

Scientists examine the ethnobotanical uses of stramonium

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Research news

- **UGR scientists examine the ethnobotanical uses of stramonium - an essential plant in Pre-Columbian medicine, now growing in popularity in recreational drugs.**
- **With more than a hundred identified medicinal uses, the various species of the Datura genus of plants, such as stramonium, have been used for centuries in traditional Mexican and Spanish medicine.**
- **Research indicates that, in Mexico, these plants continue to be used more for medicinal purposes than in Spain, where they are now more associated with recreational drugs.**



The Datura genus, which includes stramonium, encompasses a number of plant species that have featured heavily in the traditional medicine and popular culture of countries such as Mexico and Spain.

Given the importance of these species, a team of researchers from Mexican and Spanish institutions, including scientists from the University of Granada (UGR), Spain's National Museum of Natural Sciences (MNCN-CSIC), and Mexico's National School of Anthropology and History recently conducted a study on the past and current uses of these plants in both countries. Among other findings, they identified the increasing consumption of this genus as a drug, and, on several occasions, its use in sexual assaults.

The Datura genus comprises 14 plant species and hybrids, the majority of which are herbaceous annuals or shrubs. Although they originate from America, nowadays many of them can be found in a wide range of countries and environments. All these species contain alkaloids, which are naturally-occurring cyclical and nitrogen-

containing organic compounds. It is these substances in particular that make the use of these species so widespread.

“They have been widely used in the traditional medicine of both countries [Mexico and Spain]. Our study alone has identified 111 medicinal applications to treat 76 illnesses or symptoms, including asthma and diarrhoea, or their anti-inflammatory and antibacterial properties in the treatment of dermatological problems”, notes researcher Martí March-Salas of the MNCN.

“We also know that, historically, these plants were used in shamanic rituals and witchcraft, both in Mexico and Europe”, adds Dr. Paloma Cariñanos of the UGR. Dr. Guillermo Benítez, also of the UGR, comments: “Our findings—based on our review of Pre-Columbian codices, medieval texts, and books on ethnobotany—show that, despite many of the traditional uses of these plants being similar in both countries, nowadays there are striking differences. While in Mexico they are still used more for medicinal purposes, in Spain we are finding that they are being consumed for supposedly recreational purposes. We have even identified the use of the alkaloids derived from them in sexual assault cases”.

“These results highlight the importance of continued research into these species and their naturally-occurring compounds, both from a botanical perspective and also in the context of forensic toxicology and medicine”, the researchers conclude.

Bibliography:

Benítez, M. March-Salas, A. Villa-Kamel, U. Cháves-Jiménez, J. Hernández, N. Montes-Osuna, J. Moreno-Chocano, P. Cariñanos. 2018. ‘The Genus *Datura* L. (Solanaceae) in Mexico and Spain: Ethnobotanical Perspective at the Interface of Medical and Illicit Uses’, *Journal of Ethnopharmacology*. DOI: <https://doi.org/10.1016/j.jep.2018.03.007>

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