that the responsibility is political responsibility, legal liability or economic responsibility. The lack of assessment of Environment quality in Performance evaluation leads local government's responsibility for environment quality to be an empty slogan.

4.4 Only Timely Development and Revision of Standards and Benchmarks of Environmental Hormone Pollution can Establish Adapted Laws

Formulation of standards should base on a huge benchmark system. For lack of basic research information, our country do not have own environmental hormone pollution benchmark system, and the current environmental standards have to reference to international standards. Only to establish our own environmental benchmark system and amend current environmental hormone pollution standards, can adapted laws be setted up.

4.5 Pay More Attention to the Effect of Economic Instruments on Environmental Legislation

It's necessary to enlarge the use of economic instruments in the filed of environment Protection. In the filed of sewage charges , Charging Excessive Emissions should be replaced by charging Emissions and Increasing fees for Excessive Emissions. Besides, some new economic measures should be developed, such as fiscal stimulation, Emissions trading, insurance of Environmental liability damage and Promotion of environmental labelin, etc [16] .

4.6 Strengthen Publicity and Education, Enhancing People's Awareness of Environmental Laws and Concerns of Environmental Hormone Pollution

Now, environmental hormone pollution exists in our surroundings anytime and anywhere, which means that Everyone has chance to exposure in it. However, people have few Deeper understandings about the perniciousness of hormone pollution. So, facing the challenge of environmental hormone pollution, it's necessary to increase publicity and education and improve people's awareness and vigilance of environment hormone pollution to lead more and more people to participate in the activities of control of hormone pollution. With enlarging the publicity of the damages of hormone pollution to human body,

people's awareness of environmental laws should be increased.

4.7 Establish or Improve The Regulations and Standards of Control of Environmental Hormone Pollution, and Supervise Hormone Pollution Basing Laws.

Environmental protection in China has gradually kept up with the track of legal management. However, having many gaps, the regulations and control standards are still far from perfect, and can not meet needs of the development of economic and social and people's Improving living standards. So, only to establish and improve the relevant laws and standards, can Pollution of environmental hormone compounds be supervised and controlled better. And only to do so, can environment pollution appeared in the process of production, storage, sale and use of hormone compounds be reduced, and can economic, social and ecological environment develop harmoniously.

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