

IPR issues related to medicinal and aromatic plants (Herbs & their allied products)

T.C. James

Prof. T C James, President, NIPO; Visiting Fellow, RIS
Member, SRI; Member, AC, Shekhawati University,
C-203, Kairali Apartments

Plot No. 10, Sector 3, Dwarka, New Delhi 110 078

Website: <http://jamesthanickan.tripod.com>.

Tel: 91-11-45 78 94 41, 91-11-25 08 99 49, Mobile: (91) 98.18.10.72.58

Abstract

Since the founding of the World Trade Organisation (WTO) on 1st January, 1995, issues relating to intellectual property rights (IPRs) have come to the fore in international trade and commerce and also in domestic economy discussions and policy making. This has affected even areas such as traditional knowledge, traditional medicine and also biological resources of a country including medicinal and aromatic plants. In this paper some of the IPR issues related to medicinal plants and their allied products particularly in traditional and modern medicines and cosmetics based on plants are examined.

Keywords: *Traditional Knowledge, IPR, WTO, Patent, TKDL.*

Intellectual Property Rights

The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) formed Annex 1C of the Agreement establishing the WTO. It is one of the agreements that formed the set of treaties finalised at the end of Uruguay Round (1986-1994) of GATT (General Agreement on Tariffs and Trade) negotiations. This Agreement consolidated and reiterated the provisions of various existing treaties on intellectual property rights such as the Paris Convention for the Protection of Industrial Property (1883-1967), the Berne Convention for the Protection of Literary and Artistic Works (1886-1971), the Rome Convention (1961), etc. It also added certain new commitments. The major features of the agreement are that it provides for minimum obligations but countries are free to extend more protection than what is obligatory. It also requires that non-residents are treated on par with residents in the matter of IPR protection and also that if a country extends any

special favours to one country the same will have to be provided to other member states also. The most distinctive feature of the treaty is that it provides for a dispute settlement mechanism between countries in the matter of non-fulfilment of the obligations by any country.

The TRIPS Agreement included the following intellectual property rights:

- Copyright and Related Rights
- Patents
- Trade Marks
- Industrial Designs
- Geographical Indications
- Layout-Designs (Topographies) of Integrated Circuits
- Protection of Undisclosed Information
- Control of Anti-competitive Practices in Contractual Licences

Copyright and Related Rights are exclusive rights of reproduction and distribution including

communication to the public extended to original literary, dramatic, musical and artistic works and also performances and broadcasts. The rights are for the life time of the author plus usually 50-70 years depending on national legislations. These rights are available without any formality. Patents are rights over new inventions in all fields of technology, both product and process, which satisfy the criteria of novelty, inventiveness and industrial application. The rights are valid for 20 years and also in the country in which patent is granted. Trademarks give protection to distinctive marks on goods and services used in trade and commerce. Common trademark of a group is known as collective mark and that which certifies a given quality of the goods of service is known as certification mark. Trademark protection can be availed of without any time limit. New and original artistic designs used on industrial products are protected through design rights. The term of rights is ten years only but it can be extended once for another term of five years. Geographical indications (GIs) are for goods which have certain qualities or reputation which are owing to their place of origin such as Basmati Rice or Darjeeling Tea. The GI rights are also without any time limit. However, unless protection is granted in the country of origin, other countries are not required to extend the GI protection to a good. There are rights on new integrated circuits of layout designs, limited to a 10 year period. The TRIPS agreement also enjoins on member states to protect undisclosed information which are of value in trade and commerce. Infringement of rights entail civil remedies in all cases and in the case of copyrights, trademarks and geographical indications criminal remedies also.

Medicinal Plants and Patents

Herbs and plant parts have always been found to be a source of medicinal uses from time immemorial. In fact, most of the traditional medicine systems of the world are based on curative properties of plant

substances. There is hardly a plant which does not have any medicinal property. Hence, the number of medicinal plants varies between experts. As per one estimate there are over 15,000 medicinal plants in India of which 1500 find specific mention in the Indian Systems of Medicine such as Ayurveda. According to the same author over 500 of them are used in the preparation of the drugs. According to another author, over 7,000 plants are known to be used for medicinal and aromatic purposes in India. The medicinal properties documented in the texts of these systems as well as the traditional knowledge associated with the plants have been a valuable source for research and development (R&D) of new medicines in the allopathic system of medicine. This system is heavily dependent on patent protection for commercial production of the drugs. Consequently, most of the new drugs or new qualities of an existing drug in this system have been patented. That also includes knowledge in the traditional systems of medicine but previously unknown to the modern medicine practitioners or not available in their databases. Many authors have documented them. In the book, *Biopiracy: Imitations not Innovations*, the Gene Campaign details 31 cases. Two of these cases are given below as illustrations:

