

Artículo Original / Original Article

Flowers vs. Devils: plants used against witchcraft in the urbanized Sonora Market, Mexico City

[Flores vs Demonios: plantas usadas contra la brujería en el urbanizado Mercado de Sonora, Ciudad de México]

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Section Ethnobotany

Received: 19 April 2023
Accepted: 6 June 2023
Accepted corrected: 22 August 2023
Published: 30 May 2024

Citation:
García-González G, Muñoz-Tejada N, Torres-Montúfar A.
Flowers vs. Devils: plants used against witchcraft in the urbanized Sonora Market, Mexico City
Bol Latinoam Caribe Plant Med Aromat
23 (3): 371 - 381 (2024).
<https://doi.org/10.37360/blacpma.24.23.3.25>

Abstract: Mexican markets embody cultural diversity and offer a wide range of products, serving as hubs for local exchange. In our study at Mexico City's Sonora Market, the country's prominent medicinal market, we explored the use of plant remedies against witchcraft in an urban environment. Through interviews with plant vendors and extensive data collection, we identified 21 plant species from 16 botanical families renowned for their effectiveness in combating sorcery, attracting good luck, and promoting success. Additionally, we documented 14 ailments associated with envy and negative emotions. These remedies involved practices and applications such as cleansings, decoctions, baths, and incense burning, aimed at alleviating afflictions and fostering positive outcomes. Notably, the Sonora Market continues to uphold the tradition of using plant remedies against witchcraft, even in the bustling setting of one of the world's largest cities. This highlights the enduring significance of these practices within Mexican society.

Keywords: Ethnobotany; Evil eye; Luck-Triumph; Sorcery; Witches market.

Resumen: Los mercados mexicanos encarnan diversidad cultural y ofrecen numerosos productos, sirviendo como centros de intercambio local. En nuestro estudio en el Mercado de Sonora en la Ciudad de México, el sitio de plantas medicinales más relevante del país, exploramos el uso de plantas contra la brujería en un entorno urbano. A través de entrevistas con locatarios, identificamos 21 especies de plantas pertenecientes a 16 familias botánicas usadas en la lucha contra la brujería, atrayendo buena suerte y promoviendo el éxito. Además, documentamos 14 enfermedades asociadas con la envidia y emociones negativas. Los remedios involucraban prácticas y aplicaciones como limpias, decocciones, baños, incienso, con el objetivo de aliviar dolencias y fomentar resultados positivos. En el Mercado de Sonora persiste la tradición de utilizar plantas contra la brujería, incluso en el marco de una de las mayores ciudades del mundo, resaltando la importancia de estas prácticas dentro de la sociedad mexicana.

Palabras clave: Etnobotánica; Mal de ojo; Suerte/triunfo; Embrujo; Mercado de brujos

INTRODUCTION

The Folk or traditional medicine is resulting of a close relationship of man and plants, it still plays a relevant part in several latinamerican countries like Mexico (Manzanero-Medina *et al.*, 2009, Lara-Reimers *et al.*, 2019; Delgado-Salinas *et al.*, 2021; Estrada-Castillón *et al.*, 2021). Mexico is considered as one of the five megadiverse countries of the world with more than 22000 vascular plant species (Villaseñor, 2016), and is a multicultural with more than 60 indigenous groups (Vidal & Brusca, 2020). This combination allowed that many species of the Mexican flora become an alternative to medicine in both rural and urban communities (Bye *et al.*, 1995).

Traditional medical practitioners in Mexico, including curanderos, chamanes, brujos and *limpiadores* (cleaners), have a long-standing tradition of utilizing plant-based remedies to treat various bodily systems, ranging from respiratory, gastric, renal, hepatic, neurologic, skin, and circulatory (Grimberg, 1992; Bye *et al.*, 1995; Heinrich *et al.*, 1998; Faggeti, 2010; Faggeti, 2011; Mariscal, 2011). Moreover, there exist a distinct category of folk illnesses associated with “supernatural” causes such as *susto* (fright), *mal de ojo* (evil eye) or *amarres* (moorings) (Martínez & Martin, 1966; Gómez & Gómez, 1985; Heinrich, 1994; Trotter, 2001; Chávez, 2016; Zolla *et al.*, 2020). These illnesses are difficult to define, as they have deep roots within Mexican and Latin American cultures, they are believed to be caused by the negative thoughts and emotions directed towards an individual or a group of people, which then manifest as a destructive force or energy (Rivera, 1986; Heinrich, 1994; Trotter, 2001; Zolla *et al.*, 2020).

The Sonora market is almost located in the center of Mexico City, it is the main distribution center of medicinal plants from Mexico and abroad (Alvarado *et al.*, 2020). This market harbors approximately 300 useful plant species (De Garay, 1997; Mendoza-Castelán *et al.*, 1997). But also, this place is regionally known as the “witches market” because it have a section where all kind of amulets, potions, talismans, balms and preparations made from plants, animals or minerals to attract good luck and wealth, preventing or countervailing the nefarious

effects of witchcraft or to harm to a person with sorcery (Juárez-Rosete *et al.*, 2013; Ugent, 2000) remarking that the witchcraft is not relegated to the realm of folklore and superstition. Despite the importance of the market and the lingering fascination surrounding witches and witchcraft, there are not studies that address which are the most used plants to combat witchcraft, so our aim is to investigate the helpful plants to treat the witchcraft, define the “diseases” and to provide a species list and the way of use.

