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# Protection of the Geographical Indication Right and New Plant Variety Right of Green Chinese Onion in China

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**Abstract** Geographical indication right and new plant variety right are important agricultural intellectual property. This article researches the current situation on protection of geographical indication right of green Chinese onion resources and new plant variety right. And it puts forward the following measures for improvement: (i) Promoting the implementation of geographical indication product protection based on the national quality system; (ii) Establishing the national quality standards of geographical indication green Chinese onion, in order to improve quality standardization; (iii) Encouraging more enterprises within the scope of protection of geographical indication to use special signs of geographical indication; (iv) Unifying the green Chinese onion brands within the scope of protection of geographical indication; (v) Achieving the dual protection of geographical indication right and new variety right of green Chinese onion; (vi) Developing the tourism resources on geographical indication green Chinese onion, to develop tourism agriculture.

**Key words** Green Chinese onion, Geographical indication, New plant variety right, Intellectual property

In the seven major types of intellectual property rights covered by the *TRIPS Agreement*, geographical indication, as an independent type of intellectual property, is provided in special sections. It is one of the three topics of the Doha Round of negotiations on intellectual property, and a hot topic drawing widespread attention. Geographical indication rights are an important part of agricultural intellectual property, mainly for the intellectual property protection of traditional famous and high-quality specialty (the specialty in a broad sense, such as agricultural products, wine, food, arts and crafts, and textile). Geographical indication and origin naming system have had more than 100 years of history<sup>[2–3]</sup>. France is one of the birthplaces of the system. From the beginning, France mainly used the system to protect champagne and other types of liquor produced at home. However, China's geographical indication protection system was implemented in 1995, with serious conflicts and high degree of repeat. There were mainly five geographical indication protection systems successively<sup>[1–10]</sup>. Currently, there are still three of them as follows: (i) The geographical indication product protection of the State Administration of Quality Supervision, Inspection and Quarantine; (ii) The geographical indication trademark registration of the State Administration for Industry and Commerce; (iii) The agricultural product geographical indication registration of the Ministry of Agriculture. Among them, only the former two are the systems for the protection of geographical indication intellectual property of food products.

New plant variety right, like geographical indication right, falls into the category of intellectual property<sup>[1]</sup>. Through artificial

cultivation and development of wild plants discovered, new plant variety is the appropriately named plant variety, with novelty, distinctness, uniformity and stability<sup>[12–13]</sup>. The units and individuals completing breeding enjoy the exclusive rights to the varieties they authorize, namely having the new plant variety right. Green Chinese onion is divided into four types: ordinary green onion, *Allium ascalonicum*, *Allium ascalonicum* L., and *Allium fistulosum* L. var. *viviparum* Makino. The major producing areas include Shandong, Hebei, Henan, Shaanxi, Gansu, Tianjin, Heilongjiang, Shanxi, Liaoning, Jilin, Inner Mongolia and other northern provinces. Among them, Zhangqiu in Shandong is the largest cultivation, processing and export base of green Chinese onion in China.

How to use the geographical indication intellectual property provided in the special section under the WTO TRIPS Agreement<sup>[1–10]</sup>, coupled with intellectual property protection of new plant variety<sup>[11–12]</sup>, in order to cultivate green Chinese onion brand and enhance the international competitiveness of it, is an important issue for the further development of green Chinese onion industry in China. In view of this, this article discusses the current protection situation concerning the geographical indication right of green Chinese onion and new plant variety right, and development countermeasures.

## 1 Protection of geographical indication right

**1.1 Protection of geographical indication products** On January 31, 2000, Shaoxing wine became China's first origin product (namely the geographical indication product). So far, in accordance with *Provisions on the Protection of Origin Products* and *Provisions on the Protection of Geographical Indication Products*, the former State Bureau of Quality and Technical Supervision, and the State General Administration of Quality Supervision, Inspection and Quarantine, have implemented the geographical indication product protection on 957 kinds of products at home. The types of

Received: May 2, 2013 Accepted: June 3, 2013

Supported by Humanities and Social Sciences Planning Fund Project (11YJA850019); Scientific and Technological Innovation Project, the Ministry of Culture (2011021); Hubei Social Science Fund Project (2010274).