The Turmeric Case

One of the most publicised cases is that of patenting of wound healing properties of turmeric (*Curcuma longa*) by two scientists of Indian origin in the United States (US) in the year 1994. Although extant knowledge is not patentable since the essential criterion of novelty will disqualify the same as an invention, where the Patent Office which grants the patent fails to find out the same, the application gets granted. This is what happened in this instance. The case generated much discussion and debate in India since it was a knowledge available in the ancient Ayurvedic texts. The Council of Scientific and Industrial Research (CSIR) challenged the grant of the patent before

the US Patent and Trademark Office (USPTO) and proved that it was an existing knowledge. Thereupon the USPTO revoked the patent.

Neem Patent

Another medicinal plant whose properties were well known in India but not so in US and Europe and consequently many patents were granted by the Patent Offices in those countries based on the properties of Neem (*Azadirachta indica*). In 1994, the European Patent Office (EPO) granted a patent to the US corporation W.R. Grace and US Department of Agriculture for a “method for controlling fungi on plants by the aid of a hydrophobic extracted neem oil.” This was challenged by several non-government organisations with the result that the patent was revoked in 2000.

TKDL

However, consequent on India developing a database on Indian Systems of Medicine, in the form of Traditional Knowledge Digital Library (TKDL), the search quality of Patent Offices have improved and the number of grant of such patents has come down. A list of 108 cases of rejection/withdrawal or amendment of patent applications based on TKDL, as of 31 August, 2012 has been presented in the book *The Living Tree*. But still many are applying for such patents which is evident from the fact that the TKDL website now (20 April, 2015) presents a list of 201 cases of applications rejected or withdrawn being traditional knowledge. The library consists of 2,92,662 traditional medicine formulations in Ayurveda, Unani, Siddha and Yoga as of 20 April, 2015. Granting of wrong patents based on biological resources is termed as ‘biopiracy’ by many authors. It amounts to misappropriation of a community’s/ country’s property without due permission. In order to prevent such wrong patents, Indian Patents Act, 1970 has specific provisions. As per Section 3, the following are not patentable:

“Plants and animals in whole or any part thereof other than microorganisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals.”

“An invention which in effect is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components.”

These provisions ensure that India does not grant patents on extant medicinal plants as well as traditional knowledge associated with them. The above grounds are also basis for opposing the patent application before grant as well as after granting. In fact, in the grounds of opposition, it is very clearly stated that, “knowledge, oral or otherwise, available within any local or indigenous community in India or elsewhere” (emphasis added) is ground enough for opposing the patent. The grounds for opposition also have specific provision as to disclosure of the source or geographical origin of biological material used for the invention. Any non-disclosure or wrongful disclosure of such source is enough to reject the patent application or for revocation of the granted patent.

The Indian Patent Office, however, granted a patent for a composition consisting of *jamun* and *lavangpatti* for “synergistic Ayurvedic/functional food bioactive composition” on an application filed in 2007. The claimed use was for the treatment of diabetes. It was revoked in 2012 as per Section 66 of the Patents Act which provision empowers the Central Government to revoke any patent on the ground that the patent is “generally prejudicial to the public”. The patent in question was for an invention which was essentially traditional knowledge associated with medicinal plants.

To complement these statutory provisions, the form for application for grant of patent requires a declaration by the applicant that where the invention uses biological material from India, the necessary

permission from the competent authority would be submitted by him before the grant of the patent. The competent authority for the grant of such permission is the National Biodiversity Authority (NBA) established under the Biological Diversity Act (BDA), 2002. This Act was enacted by India in fulfilment of its obligations under the UN Convention on Biological Diversity (CBD), 1992, *inter alia*, “for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge.” ‘Biological Resources’, as per the Act, means “plants, animals and micro-organisms or parts thereof, their genetic material and by-products (excluding value added products) with actual or potential use or value, but does not include human genetic material”. The Act also empowers the National Biodiversity Authority to “impose benefit sharing fee or royalty or both or impose conditions including the sharing of financial benefits arising out of the commercial exploitation of such rights.”

