

MAPUCHE MEDICINAL PLANTS: PROPOSITION IN THEIR PROPAGATION

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Abstract

The Mapuche (native indians from Chile) population is one of the largest populations of native indians left in America (approximately 1 million). As many of the other Native communities, they continuously struggle to maintain their rituals and customs. One of the most valuable customs for the Mapuche is the use of medicinal plants. All these plants are native plants from the southern area of Chile and some of them are now hard to get. Two workshops were done with a group of Machis (Mapuche medicine woman), in order to determine the species they used the most and the scarcity status of these plants. From a list of 24 species, 10 were found in the red book of endangered species from the Government of Chile. A proposal for future work in propagating these species is given at the end of the paper.

Key Words

Medicinal plants, Mapuche, Machi, endangered species, propagation, medicinal plants

A LITTLE BIT OF HISTORY

In order to understand the present situation that the Mapuche people are living in Chile, we need to go back in time at least 500 years. In 1536, the Spaniards arrived for the first time to Chile. They went from Peru to Argentina, crossed the Andes Range and found only Native Americans, mountains, forests and, unlike Peru, there was no gold (Villalobos 1982). These Spaniards went back to Peru and spread the word that going to Chile was not worthy-no gold, only miseries. Nevertheless, in 1541, another expedition went from Peru to Chile through an easier route-the desert. They then founded the first city in Chile-Santiago (our capital today) (Villalobos 1982). Their idea was to colonize and have the native Americans as their slaves. Obviously the indigenous communities did not like this and a long war started. The northern indigenous communities didn't last very long and soon

enough the Spaniards conquered them. In contrast, the Mapuches, located in the southern region of Chile (Figure 1), were numerous and good fighters and resisted the invasion for 100 years. In fact, in 1641, the Spaniards renounced the idea of colonizing the area of Bio-Bio to Temuco, and the King of Spain officially gave that land to the Mapuches as a separate, independent territory (Villalobos 1982).

Until early 1800, life was peaceful between Mapuches and Spaniards. The Chileans (people born in Chile were mainly descendants from Spanish colonizers) decided to be independent from Spain and succeeded in creating the Republic of Chile in 1810-in other words, the political, territorial and legal jurisdiction of the land and their people (Bengoa 1985). At that time, they realized that the Mapuche lands divided Chile in two, threatening the continuity of the sovereignty of the republic. They even feared that other