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geographical indication products in Sichuan, Guangdong, Hubei, Fujian and Henan come out top, involving 15 major categories (fruits, vegetables, grain and oil, tea, Chinese herbal medicine, livestock, poultry, aquatic products, handicrafts, spices, flowers, textiles, wines, beverages, tobacco).

In addition, the State General Administration of Quality Supervision, Inspection and Quarantine approved the geographical indication product protection on 9 European specialties. The green Chinese onion resources include three national geographical indication products: Guangwu green Chinese onion, Huaxian green Chinese onion and Yanling green Chinese onion (Table 1).

**1.2 Registration of geographical indication trademark** The geographical indication trademark is the mark shows where a commodity comes from, which can indicate the particular quality, reputation or other characteristics of this commodity are mainly determined by the natural factors or human factors in this area. Applying for the geographical indication tradesigns is a common practice

**Table 1 National geographical indication products of green Chinese onion and the use of special signs**

Geographical indication products	Approval time	Ranking approved	The scope of protection of geographical indication	The use of special signs	
				The number of enterprises	The number of enterprises
Guangwu green Chinese onion	2010. 07. 13	688	Guangwu Town, Wangcun Town, Chengguan Township in Xinyang City, Henan Province	0	0
Huaxian green Chinese onion	2010. 12. 03	753	Chishui Town, Huazhou Town, Xinglin Town, Guapo Town, Lianhuasi Town, Liuzhi Town, Xiamiao Town, Xinzhuang Township, Bijia Township, Gaotang Town, Daming Town, Dongyang Township, Jinhui Township, Jindui Town in Huaxian County, Shaanxi Province	0	0
Yanling green Chinese onion	2010. 12. 24	797	Dongyanling Village, Gaoyanling Village, Zhangyanling Village, Xueyanling Village, Wang Village, Donghuang Village, Xihuang Village, Xinzhuang Village in Gaocun Township, Xiuwu County, Henan Province	0	0

In addition, the State Administration for Industry and Commerce registered 32 geographical indication trade signs of products from Thailand, the United States, Mexico, Jamaica, Italy, the United Kingdom, Germany and South Korea. The green Chinese onion resources registered one national geographical indication trademark: Zhangqiu green Chinese onion (Table 2).

**Table 2 National geographical indication trademark of green Chinese onion**

Name of trademark	Registrant	Registration number
Zhangqiu green Chinese onion	Zhangqiu Green Onion Scientific Research Association in Shandong Province	1 299 947

**1.3 Geographical indication registration of agricultural products** The geographical indication trademark registration work of the State Administration for Industry and Commerce started from 1995. So far, the State Administration for Industry and Commerce has registered 966 types of geographical indication. The types of national geographical indication of agricultural products in Shandong, Sichuan, Heilongjiang, Shanxi, Jiangxi, Henan come out top, involving 14 major categories (fruits, vegetables, grain,

at present for protecting the specialty products in the international community (especially the United States, Germany, *etc.*). Through the application of geographical indication tradesigns, we can reasonably and fully use and preserve natural resources, cultural resources and geographical heritage, effectively protect the high-quality specialty products, and promote the development of characteristic industry. The geographical indication trademark registration work of the State Administration for Industry and Commerce started from 1995. So far, the State Administration for Industry and Commerce has registered 1004 geographical indication tradesigns in 32 provinces, cities and autonomous regions (including Chihshang rice in Taiwan Province). The number of geographical indication trademark in Zhejiang, Shandong, Fujian, Sichuan, Jiangsu and Hubei comes out top, involving 16 major categories (fruits, vegetables, grain, edible oil, tea, Chinese herbal medicine, livestock, poultry, aquatic products, handicrafts, spices, flowers, textiles, wines, beverages, tobacco).

edible oil, tea, Chinese herbal medicine, livestock, poultry, aquatic products, spices, flowers, textiles, beverages, tobacco). Now the green Chinese onion resources have 10 national geographical indication types of agricultural products: Zhangqiu green Chinese onion, Shouguang green Chinese onion, Anqiu green Chinese onion, Longyao green Chinese onion, Zhengning green Chinese onion, Renxian Gaojiabai green Chinese onion, Silangyao green Chinese onion, Hulan green Chinese onion, Jiannao green Chinese onion, Baodi green Chinese onion (Table 3).