MATERIAL AND METHODS

Field studies were conducted from January to April 2022 at Sonora Market in Mexico City. Useful plant information was recorded using semi-structured interviews (Russell, 2005). In particular, we sought the following information: common names of useful plants, plant part(s) used, preparation/administration, local folk medicinal uses of plants, and disease definitions. For each plant, a voucher specimen was collected and deposited at the FES Cuautitlan Herbarium (FESC). The scientific names were searched using specialized literature (Rzedowski & Calderón de Rzedowski, 2001; Simpson, 2019) and follow the International Plant Names Index (IPNI: www.ipni.org) and [w3TROPICOS \(mobot.mobot.org/W3T/Search/vast.html\)](http://w3TROPICOS.mobot.mobot.org/W3T/Search/vast.html).

Data were collected from five informants/sealers who typically inherited their ethnobotanical knowledge from their direct ancestors (parents, grandparents) via oral traditions. For each species, the botanical name and family, local names, preparation/administration, and folk medical uses are reported.

RESULTS

We found that 21 species (belonging to 16 botanical families) are employed for preventing or treating witchcraft and to obtain luck (Table No. 1, Figure No. 1, Figure No. 2 and Figure No. 3). The most frequently quoted method of preparing/application medicinal plants was through cleansings (16 species), decoctions (8 species), two species used in baths, and two species burned as incense (Table No. 1).

Table No. 1
List of the main plants used against witchcraft in the Sonora Market

	Family	Species	Common name	Illness/suffering	Mode of use
1	Acanthaceae	<i>Justicia spicigera</i> Schltld.	Muicle	Evil eye Fright	Cleansing
2	Amaranthaceae	<i>Dysphania ambrosioides</i> (L.)	Epazote morado	Transmutation of	Cleansing

		Mosyakin & Clemants		people	
3	Asteraceae	<i>Artemisia absinthium</i> L.	Ajenjo	Fright Sorcery	Decoction
4	Asteraceae	<i>Chromolaena odorata</i> (L.) R.M. King & H. Rob.	Rompesaragüey	Evil eye Sorcery	Decoction Cleansing
5	Bignoniaceae	<i>Tecoma stans</i> (L.) Juss. ex Kunth	Claudorita	Gossipy neighbors	Cleansing
6	Commelinaceae	<i>Tradescantia pallida</i> (Rose) D.R. Hunt	Pata de gallina	Leg tie	Decoction
7	Crassulaceae	<i>Sedum praelatum</i> DC.	Siempreviva	Triumph and success	Cleansing
8	Ericaceae	<i>Arbutus xalapensis</i> Kunth	Madroño	Sorcery	Cleansing
9	Lamiaceae	<i>Ocimum basilicum</i> L.	Albahaca	Sorcery	Decoction Cleansing
10	Lamiaceae	<i>Origanum majorana</i> L.	Espanta muerto	Deaths in family Bad air	Cleansing
11	Lamiaceae	<i>Salvia amarissima</i> Ortega	Salvia/botón de oro	Money and Job	Decoction Incense
12	Lauraceae	<i>Laurus nobilis</i> L.	Laurel	Clean house of negative things	Cleansing Bath
13	Myrtaceae	<i>Psidium guajava</i> L.	Guayaba	Open paths	Decoction
14	Plantaginaceae	<i>Plantago major</i> L.	Siguaraya	Evil eye	Cleansing
15	Rutaceae	<i>Ruta graveolens</i> L.	Ruda	Bad air Evil eye	Bath Cleansing Decoction Incense
16	Salicaceae	<i>Salix alba</i> L.	Arrasa brujería	Sorcery	Cleansing
17	Salicaceae	<i>Salix humboldtiana</i> Willd.	Rompe brujería	Sorcery	Cleansing
18	Scrophulariaceae	<i>Buddleja sessiliflora</i> Kunth	Yo puedo más que tú	Bending	Cleansing
19	Scrophulariaceae	<i>Penstemon roseus</i> (Cerv. ex Sweet) G. Don	Arrasa con todo	Sorcery Evil eye	Cleansing
20	Solanaceae	<i>Datura stramonium</i> L.	Toloache	Sorcery	Cleansing
21	Verbenaceae	<i>Verbena officinalis</i> L.	Verbena	Unblock	Decoction

Through interviews, two types of uses were recorded: three plant species used for obtaining luck, triumph, or success, and 18 plant species to prevent or undo bad sorcery. The illnesses that our informants mentioned are:

Sorcery

Fright (“*Susto*”) or Deaths in family (“*Muertos en la familia*”). It is mentioned as soul loss, which is a concept attributed to the phenomenon whereby a person's soul is believed to depart from their body due to intense fear. This occurrence can be triggered by distressing events such as witnessing or personally undergoing violence, the death of a cherished individual, unexpected encounters with wild animals or malevolent spirits, unsettling dreams, accidents, or

near-fatal experiences like nearly drowning or being involved in a car accident. Noteworthy symptoms associated with soul loss encompass anxiety, nervousness, lethargy, fatigue, diminished appetite, diarrhea, and a general sense of apathy.

Evil eye (“*Mal de ojo*”). It refers to a superstitious belief found in various cultures that certain individuals have the power to cause harm or misfortune by looking at someone with envy, jealousy, or ill intent. It is believed that the negative energy projected through the gaze can result in physical or emotional distress for the person who is the target of the Evil eye. The signs of evil eye include insomnia, aches and pains, uncontrollable crying of a baby or small child, fever, headache, and restlessness.