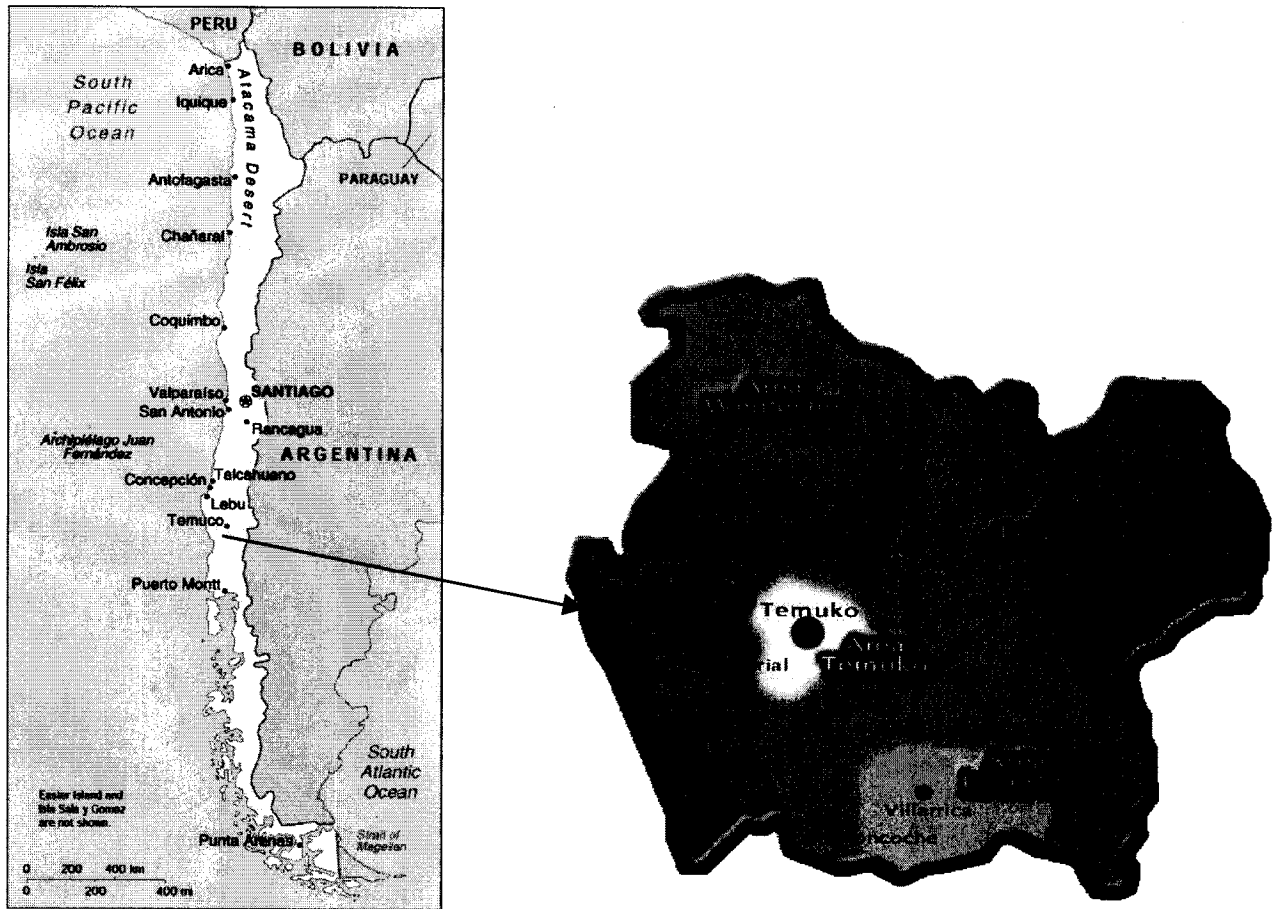


Figure 1. Map of Chile (left) and map of Temuco (right) and how the territory is divided according to the Mapuche people.

countries could claim this territory as theirs. In 1859 the Chilean government officially tried to incorporate the Mapuche territory into the rest of Chile by giving, buying, or renting some of these lands to foreign settlers (Bengoa 1985). But the Mapuche had a different concept of land property and, for them, they could not sell or give their lands. Lands were given to them by their ancestors and the sacred spirits to be part of their communities and families for eternity. They could not be owned as private property of groups, much less of individuals (Casanova 2000). This conflict caused one of the bloodiest wars in the history of Chile where, in 1883, the Mapuche finally surrendered to the Chilean Government and Indian reservations were established (Villalobos 1985). This meant that the Mapuche lost 9.5 millions hectares and only 500,000 were given to them, usually marginal lands. Per community, they received a variable amount of land depending on the amount of people integrating the

community-an average of 4 or 6 ha per person (Vidal 2000). The same author states that the Government gave them property titles as communities, not as individuals, and that further along in time some of these lands were stolen from the Mapuche.

1V MAPUCHE'S WORLD VISION

(COSMOVISION)

According to a Mapuche Machi Ilda (shaman, medicine women), the only way to work with the Mapuche is to fully understand their cosmovision, their way of seeing the world, nature, human beings and all the forces that interact in the Universe (Machi Ilda 2000). As you can imagine this is a very complex topic that goes beyond the objectives of this presentation. So we'll talk only in general terms and emphasize those concepts that we think are relevant to understanding the use of native plants by the Mapuche community. They understand the Universe (*Waj mapu*) as divided

into at least 4 levels: *Wenu mapu* (heaven), *Ragin Wenu mapu* (upper world), *Puji mapu* (earth), and *Minche mapu* (the underworld). *Puji mapu* would be the analogue of our concept of earth, ground, where all living forms exist (Machi Victor 2000). The same author states that if we look at the *Waj mapu* (Universe) as a whole it's conformed by an infinite amount of equal forces. Each force (*newen*) represents the essence of every thing we find in nature: water, wind, stars and us. We all have the same value, the same amount of force, in their cosmos nothing or nobody is either higher or lower. It's important to understand that for the Mapuche, each one of us has a force, a power (*newen*). We belong to this force. Even though, we all have the same amount of force (in the sense that nobody is higher or lower), we are all different in essence, in our being (*che*) (Machi Victor). There are spirits that help them to gain power and are related to their own selves and others. Those are the spirits of the old woman, the old man, the young woman and the young men, known as the "Sacred Family." When they refer to the different elements of nature, they always talk about the spirit-element-for example, the old woman waterfall, the old man hill, the young man rock, the young woman forest. The sacred family's spirits are in every place and space-they are the interlocutors between man and the forces. They are the ones that have the knowledge of how to cure people, what plants to use and from what places should they be collected (Diaz 2001). So some communities have the spirit of the mountains. Other communities have the spirit of the water. The latter are responsible for calling the rains, and their Machis do the rain ritual (Diaz 2001). They give an immense importance to the places where the plants should be collected, depending on the patient and her spirit, the origin of the sickness and her *newen*, they choose which plant to use and the place that it should be collected (Machi Ilda and Machi Maria 2000). The same species but from different sites makes a world of difference. After they find the right plant in the right place, then they need to know when to cut it how to cut it and the influences of the stars and the moon (Machi Maria 2000).