**2 Protection of new plant variety right**

In December 1961, *International Convention for the Protection of New Varieties of Plants* (UPOV Convention) was concluded in Paris, and then International Union for the Protection of New Varieties of Plants was established based on this<sup>[11]</sup>. On April 23, 1999, China became the 39th member state of UPOV Convention, implementing the text of Convention in 1978. On March 20, 1997, the State Council promulgated *Regulations on Protection of New Varieties of Plants*<sup>[12]</sup>. Due to institutional reasons, the protection of new plant variety of China’s agriculture and forestry is carried out by the Ministry of Agriculture and the State Forestry Administration, respectively. On June 16, 1999, the Ministry of

Agriculture promulgated *Implementing Rules for Regulations on the Protection of New Varieties of Plants in the People's Republic of China* (Section for Agriculture) (revised in 2007). On August 10, 1999, the State Forestry Administration promulgated *Implementing Rules for Regulations on the Protection of New Varieties of Plants in the People's Republic of China* (Section for Forestry). Since 1999, the Ministry of Agriculture has announced in eight batches *Protection List of New Varieties of Plants in the People's Republic of China* (Section for Agriculture), and the scope of protection includes 26 genera and 54 species; the State Forestry Administration in four batches announced *Protection List of New Varieties of Plants in the People's Republic of China* (Section for Forestry), and the scope of protection includes 64 genera and 14

species.

Currently, the protection of new varieties of plants of green Chinese onion in China is managed by the Ministry of Agriculture. On May 13, 2005, the Ministry of Agriculture announced the sixth batch of protection scope of new varieties of plants, which contains the species name of green Chinese onion (*Allium fistulosum* L.). From 1999 to 2011, the Plant Variety Protection Office of the Ministry of Agriculture accepted 9016 applications of new plant variety, and granted 3 713 new plant variety rights. However, only one new plant variety application of green Chinese onion (*Allium fistulosum* L.) was accepted and reported, and the new plant variety right of green Chinese onion was not authorized.

