



CAST Issue Paper 69

Food Biofortification—Reaping the Benefits of Science to Overcome Hidden Hunger

Released October 14, 2020

Release/Rollout

The CAST Issue Paper, “Food Biofortification—Reaping the Benefits of Science to Overcome

Hidden Hunger,” was released on October 14, 2020. On October 15, task force chair, Dr. Howarth Bouis, and a [panel of six authors](#) presented highlights of the paper followed by a Q&A session with the audience. There were 470 registrants for the webinar.

- [Webinar Video](#)—339 views through YouTube and 72 views through [Facebook](#) as of October 14, 2022
- [Link to commentary, Ag quickCAST, student study guide, webinar video, and Q&A.](#)

In-kind Contributions: 270 volunteer hours; \$19,980 monetary value

Press Release (results two weeks after release)

- Distributed through [Constant Contact](#), [PRWeb](#), and the [CAST website](#).
- Press release went to 10,114 e-contacts resulting in 5,095 opens
- 109 views of the press release from the CAST website as of March 29, 2021.
- The press release through PRWeb resulted in 3,148 views and reached 928 targeted influencers (journalists/bloggers).
- 104 media outlets posted the press release. A sampling of sites where the press release was picked up: Biotech Blog, Growing America, Journal of Commercial Biotechnology, RFD-TV, News Break, NAAE Communities of Practice, One News Page (U.S. and Global Editions), Ask.com, Seed Daily, Oowler, and many daily news and business journal sites, and regional news channels (ABC, CBS, CW, FOX, NBC)

Follow-On Activities

International Potato Center

<https://cipotato.org/eventwfp2020/food-biofortification-reaping-benefits-science-overcome-hidden-hunger/>

International Plant Biotechnology Outreach, *Biotechnology, Biofortification and Healthy Diets: Food Systems' interventions for Enhanced Nutrition*, The Plant B + B Online Café, May 20 2021, <https://ipbo.vib-ugent.be/en/biofortification> Prof. Dominique Van Der Straeten presenter

Paper Distribution

Paper Distribution (print and online access from CAST website) 2 years after release –2,202

Indirect Paper Distribution

Ghent University Library

<https://biblio.ugent.be/publication/8681290>

Global Alliance for Improved Nutrition

<https://www.gainhealth.org/second-global-summit-food-fortification-launch-event>

HarvestZinc

<https://www.harvestzinc.org/publications>

GrowingAmerica

<https://www.growingamerica.com/news/2020/10/food-biofortification-reaping-benefits-science-overcome-hidden-hunger>

International Food Policy Research Institute

<https://www.ifpri.org/publication/food-biofortification-reaping-benefits-science-overcome-hidden-hunger-paper-series-need>

Nourishing Africa

<https://nourishingafrica.com/data/search-filter? token=6vig5YPJ2kniunngUZxICkNAbOLz4nLwyboM7wq5&name=Food+Biofortification%3A+Reaping+the+Benefits+of+Science+to+Overcome+Hidden+Hunger>

ResearchGate

https://www.researchgate.net/publication/344785114_Food_Biofortification_-_Reaping_the_Benefits_of_Science_to_Overcome_Hidden_Hunger_A_paper_in_the_series_on_The_Need_for_Agricultural_Innovation_to_Sustainably_Feed_the_World_by_2050

Sweet Potato Knowledge Portal

https://www.sweetpotatoknowledge.org/wp-content/uploads/2020/10/CAST_IP69_Biofortification-2020-OCTOBER.pdf

CropLife International <https://biotechbenefits.croplife.org/paper/food-biofortification-reaping-the-benefits-of-science-to-overcome-hidden-hunger/>

Foreign, Commonwealth & Development Office, United Kingdom <https://www.gov.uk/research-for-development-outputs/food-biofortification-reaping-the-benefits-of-science-to-overcome-hidden-hunger>

Policy Commons, <https://policycommons.net/artifacts/1693485/publication-impacts-report/2425133/>

Academia.edu

This report last updated 10/14/2022.