So, we can see that propagating medicinal native plants is a complex task. The main point is to recover the ecosystems where these medicinal plants were originally found. The idea of having medicinal gardens doesn't appeal to them. As one

of the Machis says, "Medicinal plant gardens are no good, they are lies. They don't have the *newen* from our ancestors. I asked if you *winkas* (Chileans) really want to help us, why don't you help us to protect the places that have the force, the power, the *newen* like the *menokos* (wetlands), *lil* (gorge), the *xayenko* (waterfalls)?" They don't have recipes. The same plant doesn't always cure the same sickness. In fact, they mostly use a mixture of plants, mixtures given to the Machi in a dream or a trance (Machi Ilda 2000).

THE SCENARIO TODAY

Right now, besides the problem of the land property, many of the Mapuche have lost their customs, their cultural traditions. Many of them don't even speak or understand their own dialect as a result of a discrimination process that has been going on for the last 500 years. The Mapuche are divided. There is the "hard or tough" wing that would like to sue the government by the International Indigenous Rights, want all their lands back (the ones agreed upon with the Spanish King in 1641) and economical compensation to all the Mapuche families. The "softer" wing just advocates for the 500,000 hectares given by the first government of the Republic of Chile (in other words, 100,000 ha). The government is making some effort to integrate the Mapuche community into the rest of the nation. There is a Commission in charge of buying lands for the Mapuche people even though their funding is limited and therefore some of the land being acquired is still marginal (degraded, high altitude lands, and so on). On the other side, the government has made significant changes in the public health system in order to include the traditional medicine for the indigenous communities as an option for them to choose when they go to the hospitals for health problems.

The objectives of this study are to:

- Describe the present situation of the Mapuche by going back in history and into their cosmivision.
- Explain the conservation status of medicinal native plants used by the machis.
- Propose a future plan of action in order to recover some of the original ecosystems where Machis used to gather medicinal plants.

MATERIALS AND METHODS

Working with the Machis

In 1998, the Intercultural Health Program of the Government of Chile in Temuco contacted the Forestry Department of the Universidad de la Frontera in order to work together in finding solutions for the problem of scarcity in native medicinal plants. As always, there were no funds available for this. Therefore, an extension project was formulated and then won in order to have enough money to start doing some workshops with the Machis and other Mapuche people that are very knowledgeable in the use of medicinal plants (*yerbateras*). The objectives of these workshops were, first of all, to get to know each other and build a relationship of trust between the Machis and us. They were extremely distrustful of the *winkas* (white man). It took a long time for them to trust us and to accept working with us. They know that there are many out there trying to get their knowledge of medicinal plants in order to get new royalties or to sell them to the big drug commercial labs. So the first year a workshop was done. They then were invited to visit the Department of Forestry to see what we were doing, visit the greenhouse and see how we produced seedlings. We also went to visit them many times to their houses until, by the second year, we finally had built a relationship of trust between us. A second workshop was done where the objective was to identify woody species used for medicinal purposes. The workshop was done in Mapudungun (native language). Intercultural facilitators were hired in order to translate all the information gathered in the workshop into Spanish. They were recorded and then translated. We also had simultaneous translation while the questions were done. We also did field trips with them to recognize the plants in their natural environment, and observe how they did the ritual of gathering plants.

