

## Quick Reference Guide: Basic Search

### Search screen

To use Basic Search on FSTA, be sure that you have selected FSTA here.

### Web of Science



Tools ▾ Searches and alerts ▾ Search History Marked Lis

Web of Science will undergo scheduled maintenance from May 21, 2020 at 11:00 GMT to May 21, 2020 at 23:00 GMT. During this time, access may be intermittent. We apologize for any inconvenience.

Select a database FSTA<sup>®</sup> - the food science resource ▾

Basic Search Advanced Search

Example: biograd\* packag

Topic

Search Search tips

Type your search term here.

Your default option for searching is **Topic**, which searches for your term in records' title, abstract and subject heading fields. If you pull down the menu, you also have 15 other search field choices, like **Title**, **Author/Inventor**, **Publication Name**, or **Patent Assignee**.

Timespan  
All years (1969 - 2020)

More settings ▾

You can limit to a date range.



### Build a search

Connect different forms of your term with the Boolean search operator **OR**.

Type each concept in a separate row.

Add rows here.

Connect each concept with the search operator **AND**.

By using truncation (\*) and typing "3D print\*" as a phrase inside quotation marks, you will get results with 3D print, 3D prints, 3D printer, 3D printed and 3D printing.

Basic Search Advanced Search

chocolate OR cocoa

Topic

And viscos\* OR texture OR rheolog\*

Topic

And "3d print\*"

Topic

Search Search tips

+ Add row | Rese

# The results

Sort results by Publication Date (default), Times Cited, Usage Count, Relevance, Recently Added, First Author, or Source Title.

You can export records to reference management software, email, etc, or save up to 50 Marked Lists containing up to 50,000 records per list.

Click **Create Alert** to save your search statement as a search alert.

**Refine Results** lets you search within your result list or filter by limits, including document type, open access, and FSTA Section.

Web of Science

Search

Results: 8  
(from FSTA - the food science resource)

You searched for: TOPIC: (chocolate OR cocoa) AND TOPIC: (viscos\* OR texture OR rheolog\*) AND TOPIC: ("3d print\*") ...More

Create an alert

Refine Results

"3d print" in results for...

Filter results by:

Open Access (2)

Refine

Publication Years

2019 (5)  
2018 (2)  
2016 (1)

more options / values...

Refine

FSTA Sections

COCOA CHOCOLATE AND COCOA BUTTER (6)  
COCOA CHOCOLATE AND SUGAR CONFECTIONERY PRODUCTS (6)  
ENGINEERING (1)

Sort by: Date Times Cited Usage Count Relevance More

Select Page Export... Add to Marked List

Analyze Results

1. **Texture-modified 3D printed dark chocolate: sensory evaluation and consumer perception study.**  
By: Mantihal, S.; Sangeeta Prakash; Bhesh Bhandari  
Journal of Texture Studies Volume: 50 Issue: 5 Pages: 386-399 Published: 2019  
Full Text from Publisher Free Published Article From Repository View Abstract
2. **Textural modification of 3D printed dark chocolate by varying internal infill structure.**  
By: Mantihal, S.; Sangeeta Prakash; Bhesh Bhandari  
Food Research International Volume: 121 Pages: 648-657 Published: 2019  
Full Text from Publisher View Abstract
3. **Study on the 3D printing formability of chocolate with Chinese medicine functional factor.**  
By: Jun-yong Xiao; Mi-qin Zhan; Ren-huai Cong; et al.  
Science and Technology of Food Industry Issue: No. 5 Pages: 77-82 Published: 2019  
View Abstract
4. **Effect of additives on thermal, rheological and tribological properties of 3D printed dark chocolate.**  
By: Mantihal, S.; Sangeeta Prakash; Godoi, F. C.; et al.  
Food Research International Volume: 119 Pages: 161-169 Published: 2019  
Full Text from Publisher View Abstract
5. **Development of a high-precision viscous chocolate printer utilizing electrostatic inkjet printing.**  
By: Suzuki, Y.; Takagishi, K.; Umezu, S.  
Journal of Food Process Engineering Volume: 42 Issue: 1 Pages: e12934 Published: 2019  
Free Full Text from Publisher View Abstract