https://www.academia.edu/78742786/Food_Biofortification_Reaping_the_Benefits_of_Science_to_Overcome_Hidden_Hunger_A_paper_in_the_series_on_The_Need_for_Agricultural_Innovation_to_Sustainably_Feed_the_World_by_2050_chapter_1_Justification_for_Biofortification

African Food Changemakers

<https://nourishingafrica.com/data/food-biofortification-reaping-the-benefits-of-science-to-overcome-hidden-hunger-a-paper-in-the-series-on-the-need-for-agricultural-innovations-to-sustainably-feed-the-world-by-2050>

Articles and Web Mentions

HarvestPlus, *In New Paper, Experts Detail Progress and Potential of Biofortification*, October 16, 2020

<https://www.harvestplus.org/knowledge-market/in-the-news/new-paper-experts-detail-progress-and-potential-biofortification>

National Grain and Feed Association, *Biofortified foods can help fight hunger, says latest CAST paper*, October 16, 2020.

<https://www.ngfa.org/newsletter/biofortified-foods-can-help-fight-hunger-says-latest-cast-paper/>

Purdue University College of Agriculture, *Agronomy E-News*, November 2020, page 3,

<https://ag.purdue.edu/agry/Documents/November%202020.pdf>

Citations

United Nations Food Systems Summit, *Action Track 1: Ensure Access to Safe and Nutritious Food for All – Potential Game Changing and Systemic Solutions: An Initial Compilation*, February 19, 2021, p. 48,

https://www.un.org/sites/un2.un.org/files/unfss_at1_synthesis_propositions_round1.pdf

Molecular Plant, *Regulation of Plant Vitamin Metabolism: Backbone of Biofortification for the Alleviation of Hidden Hunger*, Volume 14, Issue 1, 4 January 2021, Pages 40-60, Ling Jiang, Simon Strobbe, Dominique Van Der Straeten, Chunyi Zhang <https://www.sciencedirect.com/science/article/abs/pii/S1674205220303981>

Frontiers in Nutrition, Policy and Practice Reviews, *Critical review of indicators, metrics, methods, and tools for monitoring and evaluation of biofortification programs at scale*, Volume 9 – October 13, 2022, Roda-Moya S., Francesca M. Giudici, Bho Mudyahoto, Ekin Birol, Stephen R. Kodish, Carl Lachat, Taymara C. Abreu, Alida Meise-Boonstra, Karin H. van het Hof, Inge D. Brouwer, Saskia Osendarp, Edith J.M. Feskens

<https://www.frontiersin.org/articles/10.3389/fnut.2022.963748/full>

Frontiers in Plant Science, *Transition From Targeted Breeding to Mainstreaming of Biofortification Traits in Crop Improvement Programs*, September 14, 2021, Parminder S. Virk, Meike S. Andersson, Jairo Arcos, Mahalingam Govindaraj, and Wolfgang H. Pfeiffer

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8477801/>

Springer Open Access, *Scaling Readiness of Biofortified Root, Tuber, and Banana Crops for Africa: Value Creation for Inclusive Outcomes*, 2022, 513 pages, Low, J., Ball, A.M., Ilona, P., Ekesa, B., Heck, S. and Pfeiffer, W.,

<https://library.oapen.org/bitstream/handle/20.500.12657/54016/978-3-030-92022-7.pdf?sequence=1#page=535>

PLOS One, *Characterization of cassava ORANGE proteins and their capability to increase provitamin A carotenoids accumulation*, January 7, 2022, Jaramillo, A.M., Satiago, S., Chavarriaga-Aguirre, P., Castillo, D.K., Gkanogiannis, A., Lopez, Lavallo, L.A.B., Arciniegas, J.P., Sun, T. Li, L., Welsch, R., Boy, E., Alvarez, D.

<https://doi.org/10.1371/journal.pone.0262412>

This report last updated 10/14/2022.