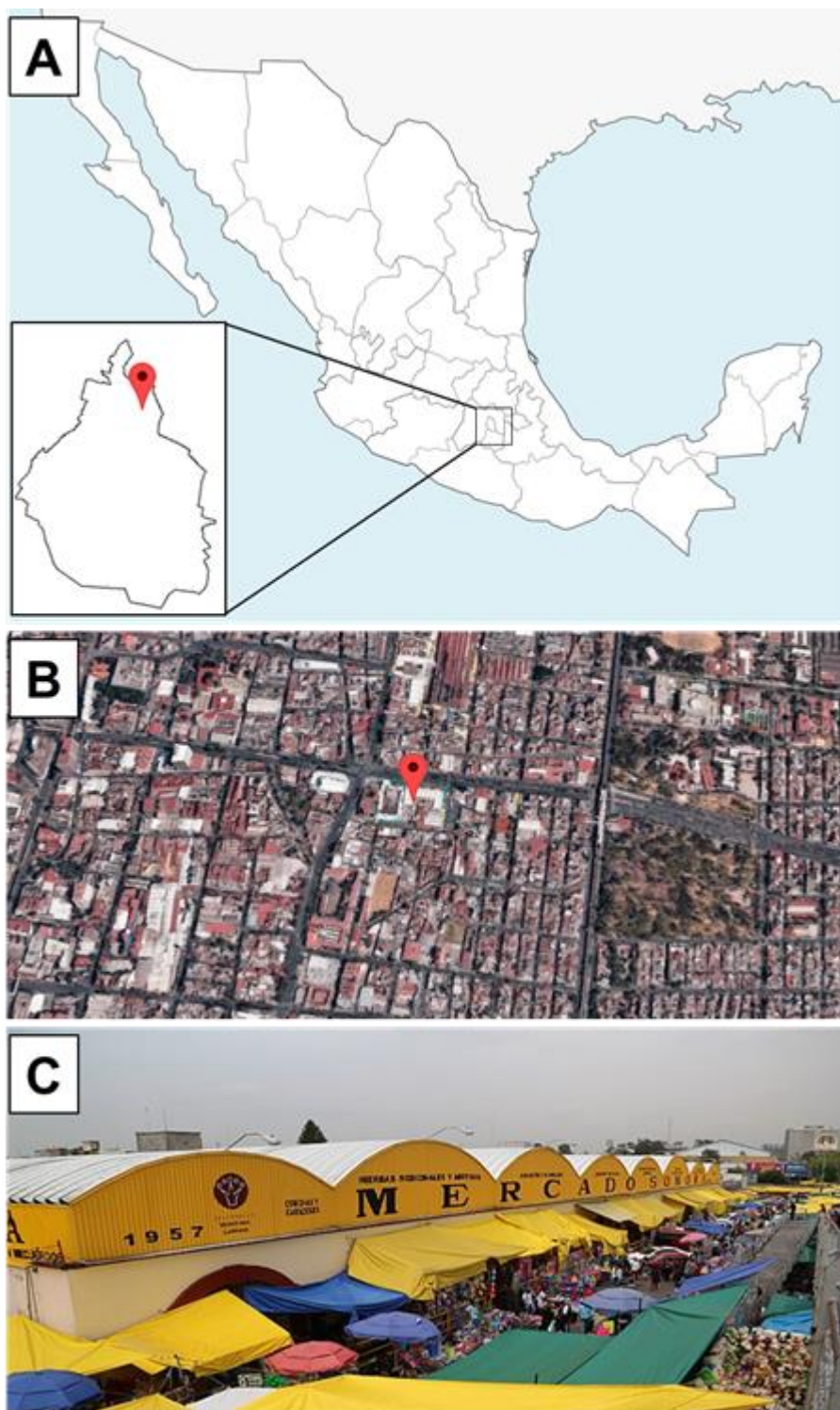


Figure No. 1

Sonora Market location. A. Mexico and Mexico city. B. Sonora Market in a highly urbanized zone. C. Sonora Market street view.

Sorcery (“*Brujería*”, “*embrujo*”, “*trabajos*”). It is believed that certain afflictions, encompassing not only physical and social problems but also ailments of the spirit, can be attributed to the practice of sorcery. This mystical art revolves around the

manipulation and directed influence of unseen forces, often fueled by envy, by a sorcerer who is hired by an individual seeking to inflict harm or illness upon another.

Transmutation of people (“*Transmutación de las personas*”). Hypocrisy or a double-faced person is a problem since they are people who pretend to be

friendly but in reality, they are envious or want to hurt. Symptoms include chills when you are with a person or anxiety and paranoia.

