



Jimson Weed (*Datura stramonium*)

(Street Names: Thornapple, stinkweed, locoweed, augushka, ditch weed, devil's snare, devil's seed, devil's trumpet, Korean morning glory, Jamestown weed, angel's trumpet, beelzebub's twinkie, madhatter, and crazy tea.)

September 2019

Introduction:

Jimson weed is the common name for the plant known botanically as *Datura stramonium* (family: Solanaceae). It has been used as an herbal medicine and intoxicant for years in Asia, Europe, North and South America.

Jimson weed is native to much of the U.S. (from Northeastern U.S. to Texas). The plant can reach a height of 5 feet, bears white or purple flowers and has prickly seed pods that split open in the fall.

Licit Uses:

Jimson weed has been used in traditional medicine to treat a variety of illnesses (madness, epilepsy, and depression), because of its anticholinergic and antispasmodic properties. Extracts are still used for the treatment of asthma, intestinal cramps, diarrhea and bed-wetting. The plant's main active constituents are the belladonna alkaloids atropine, hyoscyamine and hyoscyne (scopolamine), which are muscarinic anticholinergics.

Chemistry and Pharmacology:

The plant leaf typically contains 0.2-0.45% alkaloids, principally the tropine alkaloids atropine, (-)-hyoscyamine and scopolamine ((-)-hyoscyne). These alkaloids block the effects of the neurotransmitter acetylcholine, causing dry mouth, dilated pupils, high temperature (but with reduced sweating), and blurred vision. Psychological effects include confusion, euphoria, and delirium. All parts of the plant are toxic, and pleasant effects are limited. Depending upon the dose ingested, toxicity usually occurs within 30 to 60 minutes after ingestion. Initial symptoms include hallucinations, dry mucous membranes, thirst, dilated pupils, blurred vision, and difficulty speaking and swallowing. Subsequent effects may include tachycardia and urinary retention. Rarely experienced, late symptoms may include hyperthermia, respiratory arrest, and episodes of seizure. Slowing of gastrointestinal motility may prolong elimination of the toxin, thus causing symptoms to persist for 24 to 48 hours. Medical intervention should be sought immediately in cases of suspected Jimson weed overdose.

Illicit Uses:

Jimson weed is most often abused by young people in an effort to experience its purported euphoria- and delirium- producing properties.

User Population:

Jimson weed is mostly abused by younger teens and is usually only a one-time experimentation, due to the adverse and largely unpleasant effects caused by Jimson weed ingestion. Few statistics are available on use. However, The American Association of Poison Control Centers (AAPCC) National Poison Data System indicates that anticholinergic plants are involved in a number of toxic exposures that have resulted in two deaths in 2010. According to the AAPCC, there were 549 anticholinergic plant case mentions, 509 single exposures, and no deaths in 2016. No poison control exposures were reported for 2017.

Illicit Distribution:

The National Forensic Laboratory Information System (NFLIS) is a DEA database that collects scientifically verified data on analyzed drug exhibits from federal, state, and local forensic laboratories. The System to Retrieve Information from Drug Evidence (STRIDE)/STARLiMS provides information on analyzed federal exhibits from DEA forensic laboratories. Although atropine, hyoscyamine, and scopolamine data are reported, it cannot be determined whether these drugs were actually Jimson weed or seized pharmaceuticals. In 2016, there were 24 atropine reports, seven hyoscyamine reports, and one scopolamine report from federal, state and local forensic laboratories. In 2017, there was 17 atropine, four hyoscyamine reports, and no scopolamine reports from forensic laboratories. And, preliminary for 2018, there were 10 atropine reports, four hyoscyamine reports, and two scopolamine reports.

Control Status:

Neither Jimson weed nor any of its constituents are controlled under the federal Controlled Substances Act.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section; Fax 571-362-4250, Telephone 571-362-3249, or Email DPE@usdoj.gov.