**Table 3 National agricultural product geographical indication of green Chinese onion**

Product	Applicant	The scope of protection
Zhangqiu green Chinese onion	Zhangqiu Green Onion Research Institute	A total of 264 administrative villages in 6 townships (Xiuhui, Zaoyuan, Longshan, Ningjiabu, Diaozhen, Mingshui), Shangqiu City, Shandong Province
Shouguang green Chinese onion	Shouguang Vegetable Industry Association	Tianliu Town and the northern Shangkou Town, Shouguang City, Shandong Province
Anqiu green Chinese onion	Anqiu Melon and Vegetable Association	876 villages in Xin'an Street Office, Xing'an Street Office, Linghe Town, Jingyi Town, Jinjiazi Town, Huiqu Town, Shibuzi Town and Wushan Town in Anqiu City, Shandong Province
Longyao green Chinese onion	Longguo Green Onion Co-operative	182 villages in Longyao Town, Shankou Town, Gucheng Town, Dongliang Township, Weizhuang Town, Yincun Town, Shuangpai Township, Zhangzhuang Township, Niuqiao Township, Beilou Township, Qianhuying Township in Longyao County, Hebei Province
Zhengning green Chinese onion	Zhengning Vegetable Production Work Station	58 administrative villages in Gonghe Town, Zhoujia Township, Yulinzi Town, Yongzheng Township, Shanhe Town, Xipo Township, Yonghe Town, Qitoutou Township, Wuqingyuan Township and Sanjia Township in Zhengning County, Gansu Province
Renxian Gaojiaobai green Chinese onion	Yicai Vegetable Cultivation Cooperative	Dongxiannan Village, Xixiannan Village, Nanxi Village, Beixi Village, Yutun Village, Sizhuang Village, Xinliuzhai Village in Rencheng Town; Qicun Village, Nanliuzhai Village, Xinyi Village, Lucun Village in Xigucheng Township; Datun Village, Xiaotun Village, Jiacun Village, Mafang Village, Qian'an Village, Houan Village, Wenzhuang Village, Wuzhuang Village, Zhengzhuang Village in Datun Township; Yonger Village, Yongwu Village, Lingnan Village, Fengcun Village in Yongfuzhuang Township, Renxian County, Hebei Province
Silangyao green Chinese onion	Silangyao Green Onion Co-operative in Dayu Town	The southwestern mountainous areas with altitude of over 400 meters in Jiuyan City, Henan Province, including 15 administrative villages
Hulan green Chinese onion	Lanhe Street Office Community Service Center, Hulan District, Harbin City	The south of Heilongjiang Province, north of Songhua River, lower reaches of Hulan River, south to Songhua River, east to Bayan, west to Zhaodong and Lanxi, north to Suihua
Jiannao green Chinese onion	Guizhi Agricultural Cooperative in Lucheng City	50 villages in Heshi Township, Dianshang Town, Zhaidian Town and Huangniuti Township in Lucheng City, Shanxi Province
Baodi green Chinese onion	Baodi Vegetable Production and Marketing Association in Tianjin City	Lintingkou Town, Wangbuzhuang Town, Dazhongzhuang Town, Fangjiazhuang Town, Dakoutun Town, Dabaizhuang Town, Bakoucheng Town, Majiadian Town, Huogezhuang Town, Xinkaikou Town, Datangzhuang Town, Gaojiazhuang Town, Koudong Town, Niudaokou Town, Shigezhuang Town, Haogezhuang Town, Zhouliangzhuang Town, Xin'an Town, Niujiapai Township, Erwangzhuang Township, Huangzhuang Township, Haibin Street, Baoping Street and Yuhua Street in Baodi District, Tianjin City

### 3 Recommendations for improving the protection of geographical indication right and new variety right of green Chinese onion

#### 3.1 Promoting the implementation of geographical indication product protection based on the national quality system

Shandong Province, the province with the richest green Chinese onion resources in China, has registered national geographical indication trademark of green Chinese onion, and registered the national agricultural product geographical indication of green Chinese

onion, but has not yet implemented the geographical indication product protection of the State Administration of Quality Supervision, Inspection and Quarantine. Geographical indication protection is very suitable for the intellectual property protection of geographical indication of green Chinese onion, so it is necessary to promote the implementation as soon as possible.

**3.2 Establishing the national quality standards of geographical indication green Chinese onion, in order to improve quality standardization** Since 2005, according to *Regulations on the Protection of Geographical Indication Products* and GB 17924 –

1999 *General Requirements for Geographical Origin Products* (or later GBT 17924 – 2008 *General Requirements for Geographical Indication Products*), the State Administration of Quality Supervision, Inspection and Quarantine, and National Standardization Management Committee jointly have issued 144 national quality standards of geographical indication products. Geographical indication specialties (geographical indication products, geographical indication trade signs, and geographical indication of agricultural products) all have national identified geographical indication intellectual property. In order to protect and use this intangible intellectual property of geographical indication, it is necessary to have strict quality and technical requirements on the geographical indication specialties, and develop national quality standards.

However, the geographical indication of green Chinese onion only has local quality standards, and the corresponding national quality standards have not yet been established. Therefore, to improve the intellectual property protection of geographical indication of green Chinese onion and especially use the technical specification and quality control functions, there is an urgent need to develop a variety of national quality standards for the geographical indication of green Chinese onion.

