Fortification and Biofortification to Meet Children's Nutritional Needs

What we're learning about fortification and biofortification from the GCNF Global Survey of School Meal Programs©

The nutrition community has focused on the first 1,000 days of life as a critical window for establishing health in children. In order to sustain those investments we must continue to provide good nutrition to children and adolescents as they continue to develop physically and mentally. In April, 1.5 billion children were out of school due to the pandemic, 370 million of those children were not receiving the school meals they depend on. It is critical now more than ever to reach school-age children with nutritious meals as a way to address their hunger and nutritional needs and ensure children return to school when it is safe.

Meeting Child Nutrition Objectives through Fortification and Biofortification

Of the countries surveyed in the Global Survey of School Meal Programs©, 87 percent of school meal programs cite the goal of improving students' nutrition among their objectives. **Sixty-eight percent of programs serve fortified foods on the school menu**; common fortified food items include oil, salt, grains/cereals (including rice), and corn-soy blend or biscuits. The most common micronutrients added to these fortified food items include iron, iodine, vitamin A, zinc, and folic acid, among other nutrients. In Bhutan, for example, schools that participate in school meal programs are supplied with fortified oil and rice.

Prevalence of nutrition-related components of school meal programs

	Nutrition Objective	Fortified foods	Biofortified Foods
Low income	90	68	15
Lower middle income	85	69	6
Upper middle income	76	74	28
High Income	94	53	0
All	87	68	12

Among the respondents GCNF surveyed, 12% of the programs spread across 11 countries serve biofortified foods, including vitamin A-rich orange flesh sweet potatoes in Gambia, Malawi, Mozambique, and Nigeria. HarvestPlus is working to integrate biofortified crops in school meals in even more countries including Zimbabwe, Uganda, Honduras, Nicaragua, Malawi, India, Mozambique, El Salvador, and Rwanda.

Creating a more nutritious food system through school meals

A diverse menu, containing food items with essential micro- and macronutrients, is an important component of any school feeding program. School menus tend to include a greater diversity of food items when food is purchased domestically. Yet low income countries are more reliant on in-kind food often resulting in lower levels of school food diversity.

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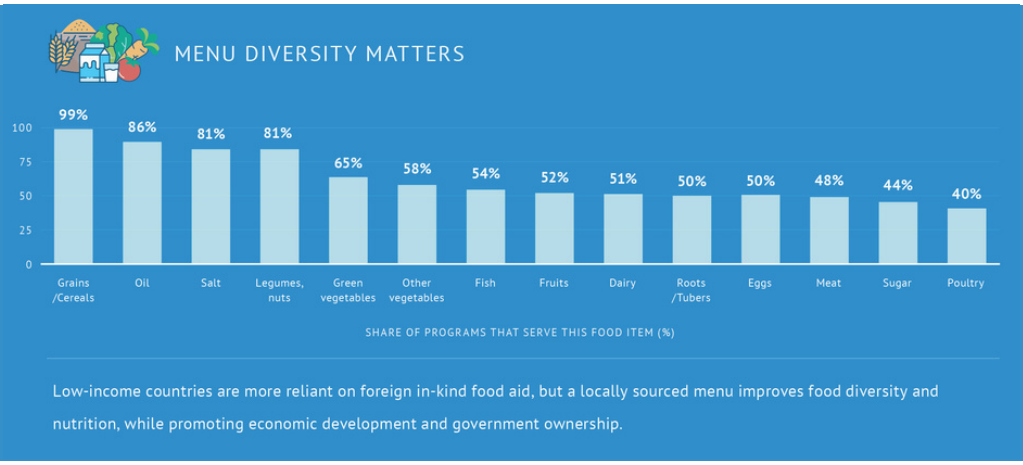
Where food availability is low and access to affordable, nutritious foods is limited, fortification and nutrient enriched foods through biofortification strategies can provide improved nourishment by ensuring children are getting the vitamins and minerals needed to thrive. Investing in fortification and biofortification strategies in local agricultural supply chains can improve diversity and nutrition in local food systems. When school feeding programs encourage these investments, it can improve child nutrition, bolster nutrition-sensitive agricultural and economic development, and reduce reliance on foreign food aid.



Evidence suggests that well-designed school feeding programs can promote macro and micronutrient adequacy in childrens' diets, leading to enhanced nutrition and health, decreased morbidity and increased learning capacities. Furthermore, a World Bank report indicates that fortified school meals or snacks consistently reduce anemia prevalence and improve micronutrient status. Studies in the Journal of Nutrition have demonstrated that adolescent school attendees consuming biofortified high iron pearl millet improved their cognitive performance, and night blindness decreased among school children in Zambia consuming high vitamin A maize.

DSM's COVID-19 Response

DSM is working closely with long-standing partner World Food Program to provide increased access to fortified rice to school children.

Additionally, DSM partner Africa Improved Foods (AIF) donated Nutritious Nootri products for Rwandan households with children under five that have lost employment during the pandemic. AIF is also partnering with WorldVision Rwanda in their COVID-19 response to provide AIF Super Cereal to 31,600 children and 19,600 women.

HarvestPlus Zimbabwe

In Zimbabwe, HarvestPlus donated 400 metric tons of maize and bean seed, and will continue to provide free seed packs to primary school feeding programs who are also working with agricultural extension workers using schools as learning sites. The vitamin A maize and iron rich beans grown on-site are consumed by students as part of the Government's campaign to ensure each primary school serves one hot meal per day. The organization is working with the Ministry of Primary and Secondary Education to include biofortified crops in the National School Feeding Program.

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Participate in the upcoming survey in Summer 2021.
The full report will be released in early Spring 2021.
survey.gcnf.org

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