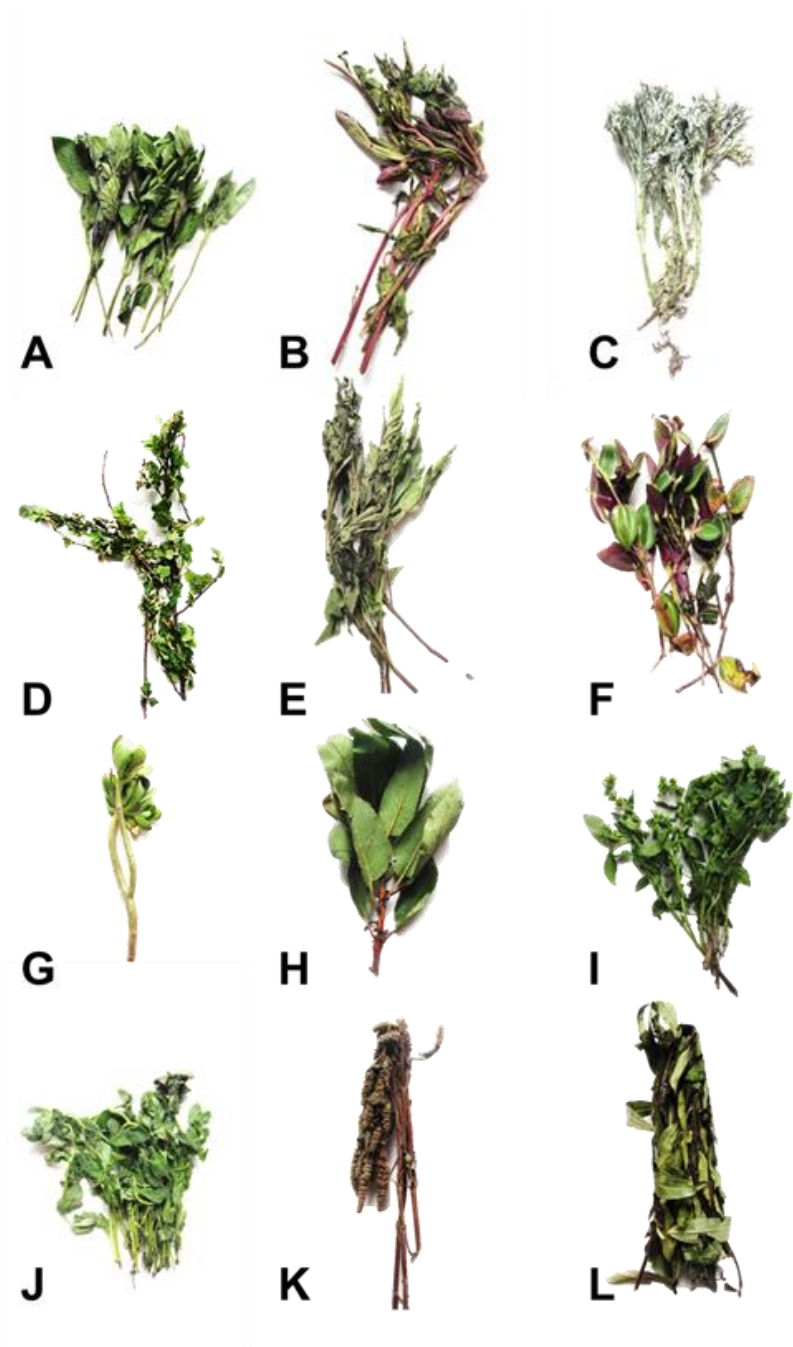


Figure No. 2

Plants used against witchcraft. **A.** *Justicia spicigera* (Acanthaceae). **B.** *Dysphania ambrosioides* (Amaranthaceae). **C.** *Artemisia absinthium* (Asteraceae). **D.** *Chromolaena odorata* (Asteraceae). **E.** *Tecoma stans* (Bignoniaceae). **F.** *Tradescantia pallida* (Commelinaceae). **G.** *Sedum praelatum* (Crassulaceae). **H.** *Arbutus xalapensis* (Ericaceae). **I.** *Ocimum basilicum* (Lamiaceae). **J.** *Origanum majorana* (Lamiaceae). **K.** *Salvia amarissima* (Lamiaceae). **L.** *Laurus nobilis* (Lauraceae).

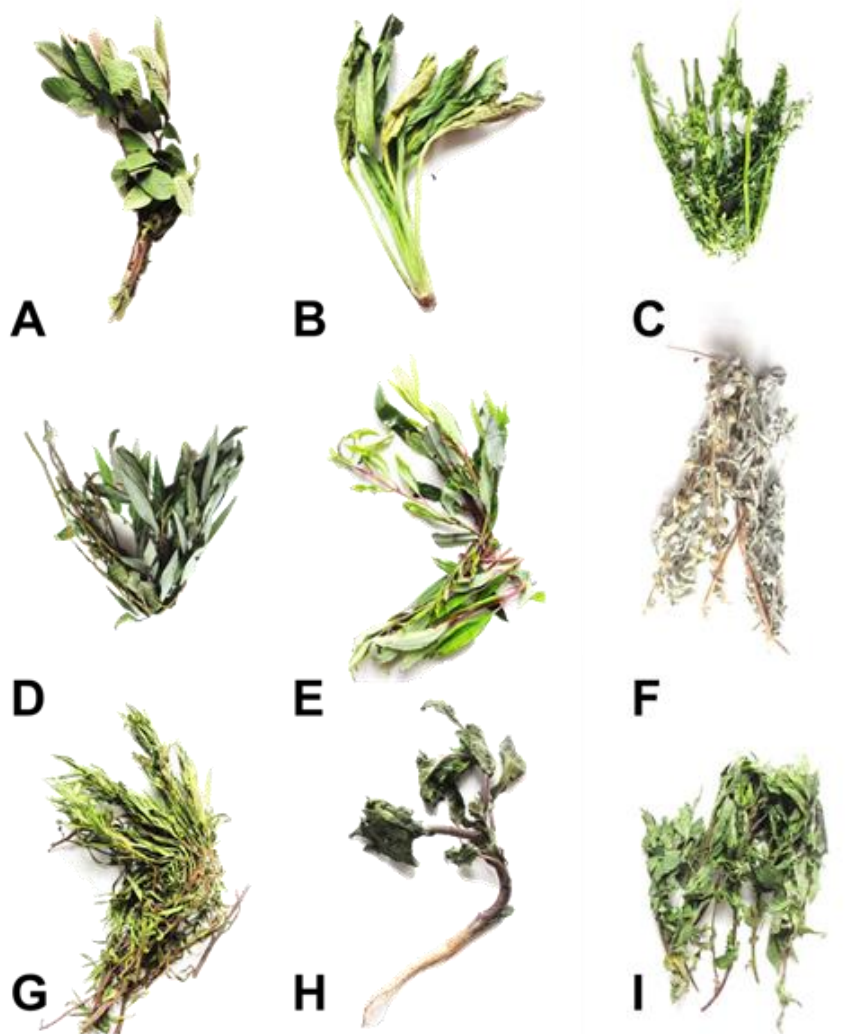


Figure No. 3

Plants used against witchcraft. **A.** *Psidium guajava* (Myrtaceae). **B.** *Plantago major* (Plantaginaceae).

