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## Short Communication

### HEALTH EFFECTS OF KHAT (*CATHA EDULIS*) PLANT: AN OVERVIEW

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#### Abstract

Khat is a leafy plant with various names in Ethiopia and the horn of Africa. Khat is a member of the Celastraceae family. The planting of Khat dates back to the past of Yemen, Ethiopia and the Horn of Africa. Khat chewing began in the seventh century and its prominence increased in most of the countries of Eastern Africa. Though Khat has a temporary positive impact on users, it is also a source of several health risks associated with organ failures. Similar findings have also been confirmed in the laboratory that cause a biphasic effect on the sexual motivation of rats. Khat leaves contain many chemical compounds such as alkaloids, terpenoids, sterols, glycosides, flavonoids, tannins and 10 amino acids, including glutamic acid, tryptophan, alanine, glycine and threonine. Some vitamins, including ascorbic acid, thiamine, riboflavin, niacin and carotene, are present in trace quantities. Calcium iron, manganese, zinc, copper and toxic metals such as lead, and cadmium and a rare amount of fluoride are components of khat. Persistent Khat consumers face severe socio-economic crises such as loss of relationships, abuse, extra-family violence, marital breakup, income attrition, domestic violence and economic dependence. Although the health harm alluded to above, some studies have suggested that Khat 's prescription be optional in medical cases such as depression, fatigue, obesity and gastric ulcers.

**Keywords:** Khat, Cathonine, obesity, gastric ulcers.



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*Catha edulis* is a leafy plant with its common name Khat throughout Ethiopia (Horn of Africa). It belongs to the family Celastraceae and is also named with different names like; Qat, Gat, qaat, Jaad in different localities in Ethiopia. The cultivation of Khat started many years back in Eastern African countries like Ethiopia and Yemen. Its consumption grows over a period of time and nowadays it's common in southern Africa countries, Madagascar, and Afghanistan. The first documented Khat shrub chewing was dated back to the seventh century. Khat consumption was recommended for alleviating hunger and fatigue, curing depression and stimulant effect on consumers. The most suitable altitude for Khat cultivation ranges from 1500 to 2100 m. In Ethiopia especially Eastern part of the country is the principal area for its cultivation and market [1,2].

Khat consumption is associated with many health risks. It impacts basically every human organ system and causes detrimental effects according to literature. Individuals who are addicted to taking this plant leaves lead to loss of appetite, excitement and euphoria because it contains an alkaloid cathinone, which is potent stimulant and has similar chemical content with amphetamine (psychostimulant). Khat highly affects the central nervous system, apart from this, it can also induce hyperactivity, logorrhea, schizophreniform, psychosis and paranoid. A manic illness with grandiose delusions and paranoia is the major psychosis due to a long term khat chewing practice accompanied by auditory hallucinations, fear and anxiety. Symptoms start to develop on khat withdrawal [3]. Its addiction may also cause myocardial infarction, coronary heart failure and ischemic conditions in the cardiovascular system [4]. Khat also affects the gastrointestinal tract. Tannins cause periodontal disease, esophagitis, stomatitis, gastritis and duodenal ulcer formation. Khat users also experience gastric emptying due to the presence of cathinone [5,6].

In addition to its use, It can also affect physiological activities causing socio-economic crisis to users. Emerging studies showed that persistent khat chewing habits may cause severe liver damage. Long term khat associated with repeated episodes of subclinical herpangitis [10]. In some cases, Khat induces diabetes by increasing blood glucose level and activation of glycogenolysis in skeletal muscles and liver due to the presence of cathinone. On the contrary other studies showed that it has no effect on fasting or postprandial serum glucose levels. However, blood glucose level increases after a few

hours of Khat consumption in diabetic subjects [7]. Khat harms the reproductive health by lowering the sex drive and decreased sperm count and finally leads to impotency. Laboratory investigations also confirm that Khat causes a biphasic effect on sexual motivation of rats. Cathinone is its principal constituent, causing Khat mediated physiological effects on reproductive health [8]. Its leaves contain many chemicals such as, alkaloids, terpenoids, sterols, glycosides, flavonoids, Tannins, and 10 amino acids including glutamic, tryptophanic acid, alanine, glycine and threonine. Certain vitamins including ascorbic acid, thiamine, riboflavin, niacin and carotene, which are found in trace quantity. Calcium iron, manganese, zinc, copper and toxic metals like lead and cadmium and a rare amount of fluoride are the constituent of elements in khat [9].

In addition to negative health impacts of Khat, it has also socio-economic effect not only on the consumers but also on the family. This impact is highly visible in the Yemeni society, where khat chewing practice deeply rooted. Male Khat users surpass the number of female users in khat consuming countries. In Ethiopia, Khat is highly valued export commodity to neighboring Djibouti and Arab countries. The number of users in Ethiopia increasing alarmingly especially in major regional cities and the capital, Addis Ababa [3]. Social crisis and withdrawal from the society due to long term Khat chewing is recorded in different studies. Among these, loss of relationships, crime, extra familial violence, marriage breakdown, family adversities, income attrition, domestic violence and economic dependence are the major consequence of persistent Khat chewing habit [10].

Irrespective of aforementioned health damages due to khat chewing, certain scholars claim that Khat can be prescribed to deal with handful of medical cases such as, treatment of depression, fatigue, obesity and gastric ulcers. In old day medicine, it has a therapeutic effect such as, suppressing asthma, cough, epidemic influenza, stomach aches diarrhea and malaria. It is also considered as a pain reliever [11]. In traditional Ethiopian medicine, tea made from a leaf of Khat use to treat swelling in the mouth and lowering blood pressure. Dried Khat leaves have an anti-infection and anti-aging quality. Studies showed the young productive generation takes a large quotient of Khat chewers which cause serious health and social problems which in turn aggravates poverty and holistic social crisis. Khat consumption will deprive time, energy and money from the most energetic youth section of the community and cause

a serious social problem among countries like Yemen. In conclusion, Addictive Khat leaves have more destructive effect on consumer's health, family, and social role as compare to its claimed benefits.

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