Exploitation of medicinal plants including attached traditional knowledge such as in traditional medicines for purposes of obtaining patent is, thus, regulated and requires benefit sharing in the form of payment of royalty or fee or both to the conservers of those plants, usually a community.

The Kani Case

This is one of earliest documented benefit sharing cases in intellectual property rights based on traditional medicinal knowledge of plants. The Tropical Botanical Garden and Research Institute (TBGRI), Thiruvananthapuram obtained knowledge about the medicinal properties of the plant locally known as *Arogyapacha* (*Trichopus zeylanicus*) from the Kani tribe in 1987, before the enactment of the Biological Diversity Act, 2002 and the amendments to the Patents Act in 2005 that made specific provisions about traditional knowledge and biological resources. The Kanis are a small tribal community of about

25,000 people on the Agastiar hills in South Kerala. The Institute developed the medicine *Jeevani* (a poly herbal product) based on that knowledge and obtained a process patent for the same. (Patents were not available in India for pharmaceutical products from 1972 to 2005). The Institute commercialised the product through the Arya Vaidya Pharmacy, Coimbatore. From the royalty received by the Institute, 50 per cent was shared with the Kani tribe from whom the knowledge was obtained by way of Benefit Sharing for Access. This was before it became mandatory¹⁸.

The law does not prohibit grant of patents for medicines based on medicinal plants or their extracts, provided they are new and innovative. This was the case with an Ayurvedic venom tablet ‘Pinak’ developed by Dr. Geeta Pandurang Pawar comprising four medicinal plants. The patentee had paid royalty to the National Biodiversity Board for the same. Another Indian patent granted was for a herbal formulation of *Tejan*, *Bhootkeshi* and Nilnirgundi as a brochlodilator (Indian Patent No. 212041 dated 11 November, 2007). The patentee was directed to pay royalty at the rate of 5 % of the net sales¹⁹.

A search of the Indian patent database shows an increasing number of patent applications in the field of Indian Systems of Medicine which are mostly based on plants. Table 1 presents the current status.

Table 1²⁰: Patent Applications in Indian Systems of Medicine

System	Number of Applications published	Number of patents granted
Ayurveda	185	36
Siddha	07	07
Unani	17	03

However, in a reply to a question, the Minister of State in the Ministry of Commerce and Industry stated in the Lok Sabha on 12 August, 2013 that as on 31st March, 2013, 86 applications were filed

by foreign entities and 523 applications were filed by Indian entities for grant of patents for products, formulation, compositions & processes in the field related to traditional Ayurvedic medicine, medicinal plants and herbal based formulations. Of these, as on that date, 26 patents have been granted to foreign

entities and 93 patents to Indian entities.²⁰

A sample list of thirty patents on Ayurvedic medicines/Herbal extracts is presented in Table 2.

