

KHAT...

Just another amphetamine?



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Background

- Khat use in Melbourne African communities in 1993*
- Chewed in groups

EDRS

- 5 participants (5%)
- 3 males, 2 females
 - non African
- Age 23-33 years
- \$20/capsule, swallowed
- Easy availability reported by 40%
- Not reported use in previous years



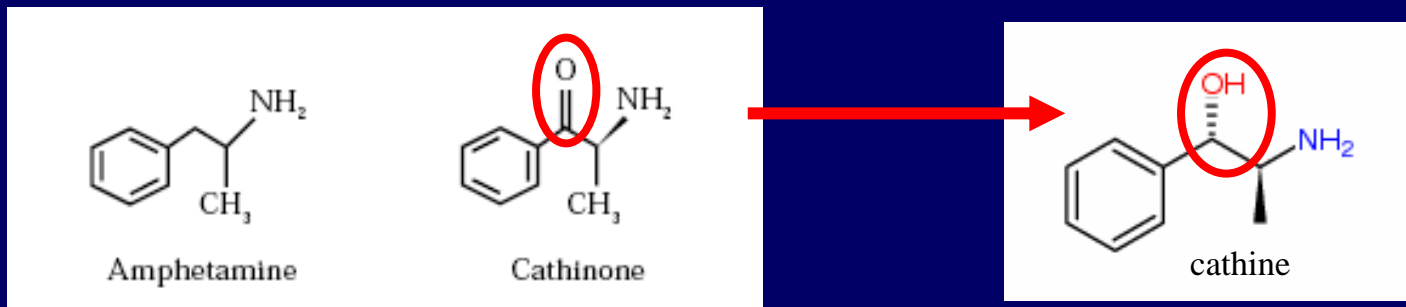
Background (2)

- *qat, q'at, kat, kath, gat, chat, tschat* (Ethiopia), *miraa* (Kenya), *murungu*
- Leaves and young shoots *Catha edulis*
- Dried leaves aka *Abyssinian tea* or *Arabian tea*.
- Ethiopia, Kenya, Yemen, Somalia, Sudan, South Africa and Madagascar but also seen in Turkistan and Afghanistan.
- Harvested in morning, kept fresh in banana leaves



Chemistry

- Cathinone and cathine
 - Cathinone (most active)
 - Cathine (unwanted effects)
- On drying, cathinone breaks down to cathine
- Cathinone is structurally related to amphetamine



Cultural norms

- Leaves/stalks slowly chewed, with cheek bulge
- Chewing in groups lasting several hours
- Drink tea, cold water and non-alcoholic drinks (e.g. cola)
- More men chew than women



Cultural norms (2)

Reasons for chewing

- Social, cultural, symbolic value
- Frequently used during religious practice
- Increases capacity to work or study
- Treatment of headache, colds, body pain fever, arthritis, depression



Pharmacokinetics* (chew)

	Cathinone	Comments
Oral mucosa absorption	59 ± 21%	<u>Chew</u> vs swallow
Time to peak blood levels	1.5-3.5 hrs	Max. effects after 15-20 mins
Metabolism	Rapid; First Pass	<u>Chew</u> vs swallow
Metabolites	Norephedrine & norpseudoephedrine. Both unchanged in urine.	Urine detection (non specific)
Half life	2-4 hrs	
? Swallowing		



Effects similar to amphetamines

Cardiovascular	Tachycardia, palpitations, hypertension, arrhythmias, vasoconstriction, myocard infarction, cerebral hemorrhage, pulmonary oedema
Respiratory	Tachypnoea, bronchitis
Gastrointestinal	Dry mouth, polydipsia, dental caries, periodontal disease, chronic gastritis, constipation, hemorrhoids, paralytic ileus, weight loss, duodenal ulcer, upper gastro-intestinal malignancy
Hepatobiliary	Fibrosis, cirrhosis
Genitourinary	Urinary retention, spermatorrhoea, spermatozoa malformations, impotence, libido change
Obstetric	Low birth weight, stillbirths, impaired lactation
Metabolic/endocrine	Hyperthermia, perspiration, hyperglycaemia
Ocular	Blurred vision, mydriasis
Central nervous system	Dizziness, impaired cognitive functioning, fine tremor, insomnia, headaches
Psychiatric	Lethargy, irritability, anorexia, psychotic reactions, depressive reactions, hallucinations



Effects (2)

- Psychosis: high and/or prolonged khat use
ie. >2 bundles/day
- Increased incidence of acute myocardial infarction
 - Independent dose-related risk factor
 - Heavy chewers having a 39-fold increased risk (95%CI 3.9-398)
- Increased risk for head and neck cancers amongst khat users reported

1. Stefan J et al Australian New Zealand Journal of Psychiatry 2005 (39);9:842 -843
2. Goldenberg D, et al. Otolaryngol Head Neck Surg 2004;131:986-993
3. Cox G et al Advances Psych Treatment 2003;9:456-63
4. Al-Motarreb A et al.. Br J Clin Pharmacol 2005;59:574-581.