C. *Ruta graveolens* (Rutaceae). **D.** *Salix alba* (Salicaceae). **E.** *Salix humboldtiana* (Salicaceae).

F. *Buddleja sessiliflora* (Scrophulariaceae). **G.** *Penstemon roseus* (Scrophulariaceae). **H.** *Datura stramonium* (Solanaceae). **I.** *Verbena officinalis* (Verbenaceae).

Leg tie (“*Amarre de patas*”). This "suffering" consists of a wife "binding" her husband's legs in a marriage so that he does not leave the house to get drunk with friends or see other women. The husband suspects that his wife cast this spell on him when he suddenly feels tired and does not want to go out after his workday.

Unblock (“*Desatascar*”). People who, no matter how hard they try in their work, are not able to ascend or get a raise. The symptoms in the person include depression and frustration. It is believed that

someone else cast a curse on them out of envy to prevent success.

Bad air (“*Mal aire*”). The onset of this condition can be attributed to imbalances of hot and cold elements within the body, which may occur as a result of inhaling cold air or experiencing a sudden transition from a cold environment to a warm one. However, it is also believed that supernatural forces play a role, characterized as a "malevolent, destructive force transmitted through the air and wind". The symptoms associated with this affliction

encompass a range of manifestations such as pain, cramping, facial twitching, diarrhea, headaches, vomiting, paleness, fatigue, trembling, and even paralysis.

Gossipy neighbors (“*Vecinos chismosos*”). Related to envy, the neighbors are sometimes responsible for spreading gossip and getting the person into trouble, whether man or woman, mainly in a marriage, sometimes culminating in their divorce. There are no symptoms in the person, just problems caused by the neighbors.

Clean house of negative things (“*Limpiar la casa de cosas negativas*”). Witchcraft is not only about people's illnesses, but it can also be necessary to rid the house of bad vibes or the effects of a spell cast by a visitor. Symptoms experienced by the person living in the house may include insomnia, malaise, paranoia, or a feeling of being watched.

Luck and Triumph

Open paths (“*Abrir caminos*”). When someone who is just starting their working life and has the ambition to climb to the top.

Triumph and success (“*Triunfo y éxito*”). Helpful for people seeking personal or work-related success.

Money and Job (“*Dinero y trabajo*”). Is beneficial for someone seeking economic and job stability, ensuring success.

Bending (“*Doblegar*”). To be the winner in a direct labor competition with another person or group of people. "Money and job" "Bending" is useful for winning a direct competition with another person or group of people in the workplace.

DISCUSSION

Ethnobotanical studies focusing on markets are relatively scarce in Mexico, and methodologies for collecting knowledge are still under development (Bye & Linares 1983; Bye, 1986; Martínez-Moreno *et al.*, 2016). In Mexico, every market has a space where a curandero or shaman offers medicinal plants. The sale of plants in markets fosters connections and bonds between individuals and plants, also the markets serve as a source of information on useful Mexican plant species (Morton, 1977; Bye & Linares, 1983; Arjona-García *et al.*, 2021). Mexican markets are considered one of the cultural legacies of pre-Hispanic Mexico (Bye & Linares, 1987; Juárez-Rosete *et al.*, 2013; Villamar, 2016; Ugent, 2000), where a wide diversity of medicinal plants from various parts of the country can still be found and commercialized. Although several studies have been

conducted on medicinal plants in markets (Senties, 1984; Martínez-Moreno *et al.*, 2016), none have specifically examined plants used for witchcraft.

The practice of witchcraft takes us back to ancient times when life revolved around natural phenomena, and humans faced the need to understand and explain existence by attributing it to divine creations. Nowadays, in a globalized world where information is accessible to everyone, it is difficult to conceive that the popular belief in witchcraft continues with the same or greater intensity. However, it has survived into the twenty-first century (Koss-Chioino, 2006; Tafur *et al.*, 2009). The practice allows families to maintain elements of their culture, beliefs, and identities, as traditional healing practices are passed down from generation to generation (Mulcahy, 2010).

Curanderos or shamans believe that health and illness consist of a duality: natural and supernatural (Glover & Blankenship, 2007; Trotter, 2001; Tafur *et al.*, 2009). People usually do not make a distinction between illness and disease, as for us, disease is a measurable pathological condition of the body (for example, bronchitis, a broken bone), while illness is a feeling of not being healthy. In fact, an illness may be due to a disease, but there are differences. Illness can also be due to a feeling of psychological or spiritual imbalance (Mulcahy, 2010; Gonzales, 2012; Zolla *et al.*, 2020). Therefore, illness perception is highly culture-related, while disease usually is not (Zolla *et al.*, 2020).

Natural illnesses are treated by herbal remedies and can also be referred out to medical practitioners. However, supernatural illnesses are not treatable by medical practices and must be attended to by a shaman (Gomez-Beloz & Chávez, 2001; Trotter, 2001). Therefore, health places emphasis on the spirit or soul (Hoogasian & Lijtmaer, 2010; Zacharias, 2006). Some consider witchcraft to be malevolent forms of practice that are not a part of traditional folk healing and are considered evil and, therefore, cannot be used as a practice of healing (Krajewski-Jaime, 1991; Applewhite, 1995). But others treat it as a health disorder and deserving of a cure (Zacharias, 2006).

