

Short Communication

The demystifying cocoa sector in Thailand: Bean to bar chocolate as a functional food

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Abstract

Cocoa is the raw ingredient of the world's most preferable products. A mass number of consumers preferably purchases top chocolate brands from either Europe or America. In contrast, a limited number of consumers perceive domestically produced chocolate in Thailand. According to the literature, dark chocolate is polyphenol-rich food derived from the seeds of *Theobroma cacao* L. The benefit of chocolate is increasingly studied because of the high volume of antioxidant properties in vitro of some polyphenol constituents. The objectives of the research are to analyze bean-to-bar chocolate in Thailand in conjunction with Thai consumer perception towards Thai chocolate as a functional food and to consequently provide nutritional benefits of Thai chocolate. Based upon qualitative and quantitative research, the rich of antioxidant flavonoid in cocoa is considered as a highly beneficial antioxidant for human health when consumed in moderation. The research is designed by producing and evaluating chocolate made from raw cocoa beans from Chiang Mai and Nakornsrihammarat, Thailand in GMP laboratory and CAPPIC laboratory of National Pingtung University of Science and Technology throughout the chemical analysis method and the texture and colour analysis method. Besides, the researcher evaluates the perceptions of 10 Thai bean-to-bar chocolate makers and 400 Thai consumers throughout the Hedonic sensory evaluation and the questionnaires analysing by the ATLAS. The results of the research, therefore, elaborate nutritional benefits of Thai chocolate to Thai consumers increasingly perceive as a functional food. And significantly, the researcher promotes Thai bean-to-bar chocolate as an alternative chocolate product among the world's top chocolate brands.

Keywords: *Theobroma cacao*, food, chocolate, functional food, questionnaire

Back Ground: This significant examination plans to add to the cocoa area's assortment of information and give a strong proof base to test basic presumptions and convictions. The examination covers issues, for example, family unit socioeconomics, food security and nourishment, and yield decisions and harvest broadening. Explicit to cocoa, the examination explores why families de-

velop cocoa, and investigations the significant parts of cocoa creation and promoting. Family riches, pay and destitution is likewise evaluated, and further disaggregated in a bunch investigation. The investigation likewise takes a gender at intra-family elements which are united in a sexual orientation chapter. Fieldwork was done in the cocoa developing locales of Ghana and Côte d'Ivoire in late 2016 and mid 2017. An arbitrary example of roughly 1500 families reviews were gathered in every nation. This was supplemented by 37 center gathering conversations in each country. To advance the area's admittance to information and information, the scientists have made the dataset accessible for download on this page. We support different scientists, governments, organizations and NGOs to utilize it in their own projects and strategy improvement.

The future of cocoa: Cocoa is the crude element of a portion of the world's most cherished items. We nearly can't envision a world without cocoa. However in 2014, a progression of media reports posed us to defy the inquiry: 'Is the world running out of chocolate?'. The media based their articles¹ on admonitions by enormous chocolate producers, for example, Barry Callebaut and Mars, who had communicated worries about a possibly genuine deficiency of cocoa by 2020. Accordingly, the Worldwide Cocoa Organization (ICCO) felt constrained to give an assertion underlining that feelings of dread of a cocoa lack were 'exaggerated in the extreme'. This end up being the situation when sequential creation diminishes in 2014/15 and 2015/16 were trailed by an enormous 18% inversion in 2016/17. This creation increment was because of positive climate conditions coming about because of the mellow harmattan winds inside the West African locale. The 2016/17 increment brought about an oversupply of cocoa on the world market and a drop in costs. The public authority of Côte d'Ivoire had to cut the value it ensured ranchers by 36%, which had genuine ramifications for some cocoa ranchers living as of now in burdened circumstances. Luckily, the public authority of Ghana was ready to stand firm on its ensured costs on this event.

Improving cocoa productivity:

Improving efficiency is a typical way to deal with bringing earnings up in cocoa family units. It is broadly acknowledged that most cocoa ranches are a long way from accomplishing expected yields due to poor agronomic practices, and low, wrong or inconvenient utilization of information sources. Along these lines, preparing on great agronomic practices (GAP) is frequently observed as an approach to cure the circumstance. Backers for boosting rancher yields additionally consider this to be one approach to slow or invert deforestation. All things considered, this methodology is now and again scrutinized because of the frustrating accomplishment of results at scale. This is mostly because of the way that mediations frequently plan to arrive at an enormous number

of ranchers as opposed to working all the more seriously with a more modest number. A few entertainers have additionally communicated worries that improving efficiency could add to oversupply later on, coming about lower costs. In our investigation, we devote a section to portraying current.

Research approach:

On ranch: This component included investigating all parts of cocoa creation and promoting. We additionally tried to comprehend the overall significance of cocoa in connection to other 'contending crops', and the part of harvest enhancement inside the cultivating framework. Between ranch: This component included breaking down family socioeconomics, and disaggregating families in the example concurring certain qualities. (For instance, cocoa versus non-cocoa families; male headed versus female headed families, and so forth) Inside family:

This included comprehension intra-family elements, especially male and female parts on the homestead and in the family unit, just as admittance to resources and dynamic force. A significant thought was to make the cocoa family unit (as opposed to the singular rancher) our unit of investigation. This is on the grounds that we perceive that family unit individuals regularly take on various parts in cocoa creation and advertising, too as various parts in other pay creating exercises, all of which add to family prosperity.

