MORNING-GLORY SEEDS

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1. Core Definition

Morning-glory seeds, primarily derived from certain species of the Convolvulaceae family, specifically ***Ipomoea violacea*** (often sold commercially) and ***Turbina corymbosa*** (historically known as **ololiuqui**), are recognized for their potent psychoactive properties. These properties stem from the presence of **Lysergic Acid Amides (LAAs)**, particularly **Ergine (LSA)**, which acts as a powerful hallucinogen. Historically, the use of these seeds is deeply rooted in **Mesoamerican cultures**, particularly in Mexico, where they were employed in ritualistic and divinatory contexts long before European contact. The source content notes their prominent use as hallucinogens throughout the **16th century in Mexico**, a period coinciding with the Spanish conquest and subsequent documentation of indigenous practices.

The psychoactive compounds found in the seeds mimic the effects of classic psychedelics, sharing structural similarities with **Lysergic Acid Diethylamide (LSD)**, though typically producing effects that are milder and often accompanied by significant physical side effects, such as nausea and vomiting. The formal classification of morning-glory seeds rests on their status as a natural source of ergoline alkaloids, placing them within the scope of study for pharmacognosy and psychedelic research. Their historical and ongoing use highlights a profound cultural engagement with naturally occurring substances for spiritual and healing purposes, making them a crucial topic within ethnobotany and the history of substance use.

2. Ethnobotanical Context: *Ipomoea* and *Turbina* Species

While the term morning-glory encompasses thousands of species, only a small subset is known to possess significant concentrations of psychoactive alkaloids. The most ethnobotanically significant species is ***Turbina corymbosa***, which was referred to by the Aztecs as **ololiuqui**. This term, meaning 'round things' or 'small spheres,' highlights the physical appearance of the seeds that were ingested. Historical accounts from the 16th century, primarily by Spanish chroniclers like Bernardino de Sahagún, meticulously detailed the use of ololiuqui in religious and healing ceremonies, affirming its central role in the indigenous pharmacopeia of Central Mexico. The knowledge surrounding the preparation and dosage of these seeds was closely guarded by religious specialists and healers.

A second species, *Ipomoea violacea* (often identified as ***Ipomoea tricolor*** in horticultural contexts), is also known to contain LSA and related alkaloids and is widely cultivated globally.

Unlike ololiuqui, which was intensely documented by early colonial authorities, the psychoactive properties of *Ipomoea violacea* were not scientifically confirmed until much later in the 20th century. However, it is now the species most commonly associated with recreational use due to its accessibility as a garden ornamental. The concentration of LAAs varies significantly between species, environmental factors, and even individual seed batches, which contributes to the unpredictable nature of the psychoactive experience.

3. Pharmacology: Lysergic Acid Amides (LSA)

The primary psychoactive component in morning-glory seeds is **Ergine**, commonly known as **Lysergic Acid Amide (LSA)**. LSA belongs to the ergoline family of alkaloids, which are structurally related to the ergot fungus alkaloids. Scientific analysis, particularly the seminal work conducted by Albert Hofmann in the early 1960s, confirmed the presence of LSA alongside several related compounds, including **isoergine**, **ergometrine**, and **lysergol**. These compounds are biosynthesized not by the plant itself, but by specific **fungal endophytes** (most commonly *Periglandula ipomoeae* and *P. turbinae*) that live symbiotically within the seeds and plant tissues, a critical finding that shifted the understanding of the substance's origin.

Pharmacologically, LSA acts primarily as a **partial agonist** at various serotonin receptors, particularly the 5-HT?A receptor, which is the mechanism believed to be responsible for the characteristic hallucinogenic and perceptual effects. The psychoactive potency of LSA is considerably less than that of LSD--estimated to be between 1/5th and 1/10th of LSD's potency--but it induces similar psychological alterations, including altered perception of time, synesthesia, and deep introspection. The experience is often described as more sedative or tranquilizing compared to the stimulating nature of LSD, sometimes resulting in dream-like or lethargic states.

4. Pre-Columbian Use and Ritual Significance

The use of morning-glory seeds in **Mesoamerica** dates back thousands of years, long predating the 16th-century reports cited in the source material. Archaeological evidence suggests they were integral to the religious systems of the Olmec, Maya, and particularly the Aztec civilizations. The seeds were regarded as sacred entities, imbued with the spirit of the gods, and were reserved for theocratic elites, priests, and respected healers (or *tlamatinime*). Their consumption was never recreational but strictly liturgical, aimed at achieving communication with the divine or diagnosing ailments that defied conventional remedies.

The ritual preparation of the seeds involved grinding them, often mixing the resulting powder with water or other substances, and administering the brew under strict ceremonial conditions. The effects were specifically sought for **divination**--predicting the future, locating lost objects or people, and determining the root cause of illness or misfortune. The consumption of ololiuqui was viewed

as a profound spiritual journey necessary for maintaining the cosmic and social order. This deep cultural embedding explains why the Spanish chroniclers gave such detailed accounts, simultaneously recognizing their importance to the indigenous people while condemning their use as idolatry.