Spiritual healing processes mainly include cleansings or *limpias* (Faver & Cavazos 2009, Gonzales, 2012), which are often done using magical plants, as well as sugar cane liquor, holy water, candles, cologne, chickens, a sweaty shirt, a doll's head, dove's blood, eggs, and guinea pigs (Cavender & Albán, 2009; Zolla *et al.*, 2020). Also, the odor is considered to draw out the evil during cleansings, and

therefore, odorous materials are often used to perform the *limpias* (Cavender & Albán, 2009; Palma-Tenango *et al.*, 2017).

To identify a soul illness, the diagnostic practice includes empathetic perception of the patient, verbal dialogue, visual impressions, tactile diagnosis, and even oracle methods (visions, prophecy) (Zacharias, 2006; Gomez-Beloz & Chávez, 2001; Gonzales, 2012; Chávez, 2016). However, shamanism is not widely accepted as a form of medicine and has historically been rejected and persecuted by the Catholic inquisitional movement (Zacharias, 2006; Hendrickson, 2013).

Many people, even in urban environments, believe that some illnesses and hardships are the work of envious or malevolent forces. Hutton (2004) mentions beliefs in sorcerers, witches, the evil eye, and witchcraft in many communities. The common notion of witchcraft includes a hostile person practicing sorcery. Sometimes, the witch or shaman figure is an archetype of evil, an antisocial menace who betrays the bonds and values of the community. However, these people can also cure or do good things with their knowledge, and the shaman or witch is a duality in which good and evil coexist. Our study relies on the use of good sorcery and witchcraft to counteract evil when it is done or to prevent damage.

In this work, we present two main groups of plants. Some are used to prevent evil and to attract success and fortune, and another group of plants is used to counteract damage already done. The first group includes plants used for self-improvement and self-confidence to generate the feeling of being protected, without the need to have an illness. Examples include Siempreviva (*Sedum praelatum*) and Guayaba (*Psidium guajava*). The other group of plants implies that there is suffering or physical effects, and maybe someone seeking to harm, such as Toloache (*Datura stramonium*) or Arrasa con todo (*Penstemon roseus*).

Two illness concepts are important to discuss: Fright and Evil eye. The fright or *susto*, which literally means fright or sudden fear, is the loss of one's soul resulting from incidents that have a destabilizing effect on an individual, causing the soul to leave the body. The incidents are diverse, ranging from unexpected barking of a dog to seeing a ghost. The Evil eye results from the perception that some people are "stronger" than others and that their strength can harm "weaker" people. According to our informants, women, babies, and young children are thought of as being weak, and when a strong person stares at them, the eyes of the strong person can drain

the power and/or soul from the weaker one. Powerful people can cause this intentionally or unintentionally. Both illnesses are deeply ingrained in Latin American societies, and many plants are primarily used for cleansings to treat them (Gonzales, 2012).

One common element to combat is envy, conceived as a potent and malicious emotion. In societies, people believe that the emotion itself transmits harm, such as covetous stares (the evil eye) (Dundes, 1992), and other practices to harm. Thus, a person who expresses envy betrays a desire to harm. With regards to health systems, envy should be considered the origin of many health problems, work and personal disturbances, and a vast array of rituals, remedies, and amulets are used to prevent it.

Most studies focus on the cultural definition of illnesses rather than their treatment (Fagetti, 2010; Gonzales, 2012). Few studies address remedies, and specifically the use of plants against witchcraft, among which Gonzalez *et al.* (2012), study stands out. This study explores the ethnobotanical knowledge and remedies employed in a specific Spanish village known for its association with witchcraft. The research reveals that various plants hold significant roles in countering witchcraft and warding off the evil eye. Some species are shared in both studies, differing in the way of use. For example, the Ruda (*Ruta graveolens*), which is utilized to protect against malevolent intentions and to cleanse spaces from negative energies and it is believed to possess strong protective properties and is often hung in homes or worn as an amulet (González *et al.*, 2012). Another plant shared in both communities is Laurel (*Laurus nobilis*) which is utilized as a protective plant against witchcraft and negative influences. Its leaves are often used in rituals and as talismans to ward off evil spirits, protect against malevolent intentions, and cleanse spaces from negative energies.

Additionally, Different species within the same genus are used, indicating that they may have similar effects, and people utilize the species that grow in the region, for example the Sage (*Salvia officinalis*) is used to clear negative energy and dispel evil, it is often burned as smudge sticks or used in cleansing rituals (González *et al.*, 2012), while in our study is reported the Botón de Oro (*Salvia amarissima*) for similar purposes.

Many other studies highlight the use of other plant species in Mexico against witchcraft (Heinrich, 1994; Lara-Reimers *et al.*, 2019), which on the one hand speaks to the persistence of magical-religious thinking, but on the other hand calls for a broader

study of remedies against these cultural afflictions.

CONCLUSIONS

Despite being perceived as antiquated or superstitious by certain individuals, the utilization of plants to counter witchcraft remains a prevalent and valued tradition in Mexico. Ethnobotany studies, as ours,

play a crucial role in emphasizing the significance of this practice. Traditional medicine holds immense cultural importance for many individuals, serving as a vital link to their ancestral heritage. Consequently, the incorporation of plant-based remedies is viewed as a means of connecting with their predecessors and preserving their cherished customs.

