

Analysis on the Current Situation of Domestic Health Food in China

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Abstract: *Objective:* To understand the current situation of China's health food, and to provide a reference for the development of Healthcare Industry. *Methods:* Create a database of China's health food information from China Food and Drug Administration website. Conduct a systemic analysis of the regional distribution, annual distribution, dosage forms distribution and functions of health food. *Results:* Guangdong and Beijing have produced the most health food; the data line of health food quantity has two peaks in 1997 and 2004. From 2013, the number of health food started growing steadily; health food formulations are mainly capsules and tablets; the functions of health food are centered mainly on strengthening the immune system and relieving physical fatigue. *Conclusion:* Innovation is needed in the formulations and the functions of domestic health food; China's domestic health food industry should increase investment in science and technology; Overall, China's health food industry has a bright future.

Keywords: Health Food, Current Situation, Analysis, China

1. Introduction

With the improvement of living standards, people are paying increasing attention to their health, and the pursuit of health food has reached unprecedented heights [1-2]. According to China Food and Drug Administration Order No. 19 released on April 30, 2005 health food registration management approach (Trial) [3], health food is claimed to have specific health functions or to supplement the vitamins and minerals, which is suitable for specific people. It can regulate body functions but will not treat diseases, and will not produce any acute, sub-acute or chronic hazards. Since the country's Ministry of Health issued and implemented the "Health food management approach" in 1996, the development of health food has made great development. In this study, the regional distribution, annual distribution, dosage forms distribution and functions of health food approved by China were analyzed and sorted systematically [4]. The study will provide reference for the establishment of

laws and improvement of health food registration and approval. In addition, it will provide insight for scientific research on health food.

2. Material and Method

2.1. Source of Material

The data was collected from the health food database of China Food and Drug Administration (CFDA) from 1996 to December 31, 2015.

2.2. Classification Method

Regional Distribution: Based on the Chinese name of the applicant, we analyzed statistically the number of health food approved by provinces, autonomous regions and municipalities. If the applicant includes two or more parties, we utilized the first applicant's information

Annual Distribution: the statistics are based on the

approval certificate of health food [5].

- (1) Dosage Forms Distribution: The dosage form attributes are based on the product's name category [6].
- (2) Functional Distribution: According to the Ministry of Health and the CFDA's classification of healthcare functions, we calculated the first function of the health food if the product has claimed more than two functions.

2.3. Data Processing

The statistics of health food information was analyzed with Excel 2015.

3. Results

3.1. Regional Distribution Statistics of China's Health Food (See Table 1)

Table 1. Regional distribution statistics of China's health food.

Province	Quantity of health food	Percentage (%)
Guangdong	2538	16.41
Beijing	2356	15.23
Shandong	1187	7.67
Zhejiang	917	5.93
Jiangxi	851	5.50
Shanghai	848	5.48
Jiangsu	845	5.46
Shaanxi	559	3.61
Hubei	485	3.14
Fujian	462	2.99
Sichuan	450	2.91
Heilongjiang	419	2.71
Tianjin	414	2.68
Jilin	401	2.59
Henan	389	2.51
Liaoning	348	2.25
Hebei	300	1.94
Hunan	218	1.41
Guangxi	207	1.34
Yunan	196	1.27
Shanxi	184	1.19
Anhui	153	0.99
Hainan	140	0.91
Guizhou	126	0.81
Neimenggu	122	0.79
Gansu	83	0.54
Xinjiang	74	0.48
Chongqing	63	0.41
Tibet	49	0.32
Qinghai	43	0.28
Ningxia	42	0.27
Summation	15469	100.00

3.2. Annual Distribution Statistics of China's Health Food (See Table 2)

There are 15469 types of health food in total approved between the first health food number-(1996) No.1-approved by Ministry of health on November 4th, 1996, and the health food number-G20151070- approved by CFDA on January 4th, 2016. Among them, 5184 were approved by Ministry of health between November 4th, 1996 and July 8th, 2003; and 10285

between the first health food number- G20030001- approved by State food and drug administration on December 12th, 2003 and G20151070 on December 31th, 2015. The annual quantity of health food is shown in Table 2.