Research phases:

Phase 1 - desk research and methodological development

Phase 2 - Fieldwork and data collection

Phase 3 - Analysis and reporting

Food and Nutrition Security:

Numerous examinations have featured the way that food instability is a commonly occasional wonder. The fundamental cocoa collect from around October to January is related with a period where families have moderately more cash and relative food security. Be that as it may, in the year, around June and July, cocoa family units face more serious danger of turning out to be food insecure. In our family unit overview, respondents were asked food utilization inquiries to better see how examples changed consistently. All respondents were asked, 'The number of suppers did you normally devour every day both at home and on the ranch?' for every long stretch of the year. This inquiry must be generally straightforward on the grounds that respondents needed to review this data from the past year. We surely acknowledge that these fundamental review questions on family food utilization don't give an itemized portrayal of 'food security'. While, there are a few respectable food security review modules ac-

cessible, they all had certain disadvantages for this examination. For instance, some include a since quite a while ago arrangement of questions that we were unable to oblige because of time constraints,⁷ while others limit their review period to the previous four weeks,⁸ as opposed to the previous year. One clear impediment of our methodology is that we have not caught how the serving size or nature of family unit suppers changes consistently. Family units may decide to keep burning-through three suppers for each day as the year progressed, yet could decrease

Introduction: Numerous examinations have featured the way that food instability is a commonly occasional wonder. The fundamental cocoa collect from around October to January is related with a period where families have moderately more cash and relative food security. Be that as it may, in the year, around June and July, cocoa family units face more serious danger of turning out to be food insecure. In our family unit overview, respondents were asked food utilization inquiries to better see how examples changed consistently. All respondents were asked, 'The number of suppers did you normally devour every day both at home and on the ranch?' for every long stretch of the year. This inquiry must be generally straightforward on the grounds that respondents needed to review this data from the past year. We surely acknowledge that these fundamental review questions on family food utilization don't give an itemized portrayal of 'food security'. While, there are a few respectable food security review modules accessible, they all had certain disadvantages for this examination. For instance, some include a since quite a while ago arrangement of questions that we were unable to oblige because of time constraints, while others limit their review period to the previous four weeks,⁸ as opposed to the previous year. One clear impediment of our methodology is that we have not caught how the serving size or nature of family unit suppers changes consistently. Family units may decide to keep burning-through three suppers for each day as the year progressed, yet could decrease.

History of chocolate

Cocoa and chocolate are devoured by people for 1,000 of years. For Mayan individuals, cocoa units were images of fruitfulness and life and food of divine beings. Chocolate alludes to numerous crude and prepared nourishments created from the seed (bean) of the *Theobroma cacao* tree found in Mexico and Central and South America. It was first recorded around 1100 BC. The Aztecs promotion Mayans made a chocolate that had a harsh taste. They utilized chocolate for formal purposed and accepted that chocolate had restorative properties. They too accepted, that utilization of cocoa gave shrewdness and force and they utilized cocoa as money. Aztecs and Mayans made dull, unsweetened beverage dependent on cocoa, which was called xocoatl. They spiced it with bean stew peppers and added corn feast yet sugar was obscure to them (Al-

brecht et al., 2010). In 1492 Columbus brought cocoa beans from America to Europe, yet around then they were not fascinating to Europeans. Hernan Cortez in 1528 carried cocoa to Spain alongside mystery of making xocoatl. In Spain, sugar, vanilla, nutmeg, cloves, allspice and cinnamon were added to the first formula and Spanish fly without further ado made advancement in Europe. Notwithstanding, chocolate bars were not created until the eighteenth century, when mechanical factories for pressing cocoa margarine from cocoa mass were created, Milk chocolate was first created in the nineteenth century by Daniel Peter and Henry Nestle. Rodolphe Lindt created a measure called conching, which empowered arrangement of smooth chocolate fragrance and Milton Hershey was a pioneer of large scale manufacturing of reasonable chocolate bars (Sawicka et al., 2015). As the centuries progressed, chocolate was considered as a Spanish fly and was utilized to treat weakness and the runs.

Conclusion: Thirty-three % of reviewed devour chocolate a few times each week, around 40 % burn-through chocolate milk, more than a big part of reviewed devour at one time about 50 grams of chocolate, 60% burn-through chocolate bar. The practical food knows by around 40% of reviewed, more than a big part of respondents know, that chocolate is a useful food. Practical nourishments offer extraordinary potential to improve wellbeing and additionally help forestall certain sicknesses, when taken as a component of a reasonable eating routine and solid way of life. The subject of wellbeing claims is turning out to be progressively significance and there is need of expansive agreement for administrative system in the EU, that will ensure customers, advance reasonable exchange and energize item development in the food business. The examination openings in sustenance to investigate the connection between a food or a food segment and an improved condition of wellbeing and prosperity or decrease of sickness present the best test for researchers presently and later on. Correspondence of medical advantages to buyers is likewise of basic significance, with the goal that they have the information to settle on educated options about the nourishments they eat and appreciate. Up to now there are a couple dozen food with modifier „functional”. Progressing examination of functional food is extending steadily. The chocolate as ordinary endorsed utilitarian food was exhibited in our investigation truth be told. Moreover, this article looks to add to disprove the legend about the hurtfulness of this food.