Global Food Security, *From Golden Rice to Golden Diets: How to turn its recent approval into practice*, Volume 32, March, 2022, DeSteur, H., Stein, A.J., Demont, M.,
<https://www.sciencedirect.com/science/article/pii/S2211912421001048>

Nutrients, *Review of the Impact Pathways of Biofortified Foods and Food Products*, Special Issue: Sustainable Food Systems for Nutrition in Low Resource Settings, March 12, 2022, Huey, S.L., Krisher, J.T., Bhargava, A., Friesen, V., Konieczynski, E.M., Mbuya, M.N.N., Mehta, N.H., Montesrosas, E., Nyangaresi, A., Mehta, S.
<https://www.mdpi.com/2072-6643/14/6/1200/htm>

Clinical Nutrition, *A randomized trial of iron- and zinc-biofortified pearl millet-based complementary feeding in children aged 12 to 18 months living in urban slums*, Volume 41, Issue 4, pages 937-947, April 1, 2022, Mehta, S., Huey, S.L., Ghugre, P.S., Potdar, R.D., Venkatramanan, D., Krisher, J.T., Ruth, C.J., Chopra, H.V., Thorat, A., Thakker, V., Johnson, L., Powis, L., Raveendran, Y., Haas, J.D., Finkelstein, J.L., Udipi, S. on behalf of Project Sabal,
[https://www.clinicalnutritionjournal.com/article/S0261-5614\(22\)00065-6/fulltext](https://www.clinicalnutritionjournal.com/article/S0261-5614(22)00065-6/fulltext)

Food and Nutrition Bulletin, *Transforming Nigerian Food Systems Through Their Backbones: Lessons from a Decade of Staple Crop Biofortification Programming*, August 25, 2022, Birol, Ekin, Foley, Jennifer, Ilona, Paul, Herrington, Caitlin, Misra, Rewa, Mudyahoto, Bho, Pfeiffer, Wolfgang, Tedla Diressie, Michael
<https://journals.sagepub.com/doi/abs/10.1177/03795721221117361?ai=1gvoi&mi=3ricys&af=R>

Springer Nature, *Root, Tuber and Banana food System Innovations: Value for Inclusive Outcomes*, 2022, Tiele, Graham, Friedmann, Michael, Campos, Hugo, Polar, Vivian, Bentley, Jeffer W.
<https://books.google.com/books?id=CLVoEAAAQBAJ&pg=PA550&lpg=PA550&dq=%22Food+Biofortification%E2%80%94Reaping+the+Benefits+of+Science+to+Overcome+Hidden+Hunger%22&source=bl&ots=63bJW5ZyZ0&sig=ACfU3U2bMNjVCvqhoSfg6WA1OAX9G6jt9g&hl=en&sa=X&ved=2ahUKewjwi5vvg5v9AhX5kokEHSpdASQ4HhDoAXoECAIQAw#v=onepage&q=%22Food%20Biofortification%E2%80%94Reaping%20the%20Benefits%20of%20Science%20to%20Overcome%20Hidden%20Hunger%22&f=false>

Plant Physiology, *Metabolic engineering provides insight into the regulation of thiamin biosynthesis in plants*, Volume 186, Issue 4, August 2021, Simon Strobbe, Jana Verstraete, Christophe Stove, Dominique Van Der Straeten, <https://academic.oup.com/plphys/article/186/4/1832/6263869>

Social Media

Twitter—

@CASTagScience, August 12, 2020
<https://twitter.com/CASTagScience/status/1293545288762830849>
1 retweet

@CASTagScience, September 2, 2020
<https://twitter.com/CASTagScience/status/1301159213855465472>
3 retweets, 4 likes

@DiasporaNews123, September 28, 2020
<https://twitter.com/DiasporaNews123/status/1310474339809193984>

@CASTagScience, October 3, 2020
<https://twitter.com/CASTagScience/status/1312392316213231619>

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<https://twitter.com/HarvestPlus/status/1313465894291615745>

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<https://twitter.com/CASTagScience/status/1314566729536806918>

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<https://www.facebook.com/CASTagScience/photos/a.477568575671277/3457705310990907>

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<https://www.facebook.com/CASTagScience/videos/935978113556219>

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<https://www.facebook.com/CASTagScience/photos/a.477568575671277/3461580493936722>

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LinkedIn—

CAST, September 2, 2020

<https://www.linkedin.com/feed/update/urn:li:activity:6706924929968832513>

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<https://www.linkedin.com/feed/update/urn:li:activity:6722141428354441216>

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