ADDICTIONLINK.FI

Khat

Published 28 September 2010.

When people talk about the intoxicating substance called khat, they are referring to the young shoots and leaves of the Catha edulis Forsk tree, which belongs to the Celastraceae family of plants. Other names for khat include qat, q'at, kat, kath, gat, chat, tschat (in Ethiopia), miraa (Kenya) and murungu. Dried khat leaves are often used under the names "Abyssinian tea" or "Arabian tea". Catha edulis Forsk grows mainly in the uplands of East Africa and the Arabian peninsula.

The khat plant has been used in many religious and healing rituals from the Horn of Africa and the Middle East. As the use of khat spread when people from these areas emigrated to other countries, the significance of traditional rituals decreased, and khat became just another intoxicating substance. Partly because the use of khat has become more mundane, and the main reason for using it has become purely recreational (which some feel has led to annoying side effects), many European countries – including Finland – have decided to classify khat as a drug, even though its significance in public health terms is relatively slight.

There are estimated to be over 20 million khat users worldwide. The vast majority of khat users are men. Most people consume khat by chewing it to release its active substances into the body. Khat may also be infused in hot water or smoked. A typical portion for chewing is around 50–100 g and total daily consumption around 100–500 g. Its effects start to be felt around an hour after the person starts chewing, and they are reported to last for around 2 to 4 hours. The effects of the khat plant include stimulation, euphoria, agitation, liveliness and increased sociability. Its effects are similar to those of amphetamines, but not as strong. Adverse effects of khat include increased heart rate and arrhythmia, hyperventilation, elevated body temperature, sleeplessness, lack of appetite, aggression and anxiety. Khat users find that their thought processes are faster and clearer, and they believe that their general awareness increases, even though their concentration and judgement are in fact impaired under the influence of khat.

The composition of the substances in the khat plant are influenced by the growing conditions and climate. For example, around 44 khat plants grown in distinct sets of conditions in the Yemen have been identified, all with slightly differing combinations of chemical compounds. Fresh khat leaves may contain around 60 different cathinone-type compounds. The flavour of plants grown in different areas will vary, and this is mainly due to the tannin levels in the plants. Khat generally has a bitter taste and aromatic scent. Fresh khat leaves may also taste slightly sweet. The khat plant contains alkaloids, terpinoids, flavonoids, sterols, glycosides, tannins, amino acids, vitamins and minerals. Its most significant intoxicating compounds are cathinone, cathine and norephedrine. Of these substances, cathinone has the strongest psychoactive effect, around 7–10 times stronger than cathine (for the sake of comparison, amphetamine is around 2–10 times stronger than even cathinone). Cathinone is a highly unstable compound that begins to decompose soon after the shoots are cut, and especially when they are dried. Because of this, people try to use the khat plant when it is as fresh as possible, and the shoots are usually wrapped in banana leaves during transport to maintain their freshness. When the leaves of the khat plant are chewed, the cathinone dissolves rapidly. Research has shown that chewed leaves still retain around 9% of their plant alkaloids. Around 80% of the cathinone and over 90% of the norephedrine are dissolved in chewing.

The khat plant is only slightly toxic in small doses, but symptoms can be significant at larger doses. Khat users have been shown to have more dental problems and gum disease than normal, and users have a higher rate of cancers of the digestive system. Heavy khat use has been reported to cause cases of manic psychosis, schizophrenic psychosis, paranoid psychosis, hallucinations and depression.

Ilmari Szilvay
Chemist, Finnish Customs

References ▶

Gebissa, E.: Khat in the Horn of Africa: Historical perspectives and current trends. Journal of Ethnopharmacol. (2010), doi: 10.1016/j.jep.2010.01.063.

Pennings, E.J.M. et. al.: Risk assessment of khat use in the Netherlands: A review based on adverse health effects, prevalence, criminal involvement, and public order. Regulatory Toxicology and Pharmacology. (2008), No. 52, pp. 199-207.

Feyissa A.M. et. al.: A review of neuropharmacological properties of Khat. Progress in Neuro-Psychopharmacology & Biological Psychiatry. (2008), No. 32, pp. 1147-1166.

Yarom N. et. al.: Oral manifestations of habitual khat chewing: a case-control study. OOOOE. (2010), Volume 109, No. 6, pp. 60-66.

link