

Background

- Menthol is a flavoring compound commonly added to cigarettes and electronic cigarettes as it reduces the harshness and irritation experienced during smoking.
- Existing in 8 different stereoisomeric forms, the most predominately used in tobacco and electronic cigarette products is L-menthol.
- Current US regulation bans flavorings other than menthol in cigarettes and further bans are under proposal for electronic cigarettes.
- Previous studies have shown initiation and prevalence trends associated to youth who smoke mentholated cigarettes.
- Emerging heated tobacco products such as the IQOS device and accompanying HEETS include menthol flavors.
- The concentration of menthol in new tobacco and electronic products is relatively unknown.

Study Aims

- Aim 1:** Determine the concentration of menthol in IQOS HEETS among different countries where these products are sold.
- Aim 2:** Compare menthol concentration in IQOS HEETS to conventional and electronic cigarettes.

Methods

Aim 1

Mentholated HEETS were purchased in two varieties “Light” and “Dark”



Light varieties HEETS were purchased from Israel, Poland and South Africa.
Dark varieties HEETS were purchased from Poland and Korea.

Aim 2

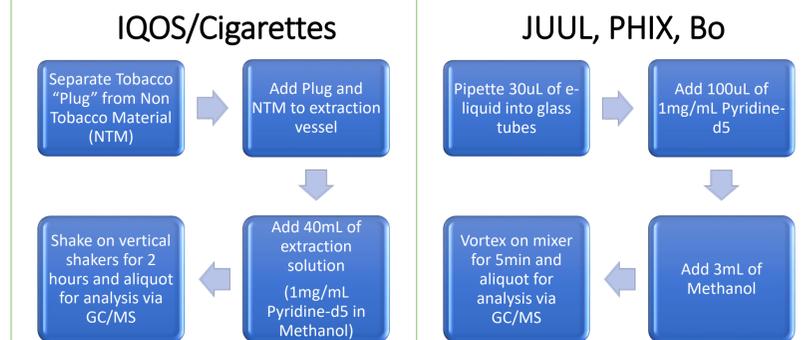
Mentholated Marlboro cigarettes were purchased in the US.



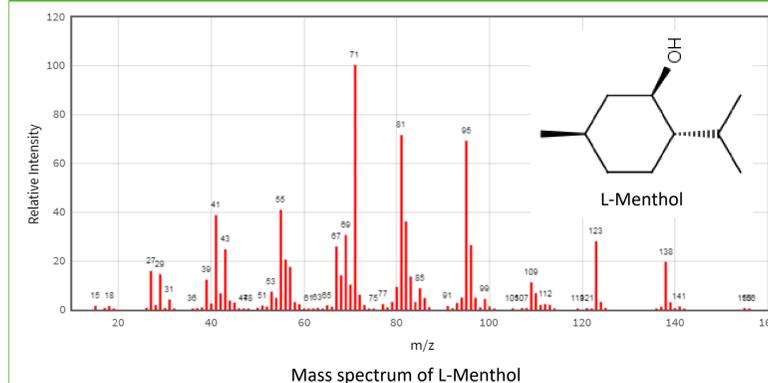
JUUL, PHIX and Bo Pods with flavors of “Classic Menthol”, “Spearmint”, “Ice Menthol” and “Icy Mint” were purchased in the US for electronic cigarettes.



Sample Preparation

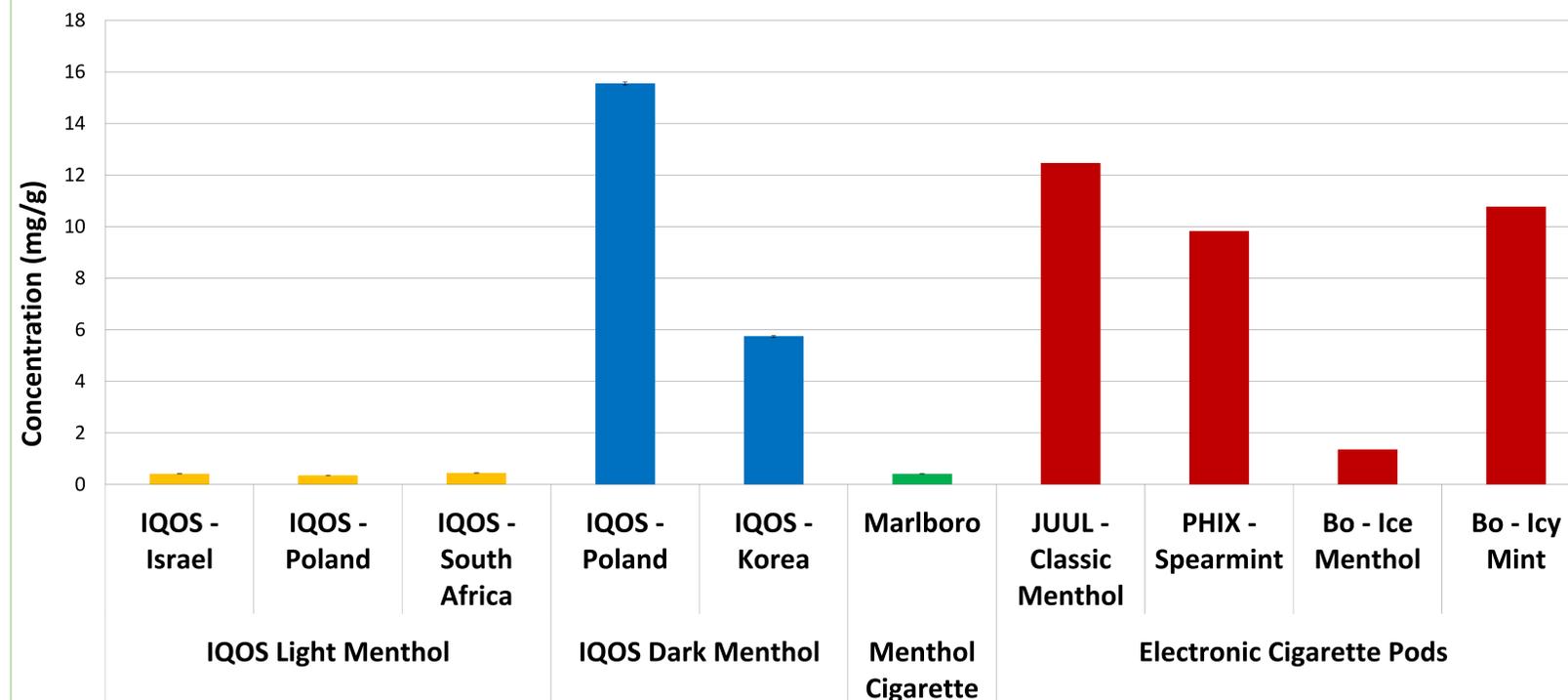


Mass Spectrum



Sample Results – Aims 1 and 2

Menthol Concentration Comparison Between IQOS, Cigarette and Electronic Cigarettes



Conclusions

- Concentrations in IQOS HEETS varied significantly between “Light” and “Dark” flavor options.
- “Light” concentrations of HEETS were consistent between countries, while “Dark” concentrations differed between countries.
- Menthol levels identified in “Dark” flavors were at least 10X higher than conventional mentholated cigarettes and were similar in concentration to electronic cigarette pod products.
- The results of this study demonstrates differences between products to assist in determining proper regulation of menthol concentration across these products.

Acknowledgments

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