Independent Scientific Research Validates Detrimental Effects of Olfactory Ethanol in Spirits Evaluation

The Scientific Approach to Enjoying Spirits Neat

NEAT- the Ultimate Spirits Glass

The Ultimate Spirits Glass

LAS VEGAS, NV, NV, UNITED STATES, December 4, 2024 /EINPresswire.com/ -- George Manska (CR&D), and Christine R Crnek (CEO), co-inventors of the NEAT glass and officers of Arsilica, Inc. a Las Vegas based sensory research Nevada "C" Corporation, announced that the world of tasting and evaluating spirits for aromas, flavors and quality is about to change for the better.

Manska said “Newly released scientific research verifies that anesthetic ethanol degrades the sense of smell by raising aroma detection thresholds and concludes that ethanol concentration can be altered through glass design. Arsilica, Inc. was an early pioneer of research in this area as summarized in the open-access, peer-reviewed MDPI Beverage Journal paper published November 22, 2018, (Technical Report—Applying Physics and Sensory Sciences to Spirits Nosing Vessel Design to Improve Evaluation Diagnostics and Drinking Enjoyment). However, Arsilica, Inc. testing related to odor detection levels was human panel-oriented and empirical due to a lack of sophisticated GC-MS equipment necessary to support scientific verification through quantitative data analysis.”

Extensive testing at the University of Illinois by Keith Cadwaller (Professor of Food Chemistry) and Dr. Zhuzhu Wang (Archer Daniels Midland Corp.), is also published in MDPI beverage Journal, November 26, 2024, (Ethanol’s Pharmacodynamic Effect on Odorant Detection in

Distilled Spirits Models), concluded several noteworthy items for which all alcohol beverage industry executives, educators, and professional evaluators should take note (quoted excerpts from the journal paper):

- "Aroma perception in distilled spirits is influenced by both the physicochemical and pharmacodynamic effects of ethanol.
- ...we demonstrated that ethanol in the vapor matrix suppressed the olfactory detection of key odorants in distilled spirits,
- This suppression effect increased as ethanol concentration rose.
- ...ethanol's pharmacodynamic effect plays the primary role in elevating ODTs (odor detection thresholds) in ethanol/water solutions, and this effect intensifies as ethanol concentration in the liquid matrix increases.
- These findings highlight the significant role of ethanol concentration in the vapor matrix and provide scientific support for practices such as diluting spirits or using specifically shaped glassware to lower ethanol headspace concentration during whiskey nosing (odor evaluation)."


The Official Spirits Glass

> Simply the best spirits glass ever created"
>
> *Anthony Dias Blue*

Commenting on the new research, Manska noted that "... it verifies that ethanol adversely affects detection thresholds, and we caution that although the NEAT glass was used in the study, no direct comparison to other vessels was made and Arsilica stands by previous independent research for direct comparison of common styles of glassware, which can be accessed at Glass-Vessel-Aroma-DA-Study-Sept-2019.pdf.

Addressing the issue of spirits dilution, aside from lowering ethanol headspace concentrations, other physical forces are at work: namely surface tension and molecular hydrogen bonding of water which profoundly affect evaporation of key character aromas, altering true aroma profiles. NEAT reduces ethanol pungency and anesthetics without affecting evaporation of other aroma/flavor compounds as does water dilution. Drinkers often add water to spirits to reduce pungency, disregarding the effect on altering aroma profile.

We at Arsilica, Inc. have long held that pharmacodynamic effects of ethanol are responsible for an unhealthy, prevalent public predilection for tiny-rimmed glasses to concentrate ethanol when drinking spirits, placing true appreciation of aromas and flavors in a distant second priority."

Ms. Crnek added “This important research has the capacity to benefit the alcohol beverage industry (1) through improving consumer education, (2) opening doors to developing new flavor expressions which can be greater appreciated by consumers, (3) enhancing consumer perception, and (4) in conjunction with the NEAT glass, raising the industry quality bar by exposing production flaws and attributes. Benefits will depend largely on the degree to which the industry supports science.

Consumers, beverage writers, industry educators, independent evaluators, and distributors should take note of Arsilica Inc’s admonition that tiny-rimmed, tulip-shaped glasses exacerbate the problem of aroma and flavor detection in spirits by concentrating volatile, pungent, anesthetic ethanol in the headspace near the rim plane and on the nose and is the major cause of olfactory fatigue in spirits. Diffusing ethanol over the rim of the glass and away from the nose has a profoundly positive effect on spirits appreciation and enjoyment and provides competition judges and evaluators with added protection against olfactory fatigue, equalizing ratings for all spirits entrants in flights of over 4 samples.

We extend congratulations and a heartfelt “Thank You” to Keith Cadwallader and Dr. Zhuzhu Wang for their significant scientific research which supports our mission of “Changing the Way the World Drinks,” by providing an important role in dispelling consumer and industry misconceptions regarding olfactory ethanol. Additionally, Prof. Cadwallader’s past definitive research has contributed much to alcohol beverage science.”

Arsilica Inc’s NEAT glass is the official judging glass of over 40 major spirits competitions annually, which provide valuable, practical information to the consumer to make informed alcohol beverage purchasing decisions. Scientific research changes everything from microwave ovens, electric vehicles, solar power, and cellphones to spirits drinking glasses.

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