RESULTS

From that workshop, we identified 24 species that were the most used for medicinal purposes and that had some kind of scarcity problem. From a final workshop, we were capable of identifying the 5 species needed the most and which were almost

impossible to find anymore. The whole process of identifying species was very interesting. While they used the Mapudungun names, we used common or scientific names and neither group had a clue what species we were referring to. Then we decided to tell them to bring some samples so that we could identify them. That, plus some field trips, were the solution to the identification process of species. Besides the identification topic, we also mentioned the possibility of making medicinal gardens for them. The answer was clear—they were not interested. The plants would not have *nwen* (power) if they didn't grow in their natural environments. The next questions were: Would they allow us to produce these plants for them? Would they like to produce them themselves? The answers to these questions were not so clear. Some of them did not like the idea of plants being produced in a greenhouse. They wanted to transplant natural regeneration seedlings from other forests to the recovery sites, even though many of them had stated before that this technique did not have very good results for them. Others were much more open to the idea of plants being produced in greenhouses, but they did not think it feasible for their own people to grow them. They thought it would be transformed into a commercial activity where only those Machis who could afford to buy them would benefit from it. They would rather have some neutral institution producing seedlings for them at a low price.

Analysis of the results

The 24 species identified initially were compared to the list of flora with conservation problems from the "Red Book," written in 1989, where we found the conservation status of the species. Figure 2 shows that, of the 24 species originally identified, 10 were found with conservation problems. From those ten, 4 were rare, 5 vulnerable and 1 in danger of extinction. Three of the species classified by the Machis as the 5 scarcest plants for them belong to the initial list of 10. There is a high diversity of families. Only 4 families had 2 species belonging to them. All the rest had 1 species (Table 1).

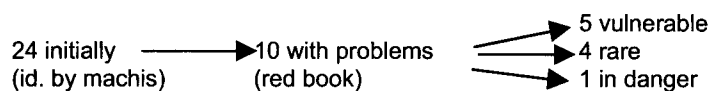


Figure 2. Comparison of the species identified by the Machis, and the list of terrestrial flora with conservation problems (Bernoit 1989).

Table 1. Families, and number of species that belong to those families, identified with conservation problems.

Families	N of species
Buddlejaceae	1
 Icacinaceae (R)	1
Coriariaceae	1
 Malvaceae (R)	1
Winteraceae	1
 Eleocarpaceae (V)	1
 Lauraceae (R)	1
Compositae	1
Apocynaceae	1
Solanaceae	1
Onagraceae	1
 Proteaceae (V)	1
 Rosaceae (R)	2
Lardizabalaceae	1
 Monimiaceae (V) (V)	2
Filesiaceae	1
Grossulariaceae	1
Anacardiaceae	1
Rhamnaceae	1
Cunoniaceae (P)	1

A literature search was done for all the medicinal uses and the parts of the plants used in traditional medicine for the 10 species with conservation problems. The variety of uses are multiple, from the common basic sicknesses such as cold, diarrheas, and constipation to more complex ones such as labor pains, menstrual problems, liver and kidney pains, venereal diseases, and so on. The parts most used from the plants are bark and leaves, with bark as the most important one. Roots and flowers are also used but not as commonly. In few cases, even the savia is used-for earache specifically.

PROPOSITIONS FOR FUTURE WORK

There are 2 main levels of work that is needed in the future. One is on a larger scale, such as regional location of the actual distribution of all the medicinal species used by the Mapuche community, not only from this study but also from previous studies. GIS methodology should be used in order to have only 1 map showing all

the different places where species can be found, site conditions and other significant information such as collection methods, and uses. This research should be done year round in order to observe the seasonal changes in yields and plant growth for leaves, flowers, bark, stem and roots. The other level is a local, more specific scale, where only a few species are studied-in other words, what's know as "case study." The characterizations of certain ecosystems where the species of interest grow are an important part of these studies. They also include the people's perception, traditional knowledge, and basic survival needs. Specifically, in the case of Chile and in the IX Region we think that we should promote the *in situ* conservation of the species and the protection of the habitats. Nevertheless, there is a need for replanting areas and recovering ecosystems so that these 2 methods can complement and support each other in the task of incorporating them into the social economic reality of the communities. Interdisciplinary teamwork appears to be a strong tool for achieving the objectives and the success of the study.

For the natural ecosystems, a characterization will be done in order to have the base line studies of the vegetation and of the site conditions. In those areas where replanting is needed, the efforts will be put into getting propagation material, preferably seeds, that will undergo viability and germination analysis, studies of phenology and vegetative production. We will need to study propagation techniques to evaluate the best fertilization and watering regimes, depending on the site conditions where the plants will be planted. In other words, we will need to create the protocols of production for the chosen species. Finally the establishment phase should also be evaluated, from site prep to planting tools to planting techniques.

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