Times Cited: 0 (from Web of Science Core Collection) Usage Count

Times Cited: 6 (from Web of Science Core Collection) Usage Count

Times Cited: 0 (from Web of Science Core Collection) Usage Count

Times Cited: 2 (from Web of Science Core Collection) Usage Count

Times Cited: 1 (from Web of Science Core Collection) Usage Count

## Textural modification of 3D printed dark chocolate by varying internal infill structure.

By: Mantihal, S.; Sangeeta Prakash; Bhesh Bhandari  
View Web of Science ResearcherID and ORCID (provided by Clarivate Analytics)

Food Research International  
Volume: 121 Pages: 648-657  
DOI: 10.1016/j.foodres.2018.12.034  
Published: 2019  
Document Type: Journal Article

**Abstract**  
The study aimed to investigate the effect of varying the internal infill structure of 3D printed chocolate by varying the infill construction. Three intricate infill patterns designed were star, Hilbert curve and honeycomb with infill percentage of 5%, 30%, 60% and 100%. Cadbury dark chocolate (Choc-1) and Callebaut bittersweet dark chocolate (Choc-2) powders were used by incorporating magnesium stearate (Mg-ST) and plant sterol (PS) powders as food additives. Printing parameters were set up with an extrusion temperature of 32°C, nozzle size of 0.78mm and printing speed of 70mm/s. The results showed that voids in printed samples of all three pattern with 5% infill density ranged from 60.82.1% to 72.21.8%. Voids in samples with 30% infill density ranged from 20.92.1% to 49.23.6% while with 60% infill density it ranged from 11.62.3% to 19.44.2%. Additionally, star and honeycomb infill pattern produced the most stable and tough structure at 60% infill as indicated by a higher normal force (N) to break the printed sample. Moreover, even at 100% infill percentage, 3D printed chocolate were found less hard (ranged from 82.22.2N to 92.21.3N) as compared to cast samples (>110N) in the snap test. The results obtained in this study provide a useful insight in creating various internal structures of 3D printed dark chocolate with different textural characteristic and physical stability. All rights reserved, Elsevier.

### Keywords

**Keywords:** CHOCOLATE POWDERS; CHOCOLATE PRODUCTS; DARK CHOCOLATE; DENSITY; DRIED FOODS; EXTRUSION; INSTANT FOODS; MOULDING; PLANTS; SATURATED FATTY ACIDS; STABILITY; STEARIC ACID; STEROLS; STRUCTURE; TEXTURE

### Author Information

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### Categories / Classification

Research Areas: Food Science & Technology (provided by Clarivate Analytics)  
FSTA Section and Subsection: Cocoa, chocolate and sugar confectionery products : Cocoa, chocolate and cocoa butter

See more data fields

### Citation Network

In Web of Science Core Collection

7

Times Cited

Create Citation Alert

All Times Cited Counts

7 in All Databases

See more counts

34

Cited References

View Related Records

Most recently cited by:

Xu, Kejing; Zhang, Min; Bhandari, Bhesh. Effect of Novel Ultrasonic- Microwave Combined Pretreatment on the Quality of 3D Printed Wheat Starch-Papaya System. FOOD BIOPHYSICS (2020)  
Feng, Chuyuan; Zhang, Min; Bhandari, Bhesh; et al. Use of potato processing by-product: Effects on the 3D printing characteristics of the yam and the texture of air-fried yam snacks. LWT-FOOD SCIENCE AND TECHNOLOGY (2020)

The Citation Network displays the total number of times a paper was cited by other papers indexed in the Web of Science Core Collection, as well as the references in the article itself.

Scan the abstract and keywords of promising records to find additional search terms to modify and improve your search.