WHAT GOES INTO CHEWING TOBACCO

ILLUSTRATIONS : VAIBHAV RAGHUNANDAN / CSE

The government of India has banned the sale of gutkha and other chewing tobacco products across the country. The Food Safety and Standards Authority of India (FSSAI) issued new regulations on August 1, prohibiting the use of tobacco and nicotine in any edible product.

TOBACCO-SPECIFIC N-NITROSAMINES

These group of chemicals, called TSNAs, are powerful carcinogens. They are formed during the harvesting, curing, ageing, processing and consumption of tobacco. Of the seven TSNAs identified in smokeless tobacco, N-nitrosonornicotine (NNN), 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK), N-nitrosoantabine (NAT) and N-nitrosoanabasine (NAB) are predominant in most products. They are the most powerful carcinogens known so far

EUGENOL

Extracted from certain essential oils, these chemicals numb throat and facilitate tobacco use. Eugenol, primarily used in perfumeries, can damage the liver. Its overdose may cause discharge of blood in urine, convulsions, diarrhoea, nausea, dizziness or rapid heartbeat. It can also render a person unconscious

SODIUM CARBONATE, AMMONIUM CARBONATE, AMMONIA

These chemicals increase pH levels of the products. They create an alkaline environment when ingested, thereby influencing the absorption rate of nicotine by the body. As nicotine acquires more toxic and active form in an alkaline environment, it gets readily absorbed into the bloodstream. Absorption rate determines its addiction potential

HEAVY METALS

Chewing tobacco products contain high levels of lead, arsenic, cadmium, selenium, chromium and nickel. They are toxic to humans even in minute quantities and can cause illnesses like cancer and organ failure. Lead, for instance, damages the nervous system and causes blood and brain disorder. Arsenic causes skin cancer and liver diseases

NICOTINE

Nicotine, an extremely powerful drug, is responsible for tobacco's addictive property. The way it causes addiction is similar to heroin and cocaine. It is absorbed by the body very quickly, reaching the brain within seven seconds. It stimulates the central nervous system, increasing heart beat and blood pressure

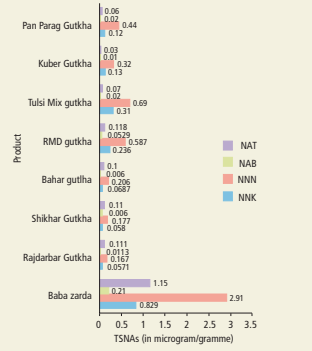
BENZO-a-PYRENE (BaP)

Present in tobacco, the chemical associates with DNA and forms DNA adducts. Adducts are pieces of DNA that bond with cancer-causing chemicals. This leads to mutation and activation of oncogene, a gene that increases the potential of cancer. Tobacco contains 10 or more such chemicals

The Gutkha Case Files

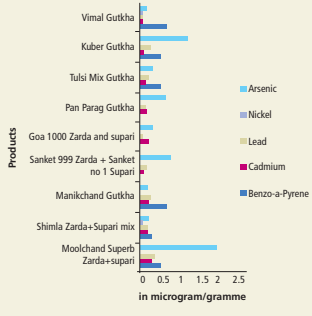
- In the early 2000s, Goa, Andhra Pradesh, Maharashtra and Tamil Nadu banned chewing tobacco. The industry challenged it in the Supreme Court, which said only the Centre can impose such a ban.
- In 2006, the Centre proposed a similar ban across the country by amending the Prevention of Food Adulteration (PFA) Act of 1954, then in force.
- The gutkha industry again contested it in various state high courts and obtained stay orders.
- The petitions against the amendment were transferred to the Supreme Court in 2009. But the government never pursued the case and the proposed ban did not see the light of the day.
- The case now has little significance with the Food Safety and Standards Regulations of 2011 replacing PFA Act.
- August 1, 2011 Gutkha has been banned in India

Carcinogenic TSNAs in leading *gutkha* brands



Source: *International Journal of Cancer*, August 2005 and *British Medical Journal*, November 2010

Loaded with heavy metals and BaPs



Source: 2004 lab report of smokeless tobacco products by the Indian Institute of Environmental Medicines, Kasturba Hospital, Mumbai

Other smokeless forms of tobacco

Gutka : It is a tobacco product containing sweeteners and flavourings
Zarda : Indian tobacco product used in paan or arecanut
Paan masala : commercial preparation containing areca nut, slaked lime, catechu and condiments, with or without tobacco
Khaini : IT is a mixture of sun dried tobacco and slaked lime
Snuff : IT is a form of smokeless tobacco and it can be either taken in dry or moist form
Gul : It is a prolysed tobacco product used in north eastern states of India
Gudhaku 'dant manjan' : paste made of tobacco and molasses
Creamy snuff : Its a tobacco paste consisting of tobbaco, clove oil, glycerine, spearmint, menthol, camphor and is sold in toothpaste tubes
Mishri : roasted powdered preparation made by baking tobacco on a hot metal plate until it is uniformly black

(source: The Centre for Tobacco Control and Health Promotion)