Table 2: Patents on Ayurvedic Medicines/Herbal Extracts

Sl. No.	Patent No.	Title	Main herbs
1.	155/MUM/2008	Herbal extract and Ayurvedic composition for the treatment of diabetes	<i>Momordica charantia</i>
2.	1734/KOL/2007	A process for preparing an Ayurvedic medicament effective against leukaemia and carcinoma of lung and intestine	Lime, Asafoetida, and black jeera.
3.	1938/DEL/2006	A process for preparation of Ayurvedic composition for treatment of hepatic disorder	Kaghzinimbu (Lemon) [<i>Citrus medica (aurantifolia)</i>], Sarjika [<i>Salsola kali</i> Linn., <i>Fagonia cretica</i> Linn., Barilla] and Varat (Kapard) <i>Cypraea moneta</i>
4.	1623/MUM/2006	An Ayurvedic composition for oral consumption in treatment of heart diseases and hypertension	Arjuna - <i>Terminalia arjuna</i> , Ajamoda - <i>Apium graveolens</i> , Punarnava - <i>Boerhavia diffusa</i> , Rasona - <i>Allium sativum</i> , Shigru - <i>Moringa oleifera</i> , Draksha - <i>Vitis vinifera</i> , Pippali - <i>Piper longum</i> , Guduchi - <i>Tinospora cordifolia</i> , and Triphala
5.	228/CHE/2006	A process for the preparation of Ayurvedic dia tooth powder/paste	<i>Azadirachta indica</i> , menthol, thymol, camphor and gall nut
6.	3207/DEL/2005	An Ayurvedic composition for joining fractured bone & as anti-inflammatory and process for preparation thereof	<i>Cissus quadrangularis</i> , <i>Pterocarpus marsupium</i> heartwood, Buffalo/Cow Milk and <i>Chenopodium murale</i> (kurund)
7.	726//CHE/2005	An Ayurvedic medicine for curing viral hepatitis and the like diseases.	<i>Luffa aegyptica</i> , <i>Luffa cylindrica</i> or <i>Luffa acutangula</i> or <i>Luffa operculata</i> and seeds of <i>Cuminum cyminum</i>
8.	313/CHE/2005	A unique combination of Ayurvedic compounds for correcting a rare form of mullerian dysgenesis	<i>Asoka</i> , <i>Asana</i> and <i>Bilwa</i> , <i>Shorea robusta</i> Gaertn, <i>Pinus roxburghii</i> Sargent, <i>Cyperus rotundus</i> Linn., <i>Sida rhombifolia</i> , <i>Cyperus rotundus</i> Linn., <i>Gmelina asiatica</i> Linn., <i>Nardostachys jatamansi</i> DC, <i>Randia dumetorum</i> Linn., <i>Kaemferia galanga</i> Linn., <i>Teramnus labialis</i> Spreng., <i>Phaseolus trilobus</i> Ait., <i>Inula racemosa</i> Hook F, <i>Cinnamomum zeylanicum</i> , <i>Syzygium aromaticum</i> Merr., <i>Parmelia</i> (Sange jaranath), <i>Crocus sativus</i> Linn., <i>Cinnamomum camphora</i> T. Nees & Ebem

9.	146/MUM/2005	An Ayurvedic herbal hair oil composition and preparation thereof	Jatamasi (<i>Nardostachys jatamansi</i> (D.Don) DC.), Amla Bramhi (<i>Gratiola</i>), Bhrungaraj (<i>Eclipta alba</i>) thistles, Nagamothra (<i>Cyperus rotundus</i>), Kapurkachari (<i>Hedychium spicatum</i>) and Kavath (<i>Feronia elephantum</i>)
10.	31/MUM/2005	An Ayurvedic herbal composition for treatment of Cancer / skin diseases and process of making thereof	<i>Murraya paniculata</i> (Bhutkati), <i>Latana camara</i> (ghanera or Tantani), <i>Terminalia</i> (Kinjal), <i>Toalia asiatica</i> (Jangli-Mirch) <i>chawat</i> or <i>dhundari</i> and teak wood
11.	2352/DEL/2004	An Ayurvedic composition useful for the treatment of migraine.	<i>Psidium guava</i> and <i>Eucalyptus Camel dulensis</i>
12.	1145/MUM/2004	A process for preparation of Ayurvedic anti-snake venom capable of administering orally or intravenous	<i>Jasminum sambac</i> , <i>Erythina indica</i> , <i>Eugenia jambolana</i> and <i>Mangifera indica</i>
13.	611/MUM/2004	A process to prepare a novel Ayurvedic composition and the composition resulting there from.	<i>Terminalia arjuna</i> bark, <i>Hemidesmus indicus</i> root, <i>Mangifera indica</i> bark, <i>Moringa oelifera</i> bark, <i>Murraya koenigii</i> leaf, <i>Piper longum</i> fruit, <i>Boerhavia diffusa</i> root, <i>Achyranthes aspera</i> root, <i>Rauwolfia serpentina</i> root, coconut oil, sunflower oil, cashewnut oil, groundnut oil, linseed oil (refined) and sesame oil
14.	553/KOL/2003	A process for preparing nutrient fortified Ayurvedic sweets like sandesh and rosogolla containing at least one herb.	Tulsi (<i>Osimum sanctum</i>) leaves Pudina (<i>Mentha aervensis</i>) leaves, Coriander (<i>Coriandrum sativum</i>) leaves Tender mago (<i>Mangifera indica</i>) leaves, Stone apple (<i>Bael - Aegle marmelos</i>) leaves, Spinach (<i>Spinacia oleracea</i>), Carrot (<i>Daucus carota</i>) Beet root, Cucumber, Kulekhara (<i>Asteracantha longifolia</i>), Shushni (<i>Marselia quadrifolia</i>) Karipata, Ashawagandha (<i>Withania somnifera</i>), Guduchi (<i>Tinospora cordifolia</i>), Amla (<i>Embica officinalis</i>), Shilajeet (Black bitumen or mineral pitch), Suvam bhasm (incinerated gold), Mandookparni (<i>Bacopa monnieri</i>) Mulethi (<i>Glycyrhiza glabra</i>), Shankkapushpi (<i>Convolvulus alsinoides</i>), Vijaysara (<i>Pterocaspus marsupium</i>), Katuka (<i>Picroshhiza kurco</i>), Vidang (<i>Abies webiana</i>), Bakuchi (<i>Psoralia corylifolia</i>), Bhallatak (<i>Semecarpurs anacardium</i>) Brahmi (<i>Centella asiatica</i>), Arjun bark (<i>Terminalia arjuna</i>), Ashok bark (<i>Saraca indica</i>), Bael leaf (<i>Aegle marmelos</i>), Clove fruit (<i>Myrtus caryophyllus</i>), Dalchini bark (<i>Cinnamomum zeylanicum</i>), Elaichi fruit (<i>Elettaria cardamomum</i>), Ginger rhizome (<i>Zingber officinale</i>), Grape seeds (<i>Citrus paradisi</i>), Gorgon nuts, Walnuts, Almonds, Cashew nuts, Ground nuts, Hing (<i>Ferula asafoetida</i>), Orange peel, Jatamanshi (<i>Nardostchyas jatamansi</i>) - Extracts from skin of Lemon & Grape fruit, Jayphal fruit (<i>Myristica fragrans</i>), Liquorice (<i>Glycyrhiza glabra</i>), Cucumber seeds, Tea leaves Spirulina, Dates, Lemon grass, mango, papaya, lichi, pineapple, guava, banana, apple, fig, coconut milk cream, roseberry, etc.

