

CONTENTS

The features marked with a star (*) are based entirely on material taken straight from standard research (and other Official and Therefore Always Correct) literature. Many of the other articles are genuine, too, but we don't know which ones.

ANNALS OF

IMPROBABLE RESEARCH



Special Section: Ice Cream

- 4 Ice Cream Research*
- 5 Ice Cream Headaches*
- 7 Ice Cream Impacts*
- 9 Ice Cream Stick Research*
- 11 Medical Instances of Ice Cream*
- 15 Ice Cream Multiplicity and Frequency*
- 16 Ice Cream and Happiness*

Improbable Research Reviews*

- 2 May We Recommend: Unidirectional Friendship*
- 12 Medical: Drinking Grandma, Snoring, Meditation*
- 17 Improbable Research: Distance, High Heels, Blinking*
- 19 Icky Cutesy Research: Lettuce, Lego, Dog*
- 20 Ig® and Beyond: Earwigs, Dog Food, and Ice Cream*

News & Notes

- 3 AIR Vents: Turkey and Metal Bands Confusion
- 14 Teachers' Guide
- 14 AIR Books
- 23 A Hitchhiker's Guide to Brain Science on Planet Earth
- 29 Ig Nobel Limericks: Reattachment and Dizziness*
- 30 Back Issues
- IBC Unclassified Ads

Where There's More

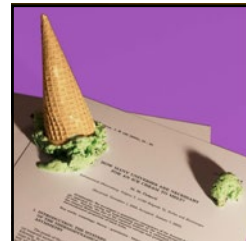
There's always new improbable — it's not what you expect! — stuff on the **Improbable Research blog** at [IMPROBABLE.COM](https://www.improbable.com)

Listen to the Improbable Research podcast!

[https://www.improbable.com/
category/the-weekly-improbable-research-podcast/](https://www.improbable.com/category/the-weekly-improbable-research-podcast/)

On the Front Cover

Ice cream melting on a paper about melting ice cream. See page 4.



On the Back Cover

A 1914 photo of Dr. Charles Campbell and a "municipal bat-roost", a structure in San Antonio, Texas — designed to help eradicate mosquitoes, as well as bolster the bats.



Some Coming Events

The Covid-19 pandemic has introduced excitingly boundless uncertainty as to whether, when, and where public activities will happen in the near future. In 2022 some will happen teledistantly.

See [IMPROBABLE.COM](https://www.improbable.com) for details of these and other events:

January 14, 2022—

Arisia, Boston, USA

January 20, 2022—

Improbable Conversation (premiere of a new series, online)

February, 2022—

AAAS Annual Meeting, Philadelphia, USA

March/April 2022

Ig Nobel Euro (and Britannia) Tour (if the pandemic allows)

September, 2022—

The 32nd First Annual Ig Nobel Prize Ceremony



ICE CREAM STICK RESEARCH

Examining the Roles of Miniature Poles

by Wade Rivers, Improbable Research staff

Care Needed in Assessing Ice Cream Sticks' Aroma Influence

"The Impact of Wood Ice Cream Sticks' Origin on the Aroma of Exposed Ice Cream Mixes," Sudarat Jiamyangyuen, Jeannine Frances Delwiche, and W. J. Harper, *Journal of Dairy Science*, vol. 85, no. 2, 2002, pp. 355-359. (Thanks to James Harkin for bringing this to our attention.) The authors, at The Ohio State University, report:

Batches of ice cream mix were exposed to the sticks and aged for 6 days at 4 degrees C and then assessed by the panelists by pairwise comparison. Findings suggest that differences in aroma of mixes that have been exposed to white birch sticks from four different geographical origins can be distinguished perceptually....

The samples of wooden sticks, obtained from the Norse Dairy Company (Columbus, OH), were made from white birch and were from four different geographical origins, including the states of Wisconsin and Maine (US), China, and British Columbia (Canada)....

Table 2 shows the more frequently used terms for describing sample differences. There, it can be seen, for example, that the mix exposed to sticks from Maine was labeled as more woody and rancid than the control mix. These labels, however, should not be given undue weight since each judge independently created his/her own terms and no standards were used. The labels used by panelists were quite varied; for example, the difference between mix aromas for a mix-pair was described by different panelists as both "cucumber" and as "dry paper." In addition, even the control mix [which contained no sticks] was described as having "woody flavor." This simply reflects the idiosyncratic use of terms by individuals, and illustrates the caution one must use when asking unaligned panelists to describe a difference.

The Impact of Wood Ice Cream Sticks' Origin on the Aroma of Exposed Ice Cream Mixes

S. Jiamyangyuen, J. F. Delwiche, and W. J. Harper
Department of Food Science and Technology,
The Ohio State University, Columbus 43210

ABSTRACT

The effect of volatile compounds in white birch sticks obtained from four different geographical locations on the aroma of ice cream mix was investigated. Sensory evaluation, (specifically, a series of warmed-up paired comparisons) was conducted on stick-exposed ice cream mixes to determine whether aroma differences in those mixes could be detected. Batches of ice cream mix were exposed to the sticks and aged for 6 d at 4°C and then assessed by the panelists by pairwise comparison. Findings suggest that differences in aroma of mixes that

2000). The potential for sticks made from different kinds of wood, or from a given wood of different origins, to contain flavor compounds that effects the perceived flavor of such ice cream novelties has not yet been investigated, although parallels have been studied by those examining the influence of barrels made from oak of different origins on the perceived flavor of wines (e.g., Aiken and Noble, 1984b; Jindra and Gallander, 1987; Leske, 1998). While there is a predominant belief that American oak and French oak barrels impart different flavors to maturing wines (e.g., Baldwin, 1995), and several studies examining flavor compounds in

Table 2. Labels of aroma differences between ice cream mixes.¹

	Control	China	Maine	Wisconsin	Canada
Burnt					1
Creamy	1	1	1	1	1
Cucumber		1	1		
Dry wood		1		1	1
Fresh wood			1		1
Green			1		
Oily		1	1		1
Old cream				1	
Oxidized		1	1	1	2
Paper, dry paper			1	1	2
Rancid		1	2		1
Sweet	3	1		1	1
Wet biscuit		1			
Woody	1	5	7	10	8
Vanilla	2	1	1	3	2

¹Number of times label was used to describe aroma difference.