Table 2. Annual distribution statistics of China's health food.

year	Quantity of health food	percentage
1996	53	0.34
1997	1053	6.81
1998	758	4.90
1999	681	4.40
2000	779	5.04
2001	473	3.06
2002	848	5.48
2003	576 (499*+77#)	3.72
2004	1501	9.70
2005	924	5.97
2006	736	4.76
2007	397	2.57
2008	623	4.03
2009	559	3.61
2010	737	4.76
2011	744	4.81
2012	685	4.43
2013	930	6.01
2014	1342	8.68
2015	1070	6.92
summation	15469	100.00

Note: *represents the quantity of health food approved by Ministry of health
represents the quantity of health food approved by CFDA

3.3. Dosage Form Distribution Statistics of China's Health Food (See Table 3)

The main dosage form of China's health food is pharmaceutical, including ordinary food form.

3.4. Function Distribution Statistics of China's Health Food (See Table 4)

According to the Ministry of Health's notice on issuing the Technical Manual of Health Food' Examination and Evaluation (2003 edition) ([2003] No. 42 issued by Ministry of Health), health food has 27 healthcare functions as shown in Table 4. However, only 12 immune regulation functions of health food was recognized in 1996 by the Assessment Routine and Examination Method of Health Food ([1996] No.38 issued by Ministry of Health) issued by the Ministry of Health in 1996; after that, the function was increased to 24 in the Ministry of Health's notice on problems of health food management([1997] No. 38 issued by Ministry of Health) issued by the Ministry of Health in 1997; following that, the functions was adjusted to 22 in 2000 in the Ministry of Health's Notice on Scope Adjustment of Health Food Function's Reception and Approval ([2000] No.20 issued by Ministry of Health) issued by the Ministry of Health in 2000. According to Article 33 of registration and management tentative method of health food implemented since July 1th 2005, the validity period of health food's approval is 5 years, and after that application and examination should be done again. However, there is no validity period on the certificate of

approval of the health food approved before July 1, 2005. And those certificates should still be valid according to principles of Administrative Permission Law, not bounded by the 5-year's validity period rule. As a result, among all the 15469

health food, some function does not included in the 27 healthcare functions, or couldn't be combined neither. They are shown in the last part of Table 4.

Table 3. Dosage form distribution statistics of China's health food.

Dosage form	Dosage form distribution	Quantity of health food	Percentage (%)	Total (%)
capsule	Hard capsule	4769	30.83	43.60
	Soft capsule	1976	12.77	
	Ordinary tablet	2111	13.65	
tablet	Chewable tablet	942	6.09	22.62
	Buccal tablet	354	2.29	
	Effervescent tablet	92	0.59	
Liquid form	Oral liquid	1541	9.96	10.21
	Health drink	21	0.14	
	fluid	11	0.07	
	Concentrated liquor	7	0.05	
powder		1015	6.56	6.56
Medicated tea		611	3.95	3.95
Medicated vine		550	3.56	3.56
granule		475	3.07	3.07
electural		318	2.06	2.06
pill		191	1.23	1.23
drink		100	0.65	0.65
paste		93	0.60	0.60
	milk	12	0.08	
Ordinary food	Acidified milk(yoghourt)	9	0.06	0.38
	Health vinegar	18	0.12	
	biscuit	8	0.05	
	Soft sweets	12	0.08	
others		233	1.51	1.51
summation		15469	100.00	100.00

Table 4. Function distribution statistics of China's health food.

Healthcare function	Quantity of health food	Percentage (%)
The functions listed in the 27 healthcare functions		
1 Boosting immunity	4289	27.73
2 Helping to reduce blood fat	1221	7.89
3 Helping to reduce blood sugar	522	3.37
4 antioxidation	273	1.76
5 Helping to improve memory	232	1.50
6 Relieving asthenopia	113	0.73
7 Accelerating lead excretion	49	0.32
8 Clearing throat	197	1.27
9 Helping to reduce blood press	115	0.74
10 Improving sleeping	452	2.92
11 Facilitating lactation	9	0.06
12 Reliving fatigue	1919	12.41
13 Improving anoxia endurance	76	0.49
14 Helping to improve protection against radiological hazard	43	0.28
15 Losing weight	358	2.31
16 Improving growth and development	44	0.28
17 Increasing bone mineral density	1997	12.91
18 Improve alimentary anemia	186	1.20
19 Helping to improve protection against chemical liver injury	336	2.17
20 Treating acne	49	0.32
21 Treating chloasma	252	1.63
22 Improving skin moisture	75	0.48
23 Improving skin oil content	0	0.00
24 Regulating intestinal flora	71	0.46
25 Facilitating digestion	85	0.55
26 Helping bowel movement	430	2.78
27 Helping to improve protection against gastric mucosal damage	72	0.47
The functions not listed in the 27 healthcare functions		
1 Supplementing vitamin	1261	8.15
2 Delaying senescence	358	2.31