15.	1048/MUM/2003	Ayurvedic immuno modulator composition for treatment of Acquired Immuno Deficiency Syndrome	Guduchi or Giloe (<i>Tinospora cordifolia</i>), Panash or Kathal (Jack fruit), Tulsi or Krishna Tulsi (Holy Basil), Kuda or Kutaja (Kurchi) Bhui Amla or Bahu Patra (Gooseberry), <i>Gingko biloba</i> Shilajeet or Silaras (Asphaltam), Karavella or Karela (Bitter gourd)
16.	1049/MUM/2003	Ayurvedic antiretroviral composition for treatment of Acquired Immuno Deficiency Syndrome	Guduchi (<i>Tinospora cordifolia</i>), Panash (<i>Artrocarpus integrifolia</i>), Tulsi (<i>Ocimum sanctum</i>), Kuda (<i>Holarrhena antidyscentrica</i>) and Bhumi Amla (<i>Phyllanthus niruri</i>)
17.	717/DEL/2003	A process of preparing said synergistic herbal Ayurvedic ointment for the treatment of analgesic, rheumatoid arthritis, backache, spondilitis, sprains, joint pains, headache, cold, inflammations and muscular pain	<i>Cinnamom camphora</i> , <i>Mentha arvensis</i> , <i>Commiphora mukul</i> (Gulggulu), <i>Syzygium aromaticum</i> (Eucalyptus) and <i>Gultheria fragrantissima</i>
18.	459/MUM/2003	Process for preparation of skin care composition by combining micro-nutrients with Ayurvedic substances	Haridra, Raktachandana, Manjistha, Kumari, Almond Oil and Coconut Oil
19.	461/MUM/2003	Process for preparation of skin care composition by combining micro-nutrients with Ayurvedic substances	Haridra, Raktachandana, Manjistha, Kumari, Almond Oil and Coconut Oil
20.	460/MUM/2003	Process for preparation of skin care composition	Haridra, Raktachandana, Manjistha, Kumari, Almond Oil and Coconut Oil
21.	462/MUM/2003	Process for preparation of skin care composition by combining micro-nutrients with Ayurvedic substances	Haridra, Raktachandana, Manjistha, Kumari, Almond Oil and Coconut Oil
22.	457/MUM/2003	Process for preparation of skin care composition by combining. Micro-nutrients with Ayurvedic substances	Haridra, Raktachandana, Manjistha, Kumari, Almond Oil and Coconut Oil
23.	458/MUM/2003	Process for preparation of skin care composition by combining. Micro-nutrients with Ayurvedic substances	Haridra, Raktachandana, Manjistha, Kumari, Almond Oil and Coconut Oil
24.	22/MUM/2003	A process of preparing an Ayurvedic composition for treatment of cold, pain, cough, etc.	Poppy, Cowith, <i>Hycosxix orsiodiassis</i> , <i>Salvia plebia</i> , Nutmeg, Mace, Clove and Cardamom