Detail from the study "The Impact of Wood Ice Cream Sticks' Origin on the Aroma of Exposed Ice Cream Mixes."



Jeannine Frances Delwiche, co-author of the study "The Impact of Wood Ice Cream Sticks' Origin on the Aroma of Exposed Ice Cream Mixes." Drawing by Nan Swift.

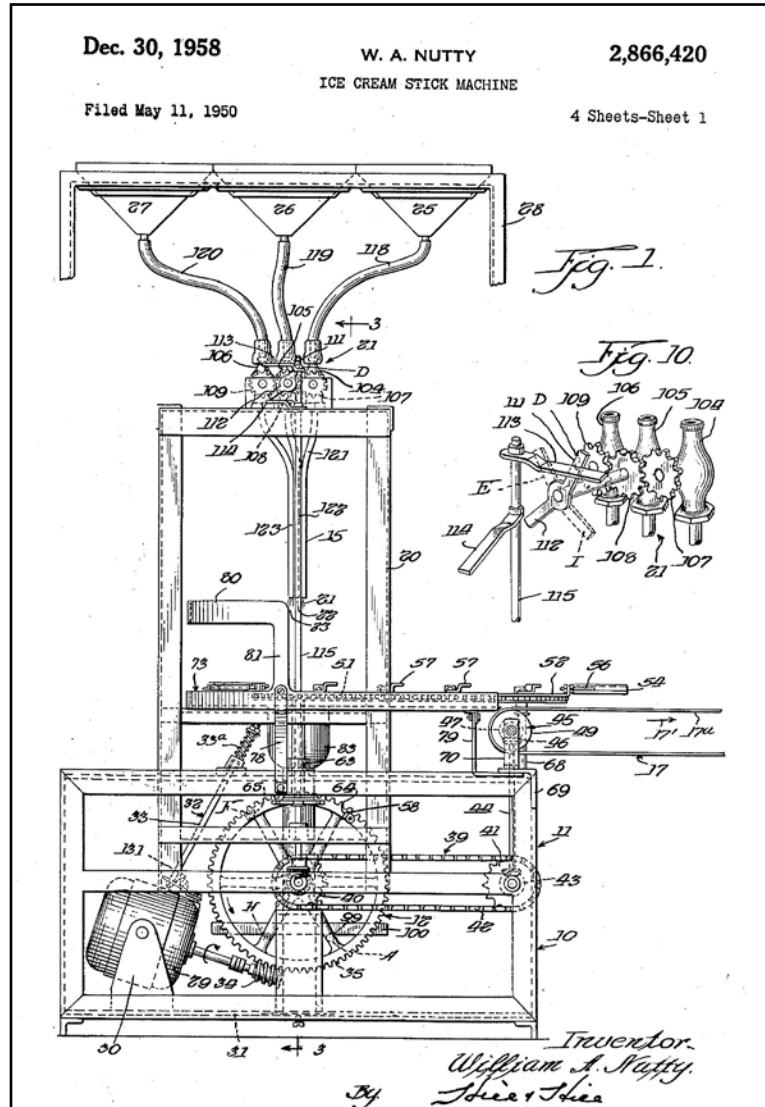
ICE CREAM STICK RESEARCH [CONTINUED]

The Nutty Ice Cream Stick Machine Patent

"Ice Cream Stick Machine," William A. Nutty, U.S. Patent 2,866,420, issued December 30, 1958. The inventor, in Chicago, Illinois, explains:

This invention relates to a method and apparatus for forming an ice cream novelty, and more particularly to an ice cream bar or edible comestible in the form of a stick composed of a number of flavors or colors of ice cream molded in a manner to produce an ornamental surface having a spiral or "barber pole" appearance....

[An] object of the invention is to provide a frozen confection in which there may be embedded a stick for ease in eating and also provided with a wrapper or container adapted to catch the drippings or fragments from the confection while it is being consumed.



Ice Cream Stick Production Tradeoff

"Energy and Economic Analysis of Ice Cream Stick Production with Brine Tank Machine," Riswanti Sigalingging and Lukman Adlin Harahap, *Researchers World*, vol. 2, no. 3, 2011. The authors, at the University of North Sumatera, Indonesia, report:

Base cost can be reduced by using less expensive ice cream ingredients [sic] but it will increase the amount of ice cream stick to be produced and sold...

ENERGY AND ECONOMIC ANALYSIS OF ICE CREAM STICK PRODUCTION WITH BRINE TANK MACHINE

Riswanti Sigalingging,

Agricultural Engineering, University of North Sumatera, USU Campus, 20155 Indonesia

Lukman Adlin Harahap,

Agricultural Engineering, University of North Sumatera, USU Campus, 20155 Indonesia

ABSTRACT

Ice cream stick is a food product so much favored by Indonesian. Generally, ice cream is categorized based upon composition, taste, colour, shape and size, and to produce it, a sum of energy is required that will affect production cost of ice cream production machine. Energy and economic cost production will help to reduce cost one stick and