

2. Green gold: refining crude Miraa (*Catha edulis*) into a real green gold

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Abstract

Miraa (*Catha edulis*) is a very lucrative psychoactive crop for the farmers in lower parts of Meru county and Embu county. However, its handling is unhygienic and it's a perishable crop. Withering and drying leads to conversion of the stimulating compound; cathinone to a less stimulating compound; cathine. Therefore, it has to be transported to the market within the shortest time possible. This has led to culture of high speed driving of miraa delivery pick-ups and lorries. This is both unsafe to the miraa transporters as well as other road users leading to high records of fatal road accidents. Once in the market, the twigs are chewed raw without any value addition. This form of presentation and chewing makes it look unaesthetic, archaic and primitive. The objective of this study was to determine microbial load and evaluate the possibility of extending the shelf-life and development of various processed products from miraa while retaining the active ingredients. The miraa twigs for all the studies were purchased from the local vendors in Meru. Microbial load of miraa from different miraa vending points around Meru town, these are; Nchiru, Kianjai, Ruri, Makutano and Meru town was studied. Shelf-life of miraa was studied by storing miraa at ambient temperature, refrigerated conditions (4-8 °C) and humidity chamber. Weight loss and total phenolic compounds were monitored. Miraa was processed into unflavoured and flavoured infusion bags. Miraa sourced from Meru town exhibited the highest microbial load compared to the other vending points. This is associated to environmental contaminants and high number of handlers. Miraa stored at ambient temperature exhibited the highest weight loss and reduction in total phenolic compounds while that stored in humidity chamber showed the lowest weight loss and highest retention of phenolic compounds after 72 hours. Consumer tests preferred miraa infusion bags as hygienic with moderate stimulation effects. The results showed that it's possible to store miraa for up to 72 hours and to prepare miraa infusion bag with stimulatory effects.

Keywords: *Miraa, Catha edulis, infusion bags, Cathinone, cathine*