REFERENCES

- Alvarado AM, García Trejo F, Cardador-Martínez A, Magallán F. 2020. *Clinopodium mexicanum*: potential and difficulties for the sustainable use of a Mexican medicinal plant. **Bol Latinoam Caribe Plant Med Aromat** 19: 149 - 160. <https://doi.org/10.37360/blacpma.20.19.2.8>
- Applewhite SL. 1995. Curanderismo: Demystifying the health beliefs and practices of elderly Mexican Americans. **Health Social Work** 20: 247 0 - 253. <https://doi.org/10.1093/hsw/20.4.247>
- Arjona-García C, Blancas J, Beltrán-Rodríguez L, López Binnqüist C, Colín Bahena H, Moreno-Calles AI, López-Medellín X. 2021. How does urbanization affect perceptions and traditional knowledge of medicinal plants? **J Ethnobiol Ethnomed** 17: 1 - 26. <https://doi.org/10.1186/s13002-021-00473-w>
- Bye RA, Linares E. 1983. The role of plants found in the Mexican markets and their importance in ethnobotanical studies. **J Ethnobiol** 3: 1 - 13.
- Bye RA, Linares E. 1987. Usos pasados y presentes de algunas plantas medicinales encontradas en los mercados mexicanos. **Am Indígena** 47: 200 - 230.
- Bye RA, Linares E, Estrada E. 1995. **Biological diversity of medicinal plants in México**. In Arnason JT, Mata R, Romeo JT (Eds.): Phytochemistry of medicinal plants. Springer, New York, USA.
- Bye RA. 1986. Medicinal plants of the Sierra Madre: comparative study of Tarahumara and Mexican market plants. **Econ Bot** 40: 103 - 124. <https://doi.org/10.1007/BF02858951>
- Cavender AP, Albán M. 2009. The use of magical plants by curanderos in the Ecuador highlands. **J Ethnobiol Ethnomed** 5: 1 - 9. <https://doi.org/10.1186/1746-4269-5-3>
- Chávez TA. 2016. Humanistic values in traditional healing practices of curanderismo. **J Humanist Couns** 55: 129 - 135. <https://doi.org/10.1002/johc.12029>
- De Garay S. 1997. **Estudio etnobotánico de las plantas medicinales del mercado Sonora, México, D.F.** Thesis, Universidad Nacional Autónoma de México. México.
- Delgado-Salinas A, Torres-Colín L, Luna-Cavazos M, Bye RA. 2021. Diversity of useful Mexican legumes: analyses of Herbarium specimen records. **Diversity** 13: 267. <https://doi.org/10.3390/d13060267>
- Dundes A. 1992. **The evil eye: A casebook**. University of Wisconsin Press, Wisconsin, USA.
- Estrada-Castillón E, Villarreal-Quintanilla JA, Encina-Domínguez JA, Jurado-Ybarra E, Cuéllar-Rodríguez LG, Garza-Zambrano P, Arévalo-Sierra JR, Cantú-Ayala CM, Himmelsbach W, Salinas-Rodríguez MM, Gutiérrez-Santillán TV. 2021. Ethnobotanical biocultural diversity by rural communities in the Cuatrociénegas Valley, Coahuila; Mexico. **J Ethnobiol Ethnomed** 17: 1 - 22. <https://doi.org/10.1186/s13002-021-00445-0>
- Fagetti A. 2010. Ixtlamatki versus nahualli. Chamanismo, nahualismo y brujería en la Sierra Negra de Puebla. **Rev Pueblos y Fronteras Digital** 5: 4 - 23. <https://doi.org/10.22201/cimsur.18704115e.2010.10.145>
- Fagetti A. 2011. **Fundamentos de la medicina tradicional mexicana**. Saberes Colectivos y Diálogo de Saberes en México, México.
- Faver CA, Cavazos Jr. AM. 2009. Church, culture, and curanderismo: Mexican American social work students at the border. **Social Work Forum** 42: 41 - 54.
- Glover NM, Blankenship CJ. 2007. Mexican and Mexican Americans' beliefs about god in relation to disability. **J Rehabil** 73: 1 - 18.
- Gómez GE, Gómez EA. 1985. Folk healing among Hispanic Americans. **Public Health Nurs** 2: 245 - 249. <https://doi.org/10.1111/j.1525-1446.1985.tb00708.x>
- Gómez-Beloz A, Chávez N. 2001. The botanica as a culturally appropriate health care option for Latinos. **J Altern Complement Med** 7: 537 - 546. <https://doi.org/10.1089/10755530152639765>
- Gonzales P. 2012. Calling our spirits back: Indigenous ways of diagnosing and treating soul sickness. **Fourth World J** 11: 25 - 39.

