Chocolate Now Wonâ€™t Melt in Your Hands

Description

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Barry Callebaut AGâ€™s Heat-Resistant Chocolate

Growing up, Frederic Depypere didnâ€™t fret much about messy chocolate. In rainy Belgium, the temperature rarely got high enough to melt a candy bar. But on a visit to steamy Shanghai five years ago, he realized that the chocolate swag from Belgiumâ€™s pavilion at the World Expo would quickly turn into mush.

> â€œI thought if we want to bring a product to countries like China or India, we need to change something,â€• said Depypere, a research and development manager at Barry Callebaut AG, the worldâ€™s leading maker of bulk chocolate.

After years of research, Depypere today says heâ€™s ready to start selling chocolate that melts in the mouth, not in the hands. He says his team can make chocolate that can remain solid at temperatures as high as 38 degrees Celsius (100.4 degrees Fahrenheit) before melting â€“ about 4 degrees warmer than most chocolate today.

Depypere needs to hurry. Many of Callebautâ€™s customers â€“ the likes of Nestle SA, Hershey Co. and Mondelez International Inc. â€“ are working on similar projects as the candy industry seeks to find a way to unlock billions in potential profits in countries with warmer climates.
Middle East

The chocolate market in Asia-Pacific, Latin America, and the Middle East and Africa will grow more than 50 percent to $48 billion by 2019, versus 15 percent expansion to $74 billion in Western Europe and North America, researcher Euromonitor predicts.

> â€œIn five to ten years, heat-resistant chocolate will be more important than premium chocolate in the Middle East and Africa, as they donâ€™t have the necessary infrastructure to keep it cool,â€• said Jack Skelly, a Euromonitor analyst in London.

While Callebaut is leading the race, Nestle is close behind. The maker of the KitKat and Cailler brands says it has developed chocolate that maintains its shape up to 40 degrees, and that products could hit shelves within three years.

> â€œAlmost since the dawn of chocolate, companies have been working on products you can eat wherever you want, whenever you want, no matter the temperature,â€• said Karen Skillicorn, head of the chocolate department at a Nestle research center in York, England. On a visit to the facilityâ€™s kitchen, she said, â€œWeâ€™ve never been so close.â€•

Hershey has been researching the issue since World War II and could use a profit boost â€“ it last week said earnings would fall short of targets. The company says it can start selling products that melt at 37.8 degrees and have the texture of classic chocolate within two years.

Mondelez, maker of Oreo cookies and Milka bars, has filed a patent saying it can keep chocolate from melting at temperatures as high as 50 degrees. Filings from Mars Inc., which makes M&Mâ€™s and Snickers, show it has tested products at 38 degrees. Mondelez and Mars declined to comment.

Chocolate rabbits are placed under a heat lamp at the Barry Callebaut AG R&D center in Wieze, Belgium.
Barry Callebaut AG

â€˜Like a Candleâ€™

The road to more durable chocolate has taken decades. Since 1970, more than 90 patents related to the topic have been filed, and at least half of them date back longer than two decades. For chocolatiers, the main problem has been making the stuff taste and feel like, well, chocolate.

> â€œOne of the popular routes has been to modify the fat system so it melts at a higher temperature, but if the fat doesnâ€™t melt in the mouth, youâ€™re left with solid fat and it tastes like a candle,â€• said Steve Whitehouse, a scientist with Nestleâ€™s research operation in York.

Another challenge is that raising the melting point can result in a quick thickening of the chocolate mass, making it impossible to pump through pipelines or mold it into shape.
Heat Resisting Chocolate

Nestle says it has overcome both hurdles by adding citrus fruit fiber particles that soak up glycerol before being added to the chocolate. That preserves taste and texture and allows time to process the mass before it becomes too thick to handle.

Callebaut started working on the problem nine years ago with a project it called â€œVolcano,â€• which produced chocolate with a melting point of 55 degrees. But it pulled the plug on that initiative in 2012 because the taste wasnâ€™t good enough, Depypere said in the first-floor cafeteria in Callebautâ€™s factory in the Belgian town of Wieze, the only place in the facility where the scent of chocolate doesnâ€™t dominate.

The company recently relaunched the research with the lower heat goal in a new project dubbed â€œHot.â€• To improve the taste and texture, Callebaut made some subtle shifts to the processing and ingredients, Depypere said, though he declined to provide details.

While the efforts are starting to pay off, Depypere said his team is considering a version with an even higher melting point â€“ though the efforts face the same challenges of flavor and mouthfeel.

> â€œChocolate is a mystic food,â€• Depypere said. â€œThereâ€™s still lots to be solved.â€•

Corrine Gretler

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Date Created
June 25, 2015
Author
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