Healthcare function	Quantity of health food	Percentage (%)
3 Inhibiting tumor	77	0.50
4 radio resistance	50	0.32
5 Supplementing folic acid	45	0.29
6 antimutation	31	0.20
7 un stated	60	0.39
8 others	122	0.79
summation	15469	100.00

4. Discussion

4.1. The Dosage Form of Domestic Health Food Needs to Be More Innovative

The dosage form of domestic health food is mainly pharmaceutical, which includes general food preparation. As seen in Table 3, the forms of domestic health food are mainly concentrated on two formulations: capsules (hard capsules, soft capsules) and tablets. The proportion of general food preparation in health food is smaller. Table 3 also shows that capsules and tablets have some advantages in accurate quantity and long shelf-life, which meet the requirements of quantitative intake and quality stability of health food. It is also because that many health food production enterprises were pharmaceutical production enterprises, they have advantages in personnel, equipment and experience when it comes to capsule and tablet production, and the cost is lower compared to developing new product formulations [7].

4.2. Functions of Domestic Health Food Are Too Concentrated

CFDA approved 27 healthcare functions of health food, but the health functions excessively focused on strengthening the immune system and relieving physical fatigue. This leads to low-level repeat in health food manufactures, and some enterprises concentrated on the few best-selling health food for economic reasons. This phenomenon strongly affects the interests of the original health food production enterprises, leading to the disordered competition. It is not conducive to the normal development of health food production enterprises [8-10]. Therefore, the products lack technological elements and competitiveness, and it's hard to build well-known brands because of too much imitation between enterprises, which leads to funds deficiency and difficulty to form and expand enterprise scale. So it can be concluded that scientific research institution and health food production enterprises should increase investment in human resources, material and finance, accelerate research and development speed of health food with the other 25 categories of health functions.

4.3. China's Domestic Health Food Industry Should Increase Investment in Science and Technology

China's domestic health food enterprises are mostly small or medium enterprises with deficient financial strength, limited research and development capabilities. Their financial strength is not strong enough, research and development

capabilities are also limited, and the scale of most enterprises was small. There are few high-tech products with independent intellectual property rights. And the life cycle of some health food products is short, and there is no obvious advantage of brand. In addition, enterprises lack enough motivation in technology innovation, strong product development strength and high technology elements. In order to integrate with the world and enter the world market, government should make further efforts to regulate the market of health food, establish effective and unified rules, which is not only the voice of the government, but also the enterprises and people. At the same time health food production enterprises should also adopt new technologies, new processes and new equipment to make continuous technology innovation, and produce attractive products. Thus, the market of health food will grow into mature.

4.4. China's Health Food Industry Has a Bright Future

According to the quantity of health food each year as shown in Table 2, from 1997 to 2012, the data line of health food quantity has two peaks respectively in 1997 and 2004. The first peak in 1997 was formed because China formally implemented the approval number management of health food since 1996, leading to large quantities of declaration of existing health food. The second peak in 2004 was formed due to that CFDA issued an exposure draft of health food registration management approach (Food and Drug Administration NOTE letter [2004] 61) on April 19th, 2004. Health food production enterprises rushed to register their productions. Therefore, the number of health food has a relatively large increase. From 1997 to 2012, the number of health food productions is relatively stable. Since the beginning of 2013, with the releasing of "the State Council opinions on promoting the development of healthy service industry" (No. 40 document in 2013 of the State Council), the number of health food began to show new upward trend. It can be concluded that the demand of health food is expanding. It becomes a worldwide trend to research and develop health food meeting people's needs. And the release of the State Council's opinions would lead China's health food industry to prosper.

Health food industry is a global sunrise industry, and the market is growing rapidly. The Government should devote more efforts on research and development of health food, guide research institutions and health food manufacturers to increase investment on scientific research, and promote the sustainable development of basic research work on health food. Thus there would be more health food products with more ordinary dosage forms to meet people's needs.

Meanwhile, the Government should also continually develop and improve laws and regulations, standards and normative documents relating to health food, ensuring the health and orderly development of health food industry.

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