

REVIEW ARTICLE

**A BRIEF REVIEW ON THE TURMERIC PATENT CASE WITH ITS
IMPLICATIONS ON THE DOCUMENTATION ON THE DOCUMENTATION
OF TRADITIONAL KNOWLEDGE**

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Abstract: *Turmeric is widely used in India as a medicine, a food ingredient and a dye to name a few of its uses. In 1995, the United States awarded patent on turmeric to University of Mississippi medical centre for wound healing property. The claimed subject matter was the use of turmeric powder for wound healing. The Indian Council for Scientific and Industrial Research (CSIR) had objected to the patent granted. Due to extensive researches, 32 references were located in different languages namely Sanskrit, Urdu and Hindi on the traditional use of turmeric. After a legal battle the patent was revoked, stating that the claims made in the patent were obvious and anticipated, and agreeing that the use of turmeric was an old art of healing wounds. The Traditional Knowledge that belonged to India was safeguarded in Turmeric case. This paper is a brief review on the turmeric patent, the legal battle and final revocation of the patent. Implications of the legal victory in the turmeric patent case and the safeguarding of the traditional knowledge are discussed.*

Keywords: Turmeric, patent, traditional knowledge (TK), traditional medicine.

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1. INTRODUCTION

Different ethnic communities used different plants for the treatment of diseases. Folk healing throughout the world commonly used herbs as part of their tradition. The desire to capture the wisdom of traditional healing systems has led to a surge of interest in herbal medicines in the last century [1]. This was common in the 'western world' viz. in Europe and North America. There the herbal products have been incorporated into so-called 'alternative', 'complementary', 'holistic' or 'integrative' medical systems. So the

pharmacological treatment of disease with the use of herbs was common in different indigenous communities [2]. It was a part of the traditional knowledge of that community.

Traditional knowledge

The traditional knowledge (TK) is collective knowledge of the whole community. Individuals cannot claim a right over it. The TK system has been developed by the communities to conserve and utilize the biological diversity of their surroundings. J. Tarunika and J. Tamilselvi in their 2018 paper ‘Traditional Knowledge and Patent Issues in India’ defined Traditional knowledge (TK) as knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity [3].

India has a wealth of Traditional knowledge. It is said that most of this knowledge has been passed down generation after generation by word of mouth. Such traditional knowledge is so widespread that it becomes common knowledge within that particular community. Many of these TK which are known to all are learned through phenomenological experience and everyday activities [4]. In certain communities there are specific people who are entrusted with the traditional knowledge, the Keepers of oral traditions. They are often carefully trained. The training often involves how to link parts of traditional narratives to specific events and locales. The cultural coherence is ensured by regular repetition [5].

Traditional medicine

The use of herbs to alleviate common diseases is a common knowledge that everyone in the community knows which plants are used for what. Those plants are often planted in the kitchen garden and in the backyard so that in case of any emergency they can be used. Medicinal plants such as *Aloe*, *Tulsi*, *Neem*, *Turmeric* and *Ginger* cure several common ailments. These are considered as home remedies in many parts of the country. Herbs such as black pepper, cinnamon, aloe, sandalwood, ginseng are used to heal wounds, sores and boils. Basil, Fennel, Chives, Cilantro, Mint, Thyme, Rosemary, Sage are some important medicinal herbs and can be planted in kitchen garden. These herbs are easy to grow, look good, taste and smell amazing. Turmeric powder is widely used in India as a medicine, a food ingredient and a dye to name a few of its uses.

Turmeric as a medicinal plant

Turmeric (*Curcuma longa* L.) is a plant of the Zingiberaceae family which yields saffron coloured rhizomes that have various uses. The use of turmeric was noted in the Vedic culture about 4000 years ago where it was used as a culinary spice and had some religious significance. Today, turmeric is cultivated widely in the tropical region and has different regional names, for example in North India, turmeric is commonly called “haldi,” whereas it is called “manjal” in the South. The name turmeric has been derived from the Latin word ‘terra merita’ (which literally means meritorious earth), since the colour of ground turmeric resembles a mineral pigment. Turmeric is used as a common condiment in most Indian households. Turmeric has a warm, bitter taste which is used as a flavouring and colouring agent in curry powders, mustards, butters, and cheese etc. Apart from the use of turmeric in cooking it has several medicinal uses.