25.	731/DEL/2002	A process for preparation of an Ayurvedic medicinal composition which is useful in the treatment of uterus tumour	<i>Vernonia cinerea</i> , <i>Berberis aristata</i> , <i>Prunus cerasoides</i> , <i>Curcuma longa</i> , <i>Asparagus racemosus</i> , <i>Withania somnifera</i> , <i>Acacia catechu</i> , <i>Panicum miliare</i> , <i>Pterocarpus santalinus</i> , <i>Rubia cordifolia</i> , <i>Aglaiia roxburghiana</i> , Dried grape fruit (Draksha), <i>Glycyrrhiza glabra</i> , <i>Desmodium gangeticum</i> , <i>Apium graveolens</i> , <i>Nelumbo nucifera</i> (root), <i>Momordica cochinchinensis</i> , <i>Litsea polyantha</i> , <i>Solanum verbascifolium</i> , <i>Sphaeranthus indicus</i> , Jivaka, Rishabaka, Ksheerakakoli, Triphala, Mahameda, Mishri, Milk extract and ghee
26.	56/BOM/1998	A process for the preparation of an immuno modulator from the Ayurvedic medicinal plant, gulvel (<i>Tinospora sp.</i>)	Gulvel (<i>Tinospora sp.</i>)
27.	667/BOM/1997	Oral herbal Ayurvedic composition for treatment of Psoriasis	<i>Matricaria chamomilla</i> and <i>Piper nigrum</i> (Only seeds)
28.	668/BOM/1997	Herbal Ayurvedic composition for treatment of Psoriasis	<i>Psoralea corylifolia</i> (only Seeds), <i>Santalum album</i> Linn, <i>Cassia occidentalis</i> (roots), <i>Matricaria chamomilla</i> (whole plant)
29.	423/BOM/1997	An improved process for manufacture of the extract obtained from Ayurvedic medicinal plant, guddchi	Guduchi (<i>Tinospora cordifolia</i>)
30.	1471/DEL/1996	An Ayurvedic eye drop composition for treatment of various eye diseases particularly in improving eye-sight by the flattening of the cornea and interior surface of the lens	Apamarg (<i>Achyranthus aspera</i>), Punarnava (<i>Boerhavia diffusa</i>), Plash (<i>Butea monosperma</i>), Fitkari (Alum), Tuth (Copper Sulphate), Peppermint (<i>Mentha piperata</i>), Taknamal (Borax), Yashad (Zinc Sulphate)

Apart from Indian systems of medicine, Allopathic pharmaceuticals are also using many Indian plants for making new drugs and/or cosmetics. The word 'herbal' appears in 1241 patent applications in the Indian Patent Office database. Similarly, the word 'herb' appears in 362 patent documents. All these are mainly herbal/plant extracts and herbal compositions. A list of patents in which selected plants are involved is presented in the following Table 3:

Table 3²¹: Patents on Thirty Medicinal Plants in India

Plant/Herb	Number of patent applications published	Number of Patents granted
Lemon	65	16
Neem	173	47

Aloe vera	185	43
<i>Terminalia bellirica</i>	123	25
Turmeric	103	16
Ginger	86	19
Pepper	80	17
Garlic	59	13
Sandal/Chandan	50	29
Arjuna	47	16
Amla	47	12
Almond	23	12
Poppy	18	05
Camphora	14	04
Senna	06	03
Jasmine/Jasminum	25	07
Nutmeg/Jati	26	03
Vetiver/Khus	09	04

Rose geranium	94	19
Patchouli	07	02
Chamomilla	06	02
Basil/Tulsi	60	09
Lavender	10	01
Rosemary	15	01
Mint	57	16
Mucuna/Kawanch	28	06
Jamun	10	01
<i>Celastrus</i>	11	02
Babchi/ psoralea	20	01
Musli	19	04