Tolerance

- Difficult to assess as chewing set limits on amount consumed
 - rate of metabolism \approx rate of absorption
- Certain degree of tolerance to side effects
- Tolerance practically does not occur



Withdrawal and Dependence

- Withdrawal symptoms mild
- Few reports on dependence and habitual users do not show serious problems when stopping use.
- Cases of khat dependence successfully treated
- WHO: potential for abuse and dependence as low
 - level of abuse, public health threat not significant to warrant international control (although Cathinone is)

1. Giannini AJ et al. J Subst Abuse Treat 1992;9:379-382
2. Stefan J et al Australian and New Zealand Journal of Psychiatry 2005 (39);9:842 -843
3. Armstrong EG. J Drug Issue 2008;28(2): 631-48



Social and economic issues

- Much time can be spent on buying and chewing khat
 - Affects working hours and time with family
 - Daily costs can exceed expenditure on food
 - Children and women vulnerable

“He chewed it all night, then was too tired to go to work and he lost his job and would spend what little money we had on khat. My family broke up because of khat“¹

Melbourne context

- Use less about “culture” and “religion”
- Men problematic users

1. *The Australian* newspaper July 23rd 2008



Melbourne context

- Main issues
 - Health
 - youth and mental health
 - Family cohesion
 - chew all day
 - anger
 - sons tolerate “men stuff”
 - Financial hardship
 - ~ \$10,000 per year
- Multiple import licences



Importation

ILLEGAL

New Zealand

Canada

France

Switzerland

Sweden

Eritrea

Finland

Jordan

Denmark

Germany

Ireland

Italy

Slovenia

LEGAL*

Australia (VIC and TAS)

USA

UK

Netherlands

Cyprus

Greece

Malta

Portugal

Czech Republic

* cathinone & cathine controlled



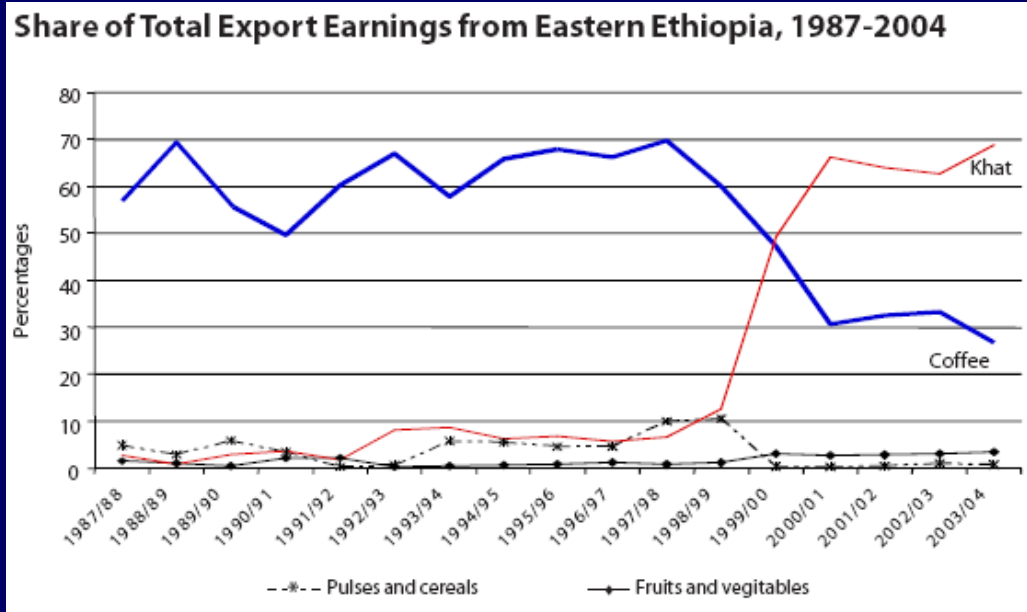
Seizures

- Seizures (2006)*
 - USA (40 tonnes)
 - Germany (16 tonnes)
 - Canada (14 tonnes)
 - Sweden (6.5 tonnes)



Impact on farmers

- Khat → income of East Africans
- Many advantages to growing khat
- ~ 30-50% income per year



Australian importation



- Licence to import PLUS
- Permit to Import
 - SINGLE import
 - Annual Permits: 5kg/mth for up to 12 months
- Any adult without a criminal record can import (VIC and TAS)*
- Cathinone and cathine under international control
- Cathinone (not KHAT)*: Schedule 9 poison (with heroin, cannabis, LSD) and cathine S4

Conclusions

- Emerging use in Melbourne
- Implications
 - ? Same to amphetamine use
 - mental health
 - ? Social and economic impact
- Passing Fad



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