- González JA, García-Barriuso M, Pardo-de-Santayana M. 2012. Plant remedies against witches and the evil eye in a Spanish "Witches' Village". **Econ Bot** 66: 35 - 45. <https://doi.org/10.1007/s12231-011-9183-y>
- Grimberg J. 1992. El chamanismo en México. **Rev Mex Cienc Polit Soc** 37: 53 - 58. <https://doi.org/10.22201/fcpys.2448492xe.1992.147.51547>
- Heinrich M. 1994. Herbal and symbolic medicines of the Lowland Mixe (Oaxaca, Mexico). Disease concepts, Healer's roles, and plant use. **Anthropos** 1: 73 - 83.
- Heinrich M, Ankli A, Frei B, Weimann C, Sticher O. 1998. Medicinal plants in Mexico: Healers' consensus and cultural importance. **Social Sci Med** 47: 1859 - 1871. [https://doi.org/10.1016/s0277-9536\(98\)00181-6](https://doi.org/10.1016/s0277-9536(98)00181-6)
- Hendrickson B. 2013. New contexts for curanderismo: Recasting Mexican American folk healing within American metaphysical religion. **J Am Acad Relig** 81: 620 - 643. <https://doi.org/10.1093/jaarel/ift013>
- Hoogasian R, Lijtmaer R. 2010. Integrating Curanderismo into counselling and psychotherapy. **Couns Psychol Q** 23: 297 - 307. <https://doi.org/10.1080/09515070.2010.505752>
- Juárez-Rosete CR, Aguilar-Castillo JA, Juárez-Rosete ME, Bugarín-Montoya R, Juárez-López P, Cruz Crespo E. 2013. Hierbas aromáticas y medicinales en México: Tradición e Innovación. **Rev Bio Cienc** 2: 119 - 129.
- Koss-Chioino JD. 2006. Spiritual transformation, relation and radical empathy: Core components of the ritual healing process. **Transcult Psychiatry** 43: 652 - 670. <https://doi.org/10.1177/1363461506070789>
- Krajewski-Jaime ER. 1991. Folk-healing among Mexican-American families as a consideration in the delivery of child welfare and child health care services. **Child Welfare** 1: 157 - 167.
- Lara-Reimers EA., Fernández E, Lara Reimers DJ, Chaloupkova P, Zepeda del Valle JM, Milella L, Russo D. 2019. An ethnobotanical survey of medicinal plants used in Papantla, Veracruz, Mexico. **Plants** 8: 246. <https://doi.org/10.3390/plants8080246>
- Manzanero-Medina GI, Flores-Martínez A, Sandoval-Zapotitla E, Bye-Boettler R. 2009. Etnobotánica de siete raíces medicinales en el Mercado de Sonora de la ciudad de México. **Polibotánica** 27: 191 - 228.
- Mariscal JG. 2011. Etnografía de un encuentro. Chamanismo transcultural en la Ciudad de México. **J Transp Res** 3: 70 - 84. <https://doi.org/10.1016/j.jtr.2011.04.002>
- Martinez C, Martin HW. 1966. Folk diseases among urban Mexican-Americans: Etiology, symptoms, and treatment. **JAMA** 196: 161 - 164. <https://doi.org/10.1001/jama.1966.03100150147040>
- Martínez-Moreno D, Valdéz-Eleuterio G, Basurto-Peña F, Andrés-Hernández AR, Rodríguez-Ramírez T, Figueroa-Castillo A. 2016. Medicinal plants of the markets of Izúcar de Matamoros and Acatlán de Osorio, Puebla. **Polibotánica** 41: 153 - 178. <https://doi.org/10.18387/polibotanica.41.12>
- Mendoza Castelán G, García Pérez J, Estrada Lugo E. 1997. **Catálogo y usos terapéuticos de plantas medicinales que se comercializan en fresco en el Mercado Sonora**. Universidad Autónoma Chapingo, Chapingo, México.
- Morton JF. 1977. Some folk-medicine plants of Central American markets. **Q J Crude Drug Res** 15: 165 - 192. <https://doi.org/10.3109/13880207709055170>
- Mulcahy JB. 2010. Magical thinking. **Anthropol Humanism** 35: 38 - 46. <https://doi.org/10.1111/j.1548-1409.2010.01051.x>
- Palma-Tenango M, San Miguel-Chávez R, Soto-Hernández RM. 2017. **Aromatic and medicinal plants in Mexico**. In *Aromatic and medicinal plants-back to nature*, IntechOpen, London, UK. <https://doi.org/10.5772/68038>
- Rivera Jr. G. 1986. Curanderismo and childhood illnesses. **Soc Sci J** 23: 361 - 372. [https://doi.org/10.1016/0362-3319\(86\)90067-4](https://doi.org/10.1016/0362-3319(86)90067-4)
- Russell BH. 2005. **Research methods in anthropology. Qualitative and quantitative approaches**. Altamira Press, Walnut Creek, USA.
- Rzedowski J, Calderón de Rzedowski G. 2001. **Flora Fanerogámica del Valle de México**. Instituto de Ecología, Universidad Nacional Autónoma de México, Ciudad de México, Mexico.
- Sentías A, 1984. **Plantas medicinales y sistemas tradicionales de curación del Valle de Tehuacán, Puebla**. Thesis, Universidad Nacional Autónoma de México, México.
- Simpson MG. 2019. **Plant systematics**. Academic Press, Elsevier, Boston, USA.
- Tafur MM, Crowe TK, Torres E. 2009. A review of curanderismo and healing practices among Mexicans and Mexican Americans. **Occup Ther Int** 16: 82 - 88. <https://doi.org/10.1002/oti.265>
- Trotter RT. 2001. Curanderismo: A picture of Mexican-American folk healing. **J Altern Complement Med** 7: 129 - 131. <https://doi.org/10.1089/107555301750164163>

- Ugent D. 2000. Medicine, myths and magic the folk healers of a Mexican market. **Econ Bot** 54: 427 - 438.
<https://doi.org/10.1007/BF02866542>
- Vidal O, Brusca RC. 2020. Mexico's biocultural diversity in peril. **Rev Biol Trop** 68: 669 - 691.
<https://doi.org/10.15517/rbt.v68i2.40115>
- Villamar AA. 2016. El estudio etnobiocológico de los tianguis y mercados en México. **Etnobiology** 14: 38 - 46.
- Villaseñor JL. 2016. Checklist of the native vascular plants of Mexico. **Rev Mex Biodiver** 87: 559 - 902.
<https://doi.org/10.1016/j.rmb.2016.06.017>
- Zacharias S. 2006. Mexican Curanderismo as Ethnopsychotherapy: A qualitative study on treatment practices, effectiveness, and mechanisms of change. **Intl J Disabil Dev Educ** 53: 381 - 400.
<https://doi.org/10.1080/10349120601008522>
- Zolla C, del Bosque S, Tascón A. 2020. **Mal de ojo, empacho y otras enfermedades tradicionales**, Artes de México y del Mundo S.A. de C.V., Ciudad de México, México.