Traditional uses of turmeric

1. In the ancient Indian medical system, Ayurveda, a poultice of turmeric paste is used to treat common eye infections, and to dress wounds, treat bites, burns, acne and various skin diseases [6].
2. It can be used to treat pain and inflammation. Due to the presence of curcumin and other chemicals is used to cure swelling.
3. It is an excellent cure for wounds and injuries
4. It is commonly used to treat osteoarthritis.

The Turmeric Patent

Around the mid 1990s this plant became the subject of a huge patent dispute. In 1995, the United States awarded patent on turmeric to University of Mississippi medical centre for wound healing property. The claimed subject matter was the use of "turmeric powder and its administration", both oral as well as topical, for wound healing. The US patent no 5,401,504 on turmeric was awarded to the University of Mississippi Medical Centre in 1995. It was specially awarded for the 'use of turmeric in wound healing'.

Claims covered in the Turmeric Patent

In 1995, the USPTO (United States Patent and Trademark Office) granted a US patent number 5,401,504 to Dr Suman K Das and Harihar Kohli, two Indian American scientists at the University of Mississippi for "the use of turmeric in wound healing." Their six patent claims covered the oral and topical use of turmeric powder to heal surgical wounds and ulcers.

According to the United States Patent no 5,401,504 Das *et al*, the inventors Assignee of the University of Mississippi Medical Centre filed a patent on 28th Dec 1993, these six claims are:-

The quoted claims are as follows:

- *A method of promoting healing of a wound in a patient, which consists essentially of administering a wound healing agent consisting of an effective amount of turmeric powder to said patient.
- *The method according to the first claim, wherein said turmeric is orally administered to said patient.
- *The method according to the first claim, wherein said turmeric is topically administered to said patient.
- *The method according to the first claim, wherein said turmeric is both orally and topically administered to said patient.
- *The method according to the first claim, wherein said wound is a surgical wound.
- *The method according to the first claim, wherein said wound is a body ulcer.

The inventors in their claims also described turmeric as a yellow powder developed from the rhizome of the plant *Curcuma longa*, is widely used in food colouration mainly in Indian cuisines. It is also used as an additive in prepared mustard. Besides, it was used as a traditional medicine for the treatment of various sprains and inflammations. It was found experimentally that the active agent found in turmeric powder is responsible for healing ulcers and wounds and provide relief to pain when applied topically or taken orally.

Criteria for patent

For any patents to be granted patents are required to satisfy three major criteria:

1. Criteria of novelty: Novelty refers to new innovations in terms of an invention and must not be based on any existing knowledge or 'prior art.'
2. non obviousness: The invention should be non-obvious, that is someone familiar in the art should not be able to predict the similar steps thereby making the invention completely unique.
3. utility” The invention must be useful.

Most patents based on indigenous knowledge fail to meet the criteria of novelty and non obviousness since most of the time minor to major similarity could be found and predicted by anyone trained in similar disciplines.

The Battle for 'Haldi' – The Turmeric Patent

A re-examination claim with USPTO was file for the invalidation of patent application no. 5401540 by the Indian Council for Scientific and Industrial Research (CSIR) on October, 1996 as the patent lacked the element of novelty on the ground of healing power of turmeric powder which was already found and put into practice in India for ages.

It was prompted by a legal challenge mounted by CSIRs attorneys who provided evidence that turmeric powder was a part of the traditional Indian knowledge-base. It was being used in India for ages now as a wound healing agent among other things, and was not a discovery of the US patentee.

It was contended to be a 'prior art' as in India it was already in use to treat wounds, cuts and rashes and hence was not a newly discovered fact. In spite of being a well-established fact that turmeric has been a household ingredient in India for many years, yet finding published literally information as concrete evidence to support the practice of using turmeric powder for wound healing purposes in India was a troublesome work. Due to extensive researches, 32 references were located in different languages namely Sanskrit, Urdu and Hindi and also a paper published in 1953 by the Indian Medical Association to substantiate this claim.

In response, the inventors tried to convince that that the powdered and the paste form differed from each other in means of quality of bioavailability, absorbability and that one of 'ordinary skill in the art' could not expect that powder could be put to the same use as the paste. It was also contended that the powder was to be taken with honey, which itself has healing properties. Therefore, the USPTO revoked the patent, stating that the claims made in the patent were obvious and anticipated, and agreeing that the use of turmeric was an old art of healing wounds. In 1997, all the six claims were rejected by USPTO and the patent was declared invalid [7].

