

UNIQUE FLAVOR PROFILES IN CHINESE CIGARETTES

BACKGROUND

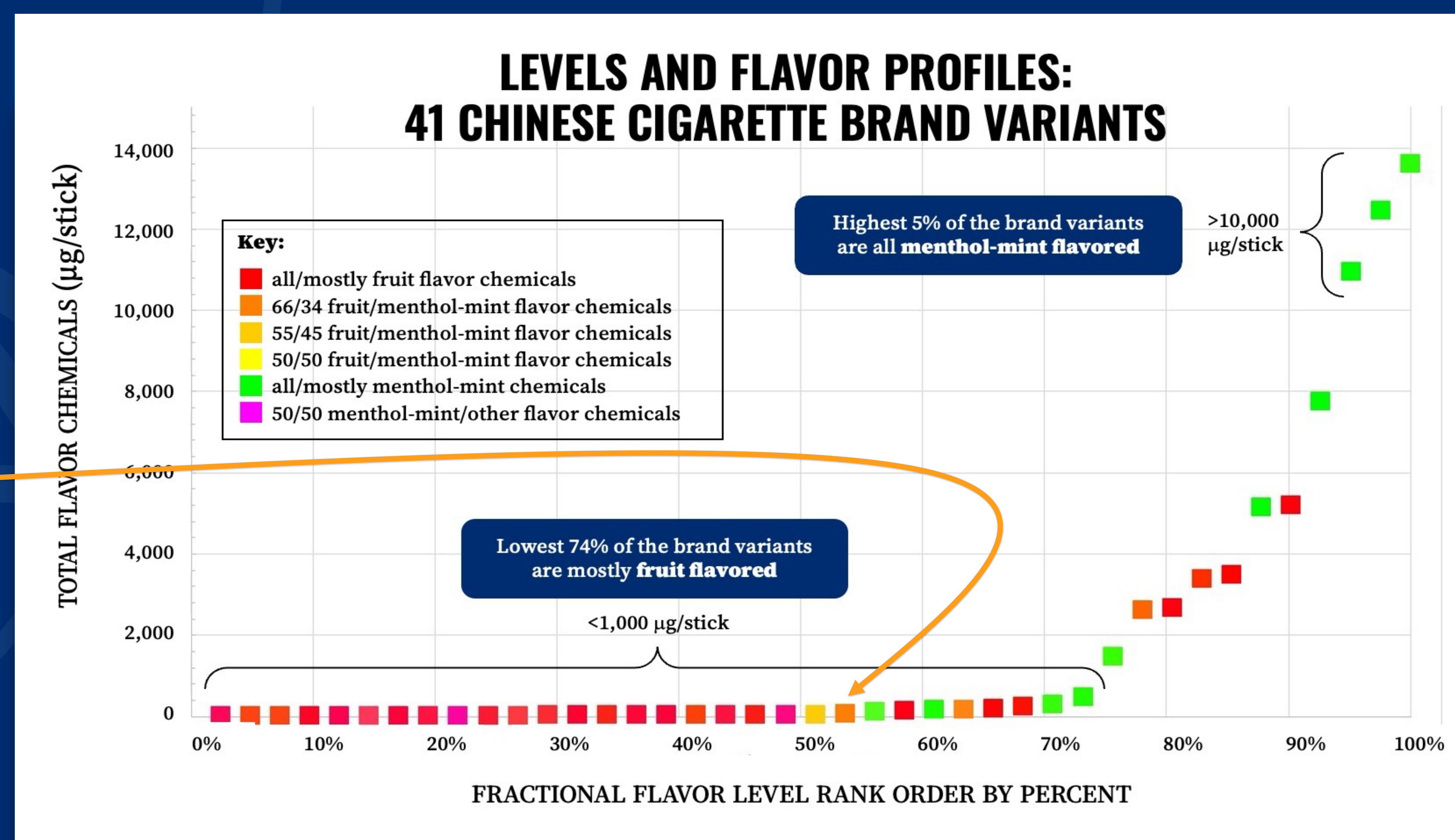
- Flavors increase product appeal
- China is the world's largest producer/consumer of cigarettes
- Nearly all cigarettes in China are manufactured by the China tobacco monopoly
- No prior studies on the nature and extent of flavor chemicals in cigarettes sold in China

METHODS

- We purchased 41 unique cigarette brand variants in China in July 2024; packs chosen based on displaying different flavors, including characterizing flavors, concept descriptors, capsules, and no flavor indicated on the pack
- Chemical analyses by gas chromatography/mass spectrometry (GC/MS) provided $\mu\text{g}/\text{stick}$ (filter+ rod) values for 180 individual target flavor chemicals
- Levels of total flavor chemicals minus triacetin (TFCs), total menthol/mint chemicals (TMMCs), total fruit flavor chemicals (TFFCs), and total other flavor chemicals (TOFCs) were calculated for each brand variant
- Non-target flavor chemicals were also detected and estimated
- Absolute values, ranges, and relationships among the brand variants were examined, along with photos of the packs

FLAVORS ADVERTISED ON PACKS OF SOME CHINESE CIGARETTE BRAND VARIANTS MAY BE OVERSTATING THE PRESENCE OF SUCH FLAVORS

TRANSLATION: "TEA"



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	Tobacco industry	E-cigarette & nicotine product industry	Pharma industry
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Competing Interests: Dr. Cohen was a paid consultant in litigation against a tobacco company.

RESULTS

- Although we purposively purchased packs that indicate flavors, the level of TFCs ($\mu\text{g}/\text{stick}$) for the majority of these brands was very low
- Only three brand variants showed TFC levels as high as observed in other countries; these were menthol/mint flavored and had flavor capsules
- Some flavor descriptors on packs were distinct from other countries, such as tea ($n=3$), ginseng ($n=1$), Chinese herb ($n=4$), other Chinese culture-inspired flavors ($n=6$)

DISCUSSION

- The use of conventional flavor chemicals was mostly much lower in this sample of brand variants from China as compared to previously analyzed samples of brand variants from other countries
- Most common flavor groupings were fruit flavor and menthol mint
 - more had predominantly fruit flavor chemicals
 - highest TFC levels were among those with predominantly menthol/mint flavor chemicals
- Of 22 brand variants with TFCs $<100 \mu\text{g}/\text{stick}$, 13 had pack descriptors implying a taste, smell or sensation, which may be overstating the presence of such flavors
- We are exploring if Chinese cigarettes use approaches other than conventional flavor chemicals; the use of Virginia flue-cured tobacco may help explain the findings

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