The BDA also ensures benefit sharing in the case of access and commercial exploitation of biological resources, apart from their commercialisation as IPRs. There are many instances of medicinal plants accessed for commercial purposes. Some of these cases involved Neem leaves, *kalmegh* (*Andrographis paniculata*), *Satavari* (*Asparagus racemosus*), *Arni*, *Nagarmoth*, *Agnimanth*, *Arjuna*, *Kutaj*, *Giloy*, *Amla*, *Beheda*, *Guggul* and *Shankpushpi*.²⁴

Medicinal Plants and Plant Varieties Protection

Another IPR law which has relevance for medicinal plant is the Protection of Plant Varieties and Farmers' Rights Act, 2001 (PPV&FRA). The TRIPS Agreement requires a member state to "provide for the protection of plant varieties either by patent or by an effective *sui generis* system or by any combination thereof."²⁵ In fact already the International Convention for the Protection of New Plant Varieties (UPOV, 1961-1991) requires such protection. India opted for protection other than through patents. It provided for both new varieties developed by plant breeders as well as 'extant' varieties developed by farmers using traditional methods. Like the BDA, the PPV&FRA also provided for benefit sharing. The concept of associated traditional knowledge is extended to the registered varieties.

Protection of Geographical Indications

Geographical Indication means an indication which identifies agricultural or natural or manufactured goods as originating or manufactured in a particular territory "where a given quality, reputation or other characteristic of such goods is essentially attributable to its geographical origin".²⁶ Medicinal plants originating from particular regions many a time have distinct medicinal properties and, therefore, are eligible for registration and protection under the Geographical Indications of Goods (Registration and Protection) Act, 1999. The authorised users of a registered Geographical Indication (GI) only are eligible for the rights under the Act which are the rights to use the indication and to obtain relief thereof in case of infringement. An application for registration is to be made by "an association of persons or producers or any organisation or authority established by or under any law representing the interests of the producers of the concerned goods"²⁷. The registered varieties have the advantage of commanding premium pricing in the market. An example is Navara rice from Kerala which is a registered variety. It is used in Ayurveda for specific treatments like *Panchakarma* and in various treatments for arthritis²⁸. A list of medicinal/aromatic plants registered as Geographical Indications is presented in the Table 4 below:

Table 4²²: Registered Geographical Indications of Medicinal/Aromatic Plants and Allied Products

Plant/Allied Product	State	Reg.No.
Mysore <i>Agarbathi</i>	Karnataka	11
Mysore Sandalwood oil	Karnataka	23
Mysore Sandal soap	Karnataka	24
Mysore Betel leaf	Karnataka	28
Nanjanagud Banana	Karnataka	29
Mysore Jasmine	Karnataka	37
Uduppi Jasmine	Karnataka	38
Hadagalli Jasmine	Karnataka	39
Navara rice	Kerala	40
Coorg Green Cardamom	Karnataka	57

Pokkali Rice	Kerala	86
Khirsapati (Himsagar) Mango	West Bengal	95
Naga Mirchi	Nagaland	99
Devanahalli Pomelo (Chakkota)	Karnataka	113
Kamalapur Red Banana	Karnataka	115
Wayanad Jeerakasala Rice	Kerala	137
Wayanad Gandhakasala rice	Kerala	138
Byadagi Chilli	Karnataka	147
Ganjam Kewda Rooh	Odisha	171
Ganjam Kewda Flower	Odisha	172
Kalanamak Rice	Uttar Pradesh	194
Kaipad Rice	Kerala	199
Kannauj Perfume	Uttar Pradesh	203
Bangalore Rose Onion	Karnataka	217
Naga Tree Tomato	Nagaland	220
Sikkim Large Cardamom (<i>Amomum subulatum</i>)	Sikkim	222
Assam Karbi Anglong Ginger	Assam	226
Khasi Mandarin	Meghalaya	231

Applying the above labels to similar products by persons other than the authorised users is a criminal offence which will attract penalty of imprisonment up to three years and fine up to Rs. 2 lakhs. Civil remedies can also be initiated by the registered proprietors and authorised users against such infringements.

There are many more medicinal and aromatic plants and products based on them that can be protected as Geographical Indications, but requires initiatives by the cultivars and traders.

Trademarks

In the case of marketing medicinal plant products and even in selling the plants as such, trademarks can be used. These marks can be used by individual traders and also by collective groups. In order to

ensure the quality, certification marks also can be registered and applied to specific medicinal plant products. Ayurvedic firms such as Dabur, Zandu, etc use trademarks. Medicinal plant cultivars and traders can use the route of trademarks.