The fate of the turmeric patent

USPTO was forced by the Indian government to revoke the patent that it had granted to the two researchers in the United States on the use of turmeric powder for healing wounds. The patent was finally withdrawn by USPTO on 13th August after a year long legal battle with CSIR. They argued on the grounds that turmeric was a native Indian plant and had been used for ages by the people for wound healing purposes and therefore the patent lacked the novelty which is supposed to be one of the important criteria of patenting.

A US patent lawyer was hired and the Indian agency spent dollars to fight the case that was well supported with documents from scientific publications, books on home remedies and ancient Ayurvedic texts on Indian Systems of Medicines.

The Indian scientists claimed that it was the first time a developing country was able to overturn a patent of the United States on their traditional remedy. The patent was finally invalidated on the ground of prior

art since it was evidently confirmed and established by USPTO that the use of turmeric both in the powdered and the paste form served the same purpose. In 1997, claims were rejected for the second time and in 1998 the re-examination certificate was issued with signified the end of the case.

Therefore, the traditional knowledge that belonged to India was safeguarded in Turmeric case. The withdrawal of the turmeric patent is now seen as a first step in reversing biopiracy.

2. DISCUSSION

The Indian Council for Scientific and Industrial Research (CSIR) had objected to the patent granted and provided documented evidences of the prior art to USPTO. Though it was a well known fact that the use of turmeric was known in every household since ages in India, it was a herculean task to find published information on the use of turmeric powder through oral as well as topical route for wound healing. Due to extensive researches, 32 references were located in different languages namely Sanskrit, Urdu and Hindi. Therefore, the USPTO revoked the patent, stating that the claims made in the patent were obvious and anticipated, and agreeing that the use of turmeric was an old art of healing wounds. Therefore, the traditional knowledge (TK) that belonged to India was safeguarded in Turmeric case.

The turmeric patent cancellation is the earliest example of a successful challenge to a patent over traditional knowledge. It was the first time that a patent based on Traditional knowledge of a developing country had been successfully challenged. It demonstrated both that 'unjustified patent can be challenged' and the difficulty of checking in one country (in this case the United States) whether public knowledge about an idea already exists in another country (in this case India). The legal cost incurred by India was estimated to be about at US \$10,000 but the intangible value to the Indian users is immense.

In a publication in Nature K. Jayaraman writes 'CSIR's Director of Council for Scientific and Industrial Research (CSIR) during 1995 -2006, R. A. Mashelkar, said the success of the case had far-reaching consequences for the protection of the traditional knowledge base, "not only in India but in other Third World countries" [8]. In the paper the author goes on to state that the CSIR then Director R. Mashelkar had said 'the case also highlights the importance of documenting traditional knowledge, to provide evidence of prior knowledge'

To avoid/ prevent patent grants to TK in India, an initiative has been taken to document and publish all the TK by an e-library and such library is called as Traditional Knowledge Digital Library (TKDL). TKDL provides with details of scientific and traditional knowledge arranged in a manner according to the classification of international patents. This type of intellectual property protection aims to prevent people outside the community from getting Intellectual Property Rights over Traditional Knowledge. The Traditional Knowledge Digital Library (TKDL) is a searchable database of traditional medicine compiled by India. This supplies for evidence that support prior art by patent examiners when assessing plant application.

Later other patents on Indian medicinal plants were revoked viz. patent on *Azadirachta melia* commonly known as neem [9]. In 2017 World Intellectual Property Organization (WIPO) published a Toolkit to document traditional knowledge [10]. In the Toolkit it the definition of Traditional knowledge (TK) documentation is 'TK documentation is primarily a process in which TK is identified, collected, organized, registered or recorded in some way, as a means to dynamically maintain, manage, use, disseminate and/or protect TK according to specific goals'.

3. CONCLUSION

This documentation of traditional knowledge helps in preservation, dissemination, use and management of the knowledge rather than the purpose of legal protection. Positive protection grants rights which enable communities to promote their traditional knowledge, pose a control on the uses and benefits, hence protects against commercial exploitation. Some uses of traditional knowledge can be protected through this existing intellectual property system.

4. CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this work.

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