5. Historical Suppression and Rediscovery

Following the conquest of Mexico in the 16th century, the Spanish Inquisition actively sought to eradicate native religious practices, viewing the use of psychoactive plants like ololiuqui, peyote, and teonanácatl (psilocybin mushrooms) as pagan devil worship. Decrees were issued banning their cultivation, possession, and use, often under threat of severe punishment. This intense pressure drove the ritual use of morning-glory seeds underground, where knowledge persisted only in remote, indigenous communities, particularly in Oaxaca and other isolated regions of Southern Mexico. For centuries, the existence and identification of ololiuqui became a subject of historical curiosity and botanical confusion in the Western world.

The true botanical identity and psychoactive nature of the seeds remained largely unknown to mainstream science until the mid-20th century. Key to their rediscovery were the field studies conducted by ethnobotanists such as **Richard Schultes** and the pharmacological confirmation by **Albert Hofmann** (the chemist who first synthesized LSD). Schultes documented the contemporary use of the seeds by Mazatec communities, collecting specimens that Hofmann subsequently analyzed in 1960. Hofmann's discovery of LSA in the seeds provided the conclusive link between the ancient Aztec rituals and a modern, scientifically characterized hallucinogen, thus bridging a gap of over four centuries of suppressed knowledge and affirming the veracity of the 16th-century Spanish accounts.

6. Modern Usage and Psychoactive Profile

In contemporary Western culture, morning-glory seeds gained notoriety during the psychedelic movement of the 1960s, primarily due to their accessibility and legality as a common garden product. Users typically ingest large quantities of the seeds, either raw or after extraction, to achieve psychoactive effects. The psychological experience generally involves visual distortions, altered emotional states, profound philosophical introspection, and changes in perception characteristic of serotonergic psychedelics. However, this experience is often marred by significant physical discomfort, which is a major distinguishing factor from pure LSA or other classic hallucinogens.

The psychoactive profile of ingested seeds is variable and often unpredictable, leading to inconsistent experiences among users. Key psychological effects reported include feelings of euphoria, deep insight, and sometimes anxiety or paranoid reactions (known as "bad trips"). The

duration of the primary psychological effects typically spans 4 to 8 hours, followed by a prolonged period of residual sedation. The variability is often attributed to both the inherent fluctuations in alkaloid concentration and the presence of physical side-effect-inducing substances that complicate the mental state during the onset of the psychedelic experience.

7. Toxicity and Safety Concerns

One of the most critical aspects distinguishing morning-glory seed ingestion from the use of purified hallucinogens is the high incidence of severe gastrointestinal distress. Users frequently report intense nausea, vomiting, abdominal cramps, and diarrhea. While these unpleasant physical symptoms are often attributed to the LSA compounds themselves, they may also be caused by other non-psychoactive but toxic alkaloids present in the seed coating, or even by fungicidal treatments commercially applied to garden seeds. Therefore, the consumption of commercially available seeds poses an inherent risk due to the unknown nature of chemical treatments they may carry.

Beyond acute physical discomfort, large doses can potentially lead to more serious symptoms, including temporary vasoconstriction (constriction of blood vessels) due to the presence of ergot alkaloids, though severe toxicity requiring medical intervention is relatively rare. Psychologically, the unpredictable dosing and the combination of physical discomfort with altered mental states increase the risk of acute anxiety, panic attacks, and transient psychosis, especially in vulnerable individuals. The lack of standardized preparation methods and the general impurity of the ingested material contribute significantly to the overall safety concerns surrounding the use of morning-glory seeds as a recreational substance.

8. Legal Status and Regulation

The legal status of morning-glory seeds is complex and often contradictory across jurisdictions. Because the seeds are widely sold as ornamental garden products, the seeds themselves are generally **unregulated** in many countries, including the United States, as long as they are not explicitly intended for human consumption or extraction. This accessibility is a primary reason for their continued use in specific subcultures.

However, the active ingredient, **Lysergic Acid Amide (LSA)**, is a controlled substance in the majority of Western nations. In the United States, LSA is classified as a **Schedule III controlled substance** under the Controlled Substances Act. This regulatory distinction means that while possessing the seeds themselves is usually legal, any process of extraction, concentration, or synthesis of the LSA compound is strictly illegal, thus creating a legal gray area for individuals who purchase the seeds with the explicit intent to consume them for psychoactive effects.

Further Reading

Ergine (Lysergic Acid Amide) - Wikipedia
Ipomoea tricolor (Morning Glory) - Wikipedia
Pharmacology and Ethnobotany of Psychoactive Morning Glory Seeds - NCBI
Multidisciplinary Association for Psychedelic Studies (MAPS)