India Organic” is a certification trademark granted by the Spices Board on the basis of compliance with the National Standards for Organic Production.²⁹ The logo has specific colour scheme.



Organic Certification Mark

Medicinal plants by their very nature in order to maintain the quality, have to be produced organically and, therefore, could use this, if they satisfy the conditions specified.

Another certification marks is the FPO mark awarded by the Ministry of Food Processing Industries which is used for processed fruit products. It certifies that the product is manufactured in a hygienic <food-safe> environment. The Agmark is used on agricultural products to certify that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India.



FPO Mark



Agmark

These marks should not be used on goods without

the approval of the competent certifying authorities. Otherwise it may attract penalties and fines as the case of infringement of Geographical Indication rights.

Thus, many IPRs can be used for obtaining protection and for reaping benefits in the case of medicinal plants. However, these possibilities have not been explored by the Indian cultivars optimally. In many instances, more than one IPR can be exploited. Lack of knowledge and awareness could be considered the main reason for the same. While civil society groups have been active in fighting against bio-piracy, the positive route also needs to be explored. This is particularly the case with many aromatic plants such as Sandalwood, Lavender (from Kashmir valley, Himachal Pradesh and Uttarakhand), Damask rose and so on. In the case of products exported to other countries, there is an added danger, since, if certain parts or qualities of those products have been patented or even trademarked in those countries, it may cause the exporters much avoidable troubles.³⁰

Literature cited

1. President, NIPO; Visiting Fellow, Research and Information System for Developing Countries; and former Director (IPRs), Department of Industrial Policy and Promotion, Government of India.
2. World Trade Organisation in Brief, available at <https://www.wto.org> accessed on 16 April, 2015.
3. Details of the various agreements are available at the above site.
4. Mukherjee, Taran 2009. Medicinal Plants: Need for Protection. Chapter 19 in Medicinal Plants: Utilisation and Conservation (2nd revised and enlarged edition) ed: Trivedi, Pravin Chandra, ISBN: 978-81-7910-228-2, p.392.
5. Singh B P. 'Germplasm Introduction, Exchange, Collection/Evaluation and Conservation of Medicinal and Aromatic Plants -- Their Export Potential' Chapter 1 in *ibid.* P.1.
6. Sahai, Suman 2007. Biopiracy Imitations not Innovations, Gene Campaign, ISBN 81-901009-9-8, p.42-43. Sixteen more patents on various medicinal properties of turmeric granted by the USPTO have been listed in the book.
7. Pp.32-36 *ibid.* In this case also twenty patents granted by the USPTO have been listed.
8. James, T.C., Chapter 8. Traditional Medicine and Intellectual Property Policies in the book..
9. <http://www.tkdil.res.in/tkdil/langdefault/common/Abouttkdil.asp?GL=Eng>
10. Section 3(j) of the Patents Act, 1970.
11. Section 3(p) *ibid.*
12. Sections 25(1)(j) and 25(2)(j) *ibid.*
13. Section 64(1)(p) and (q) *ibid.*
14. The Patent Rules, 2003, Form 1
15. Preamble to the Biological Diversity Act, 2002.
16. Section 2(c) of the BDA.
17. Section 6(2) *ibid.*
18. Chaturvedi S 2007. Kani Case. A Report for GenBenefit, available at: www.uclan.ac.uk/gen-benefit
19. Dhar, James and Pandey 2014. Access and Benefit Sharing under the Biodiversity Act; Towards a More Effective Regime, RIS Policy Brief No. 65.
20. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=98021>
21. <http://ipindiaservices.gov.in/publicsearch/>. Accessed on 20 April, 2015
22. <http://ipindiaservices.gov.in/publicsearch/>. Accessed on 20 April, 2015
23. <http://ipindia.nic.in/girindia/>. Accessed on 20 April, 2015.
24. *Ibid.*
25. TRIPS Agreement, Article 27.3(b).
26. The Geographical Indications Goods (Registration and Protection) Act, 1999, Section 2 (1)(e).
27. Section 11(1) *ibid.*
28. <http://www.njavara.com/benefits.htm>
29. http://www.indianspices.com/html/np_organiccet.htm
30. © author 2015.