

# Traditional knowledge

## and patents relating to *Lepidium meyenii*: an example not to be followed

Much debate has been generated on the subject of how traditional knowledge can be protected within the existing intellectual property system, and there are some well-publicised cases of patents being granted for traditional knowledge that was already publicly known.

In this article, **Begoña Venero Aguirre** describes one such case, that of maca or *Lepidium meyenii*, a plant cultivated high in the Andean mountains. Native Peruvians have traditionally used maca since pre-Incan times for both nutritional and medicinal purposes.

Originating in Peru, maca or *Lepidium meyenii* has been grown for centuries. Peruvians have long been using its edible roots as a source of food and to increase fertility. It is also thought to have anticarcinogenic and aphrodisiac properties, and has been used, amongst other things, as an aphrodisiac and a defence against cancer.

Invention or reinvention... that is the question

In 1998, the people who were later to become the “inventors” – according to patents filed in the United States – took some dry maca roots from Peru (from the Herbarium at the Natural History Museum “J. Prado” Un.H.S., Lima).<sup>1</sup> Using a purified maca root extract, they carried out trials on mice to confirm the traditional use of maca as an aphrodisiac. They were successful.

Later, patent applications were filed and patents were granted in the United States for the following inventions:

1. *Lepidium meyenii* root extract for pharmaceutical use;
2. Treatment of sexual disorders using *Lepidium meyenii* root extract.

An international patent application (PCT) was also filed for compositions and methods of preparing them from *Lepidium*.

Peru's response

In June 2002, INDECOPI (National Institute for Defence against Competition and the Protection of Intellectual Property) learned of the existence of these patents and this patent application. In July 2002, INDECOPI set up a working

group and asked it to examine the patents granted in the United States and the international patent application under examination, to analyse the consequences and to assess possible responses. This working group included representatives from government institutions and non-government organisations.

The group gathered together a great deal of information on maca and its uses and listed the technological procedures used to produce the end product as compared to the ones described in the patents granted in the United States and the international patent application filed. On the basis of these processes, the group examined the patentability of the above inventions and reached the following conclusions:

- the patents granted in the United States did not, amongst other things, meet the requirement of an “invention”,
- the international patent application did not, amongst other things, meet the requirements of novelty and inventive step.

In other words...

- Taking *Lepidium meyenii* root extract and using it to treat sexual disorders was obvious given the prior use and processes identified by the group,
- The compositions and methods for preparing them from *Lepidium* were already known and obvious given the prior use identified by the group.

The group also verified that the materials used as a basis in the above inventions were taken from Peru.

However, there was no proof that:

- i) these materials were obtained legally, and
- ii) that there was any provision for the equitable sharing of profits resulting from the use of these patents with Peru.

In view of these conclusions, the group plans to dispute the validity of the patents granted in the United States. The group has also contacted the patent offices of the countries designated in the international application so that they can look at the prior use identified by the group before making a final decision on this application.

The group is in the process of trying to set up a National Commission for the prevention of acts of biological piracy. The aim of this National Commission would be to monitor patent applications filed at patent offices in other countries and to act each time it learns of the existence of patent applications<sup>2</sup> or of patents relating to inventions developed on the basis of Peru's genetic resources or the traditional know-how of Peru's indigenous peoples. It would be desirable if this Commission could establish a channel of communication with patent and intellectual property offices in other countries.

## A few reflections

1. What is the purpose of the patent system? To protect re-inventions? The logic of the patent system only works if protection is only given to new inventions that involve an inventive step. This is the only justification for giving the patentee an exclusive right.

2. Outside the patent system...

- Should we ignore infringements of the rights of countries in which genetic resources originate and the rights of their indigenous peoples?

Grounds for refusal laid down in a number of patent laws prove that the patent system is not necessarily indifferent to considerations not directly resulting from patent law.

- Should just any type of research be encouraged?

This is not to say that genetic resources and traditional know-how should not be used to develop real inventions. On the contrary, authorised access to genetic resources and traditional know-how in the interests of research is encouraged.

Biological prospecting can be used for research and development of new and original inventions provided that access to genetic resources and traditional know-how is authorised by the country of origin or the indigenous people respectively and provides for the fair and equitable sharing of profits.

## Lessons to be drawn from this experience

Researching the prior use of inventions similar to those above has to be improved. There is a great deal of information about these types of inventions but it is difficult to find. This practical obstacle makes it very arduous to identify the nearest prior use and, as a result, prevents a rigorous and exhaustive examination of the patentability of these types of inventions, allowing patents to be granted for inventions that do not deserve it or that perhaps deserve it but should have a more limited scope.

To overcome this practical difficulty, it would be desirable to organise and arrange this information in such a way that it is easy to use in search and examination procedures by patent offices all over the world.

It should be borne in mind that these types of situations are damaging to the patent system. Only experts understand that these are merely isolated cases and that the same system has provided for solutions to these types of situations (such as patent revocation proceedings), which means that public opinion reacts against the patent system itself.

It would be fair and equitable to demand disclosure of the origin and legal provenance of the biological materials and traditional know-how serving as a basis for the achievement or development of an invention as a requirement necessary for the filing of the patent application. This requirement would have to be incorporated into international patent legislation or the internal legislation of every country.

This would enable the patent system to discourage the achievement or development of inventions without respecting the rights of the countries of origin or the indigenous peoples, which would redress the balance.

It is fair and equitable to recognise the contribution made by those developing inventions on the basis of biological materials or traditional know-how. However, it is also fair and equitable to recognise the contribution made by countries that supply the biological materials and by the indigenous peoples who supply their traditional know-how. To fail to recognise the latter contribution shows the recognition of the former to be unfair and inequitable. ■

1. See Zheng, B., He, K., Kim, C., Rogers, L., Shao, Y., Huang, Z., Lu, Y., Yan, S., Qien, L. y Zheng, Q., 2000. *Effect of a Lepidium meyenii lipid extract on the sexual behaviour of mice and rats*. *Urology* 55 (4): pages 598-602.

2. It is much more complicated and expensive to act once patents have already been granted.

One of the key agreements adopted at the 1992 Earth Summit in Rio de Janeiro was the Convention on Biological Diversity (CBD). This Convention, signed by the vast majority of the world's governments, establishes three main goals; to conserve, to sustainably use, and to share the benefits of biological diversity. One of the most controversial issues addressed by the CBD is intellectual property rights related to biological and genetic resources; although much of the earth's biodiversity is found in developing countries, these countries have not necessarily benefited equally with developed countries from industrial, medical, agricultural, and other uses of biological and genetic resources. The CBD commits signatories to "fair and equitable sharing of the benefits arising out of the utilization of genetic resources." Much debate has centred around the extent to which the intellectual property system should support the CBD.