**3.3 Encouraging more enterprises within the scope of protection of geographical indication to use special signs of geographical indication** The use of special signs of geographical indication is an important step for the intellectual property protection of geographical indication, and also the key to brand effect and economic efficiency of protection of geographical indication product. China currently has three special signs of geographical indication: the special signs of geographical indication of the State General Administration of Quality Supervision, Inspection and Quarantine; the special signs of geographical indication of the State Administration for Industry and Commerce; the geographical indication of agricultural products of the Ministry of Agriculture. Among them, the use of special signs of geographical indication of the State General Administration of Quality Supervision, Inspection and Quarantine is used best. So far, the State General Administration of Quality Supervision, Inspection and Quarantine has approved 4055 companies or industry associations to use 443 kinds of "special mark of geographical indication products". The special mark of geographical indication of some specialties is used well, for example, now more than 218 enterprises can legally use the special mark of geographical indication product of Wuyiyan tea.

However, as shown in Table 1, the special sign for national geographical indication product of green Chinese onion is not used well. There is no business allowed to use some special signs for geographical indication products like Guangwu green Chinese onion, Huaxian green Chinese onion, and Yanling green Chinese onion. In order to better cultivate brand and make full use of the geographical indication brand effect, it is necessary to encourage and support more enterprises within the protection scope of geographical indication of green Chinese onion, to use their respective special sign of geographical indication.

**3.4 Unifying the green Chinese onion brands within the scope of protection of geographical indication** Geographical indication and origin naming system is to establish the regional specialty brands in essence. Therefore, based on the strict specifications, quality control and the use of special signs of geographical indication, it is necessary to make full use of national geographical indication products, national geographical indication trademarks, national geographical indication of agricultural products and other traditional cultural heritages of agricultural and industrial brands, and unify the green Chinese onion brands within the scope of protection of geographical indication.

**3.5 Achieving the dual protection of geographical indication right of green Chinese onion and new variety right** The ultimate goal of protecting the new plant variety right is to encourage more organizations and individuals to invest in the plant variety field, thus contributing to breeding and promoting more new plant varieties, promoting China's seed project construction, and enhancing the continuous development of agriculture and forestry production.

At present, China has declared only one new plant variety of green Chinese onion, and there is no authorized new plant variety right of green Chinese onion. Therefore, it is necessary to strengthen the breeding work of geographical indication green Chinese onion, and declare the new variety right of geographical indication green Chinese onion to the Office for the Protection of New Plant Variety, the Ministry of Agriculture, in order to protect its intellectual property, and achieve the dual protection of geographical indication right and new variety right of green Chinese onion.

**3.6 Developing the tourism resources on geographical indication green Chinese onion, to develop tourism agriculture** In recent years, all regions have developed the tourism agriculture based on their own resource conditions and advantages<sup>[13]</sup>. The geographical indication green Chinese onion is produced in specific regions, whose quality, reputation and other characteristics hinge on the natural and human factors in the origin. Therefore, there is a need to strengthen the development of tourism resources on geographical indication green Chinese onion, to develop tourism agriculture.

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portion of biochar. The decrease of EC can alleviate salt damage of soil to the plant growth, which may be one of more important instruction the pH for saline-alkali soil level. Biochar is weakly alkaline, it will make the saline-alkali soil salinization degree aggravate, but it contained a certain amount of mineral element, is benefit to wheat growth. In this experiment, for the 10:0, 4:6, 6:4 three ratio of soil (severe saline-alkali soil), biochar not only promoted the wheat germination, but also promoted the growth of wheat seedlings in early growth period. The higher the biochar's concentration, the better the growth of wheat seedlings. Thus, for severe salinization soil the positive effect of biochar was obvious. In this experiment, the higher the biochar concentration, the better improvement in soil samples; for mild salinization soil, the positive effect of biochar was not significant. Biochar had a certain degree of adsorption, and contains a certain amount of mineral element, can increase the content of mineral elements of soil, which may promote the nutrient for the germination of seeds and the growth of plant. Especially for the serious saline-alkali soil, the effect of biochar was obvious in higher concentration of biochar. This experiment only tests the effect of biochar on the germination of wheat seeds and the growth of seedlings. There are more questions need to be discuss further in the future experiment. Such as long period pot culture or field culture to detect the detail and the mechanism of the biochar's effect on the different growth stage of crops to give more guidance for agricultural use of saline-alkali soil, especially serious salinity soil.

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