

Mind-altering and psychoactive plants

Affect performance of brain and central and peripheral nervous system by influencing signal transduction in neurons

At low concentrations compounds may be mind-altering or stimulating; same compounds may be deadly poisons at higher concentrations

Mind-altering and psychoactive plants

Classification based on plant's effects:

- **Stimulants:** alert and stimulate the mind or activity *without* changing perception
- **Sedatives, hypnotics or narcotics:** sedating, sleep-inducing, or narcotic properties that can change perception and cause vivid dreams, euphoria

- Opium poppy (*Papaver somniferum*; Papaveraceae)
- Valerian (*Valeriana officinalis*; Valerianaceae)
- Hops (*Humulus lupulus*; Cannabaceae)
- Kava Kava (*Piper methysticum*; Piperaceae)



Mind-altering and psychoactive plants

Hallucinogens: plants with substantial influence on perception of space, time, & emotions. Illusions appear real.

Used for centuries by shamans, witches in magic and in spiritual/healing rituals.

Approximately 16 important hallucinogenic plants.

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- Wormwood (*Artemisia absinthium*; Asteraceae)



- Absinthin, thujone
- Used for pest control and abortion
- Essential oil was main ingredient in absinthe, but banned from the liqueur in early 20th century
- Vincent van Gogh was addicted to absinthe

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- Ayahuasca (*Banisteriopsis caapi*; Malpighiaceae)



- Alkaloids from bark
- Traditionally used in Brasil, Peru, & Colombia

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- Diviner's sage (*Salvia divinorum*; Lamiaceae)



- Mexican in origin
- Mind-altering diterpene compounds
- Leaves chewed or smoked

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- Deadly nightshade (*Atropa belladonna*; Solanaceae)



- Hallucinogenic and aphrodisiac (pupil widening) properties
- Applied to skin for feeling of flight
- Atropine--alkaloid
- Ancient anaesthetic



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- Marijuana (*Cannabis sativa*; Cannabaceae)



- Subspecies *indica* used as drug—only flowering twigs of female plants
- Various medicinal uses since ancient times
- Phenolic terpenoids; psychotropic effect due to tetrahydrocannabinol

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- Peyote (*Lophophora williamsii*; Cactaceae)



- Native to arid regions of S Texas and Mexico
- Active ingredient alkaloid mescaline
- Dried stems chewed for intoxication

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- Iboga (*Tabernanthe iboga*; Apocynaceae)



- Important in tropical & W Africa for rituals and initiation rites; also chewed like *Coca* leaves to suppress hunger and fatigue
- Active ingredient alkaloid ibogaine
- Dried roots chewed; roots leached in palm wine
- Interest in use as treatment for opiate addiction

TABERNANTHE IBOGA ROOTBARK

