

How does climate change impact how we select herbs and use them responsibly?

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Herbal medicine is used in various cultures and countries. It is a form of medicine tied to the Earth and utilized by both humans, companion animals, and wildlife, as documented in zoopharmacognosy. In the human realm, many herbal remedies were and are passed down through generations. Climate change threatens the continuity of knowledge, as growing seasons and weather patterns change rapidly and alter the ability to grow medicinal plants. Anthropogenic activities imminently threaten certain medical plants, especially plants that are endemic to vulnerable regions. In many cultures traditional medicine knowledge has already been lost without systematic recording. With climate change, there is a greater sense of urgency to record the wealth of knowledge that lies within cultures.

Medicinal plants are often obtained from wild populations, which makes their exploitation and over-harvest a threat to species survival. When temperatures warm and other anthropogenic activities exert pressure on plants, our response matters. One strategy to mitigate over-harvest is to cultivate certain medicinal plants experiencing climate related stressors. This would allow continued use of the medicinal remedy while allowing the wild population the chance to adapt to new circumstances. This is not a feasible solution for all medicinal plants, as many require such precise growing environments that can only be accomplished in nature while others take many years to cultivate. Encouraging cultivation of medicinal plants can be coupled with research regarding the chemical composition of cultivated plants versus wild plants to ensure similar medicinal properties in the cultivated form. Programs that help institute cultivation techniques must provide a means to maintain the pre-existing knowledge in the community. An article about “Plants in Peril” discusses how many international aid systems respond to climate change by trying to change local practices and encouraging the adoption of foreign practices. While initially this may seem good, these strategies “leave people with less knowledge of their own environments, less ability to deal with climate change and fewer future choices.”¹ Maintaining historic knowledge while implementing new techniques is important for empowering people to handle future changes without dependence on foreign intervention.

Working with indigenous people to find medical remedies has changed over the last century. “National and indigenous rights on these resources have become acknowledged” by researchers.³ The Convention on Biological Diversity (CBD) objectives are “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.”⁴ This was opened for signatures in the early 1990s and by 1999 had been signed by 175 states, including the European Union. The United States of America still has not signed this agreement. Signing this agreement would be one action that could show commitment to responsible use of medical plants and commitment to recognizing indigenous rights.

Climate change has amorphous characteristics, varying geographically and temporally, and having an unbalanced burden on disadvantaged social groups. There are many accounts of plants migrating up mountainsides, seemingly to find the cooler habitat that they need. Plants are adapting to warmer temperatures; however, what will happen when those plants struggle to find their ideal temperature? Indigenous peoples and local inhabitants will likely be the individuals who notice changes first, whether it be observing the plants climbing a mountain or struggling to find the same quantity of plants year to year. For example, the snow lotus in the Eastern Himalayas, which is used in Tibetan medicine, is considered to be in danger from over harvest and climate change, according to local experts.² One way to ensure responsible use of medicinal plants is to listen to locals and follow up with regulations that support the sustainable harvest of medicinal plants.

As a privileged individual in this society, climate change makes it even more pertinent to research and understand the implications of the herbal remedies I select. If my use of an herbal remedy comes at the expense of an indigenous culture having access to their medicine, is it worth it? No. It is our collective responsibility to learn from other cultures and use that knowledge carefully. The United States of America has a tortuous history of knowledge appropriation and misuse. In the nineteenth century, “sixty percent of all medicines patented... were distributed bearing Indian images.”⁵ Americans were aware of Native American contributions to medicine. During the 20th century, America “repressed the image of Indian as healer.”⁵ Although I grew up near a Cherokee Indian reservation and have hiked countless times through the mountains that Cherokee Native Americans inhabited prior to the 1830 Indian Removal Act, I never learned about the people or the medical uses of the plants in my area. For example, I learned that the Dogwood flower was the state flower of NC; but, I never learned about its medicinal uses by Cherokee Indians until I researched it myself. Many medical advancements, including the basis of the Pharmacopeia of the United States, owes a huge debt to indigenous knowledge.³ It is vital to recognize where our knowledge of medicinal plants comes from and give credit and compensation to indigenous peoples. While this will not directly mitigate the changing climate, it will not compound the negative effects that these cultures will have to face.

Climate change is a multifaceted problem. It has already begun to change how we live life and it will continue to stress plants and populations. An interdisciplinary approach that utilizes indigenous knowledge, medical professionals, plant scientists and ethnobotanists will be crucial to preserving knowledge and continuing to use medicines that have been around for centuries. Planning and managing impacts is preferable to reactive decision making after climate change has made a lasting impact. In the context of herbs, there is still time to plan and manage impacts as they unfold, instead of scrambling to preserve something as large scale changes are threatening it. Giving everyone a seat at the table and valuing their contributions, whether the knowledge comes from scientific research or years of experiential use, will expedite solutions to species loss and will foster responsible use of resources.

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