

Household-level coverage of Iron-biofortified beans in the Northern Province of Rwanda

Theogene Dusingizimana, PhD¹, Andrew Jones, PhD², Hilda Vasanthakaalam, PhD¹; Tomas Kjellqvist, PhD³

¹University of Rwanda, ²University of Michigan, ³Södertörn University

Introduction

- Biofortification of staple foods is a sustainable and cost-effective approach to address micronutrient deficiencies in developing countries [1].
- Rwanda was identified as top-priority for investment in iron-biofortified bean breeding and delivery due to the importance of bean production and consumption.
- There are currently more than 10 IBBs varieties in Rwanda, and the first varieties were delivered to farmers in 2011.
- However, there is limited information on coverage of biofortified foods that can be used to assess the performance of biofortification programs and to guide decisions related to biofortification program implementation.

Objectives

- To assess household coverage of iron-biofortified beans (IBBs) in rural areas of the Northern Province of Rwanda.

Methods

- This study used cross-sectional data from 535 households. Semi-structured questionnaire was used to collect data.
- Methods previously used to assess coverage in large-scale food fortification programs [2] were applied to measure coverage indicators for IBBs.

Coverage indicators measured were:

- (1) consumption of beans in any form
- (2) awareness of IBBs
- (3) availability of IBBs
- (4) consumption of IBBs (ever), and
- (5) consumption of IBBs (current).

- Additional qualitative data were collected to explore farmers' perspectives on factors influencing coverage of IBBs.

Results (Quantitative)

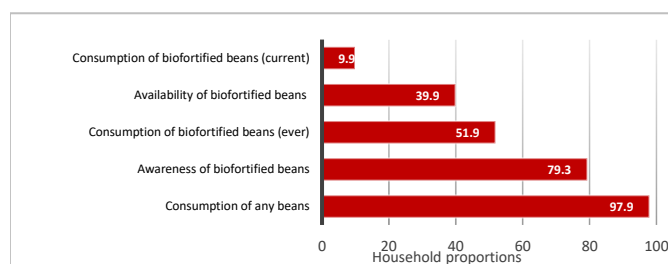


Figure 1: Indicators of coverage of iron-biofortified beans in Northern Province, Rwanda.

Table 2: Biofortification status of collected bean samples.

		Bean type as determined by breeding specialist		
		Biofortified	Non-biofortified	Total
Biofortification status as presumed by household respondents.	Biofortified	27 (8.4%)	9 (2.8%)	36 (11.2%)
	Non-biofortified	49 (15.3%)	104 (32.4%)	153 (47.7%)
	Don't know	53 (16.2%)	80 (24.9%)	132 (41.1%)
	Total	128 (39.9%)	193 (60.1%)	321 (100%)

Results (Qualitative)

- Farmers grow IBBs and conventional beans concurrently, but with different objectives.
- Conventional beans are grown mainly for household consumption.
- IBBs are grown mainly for income generation.

Conclusions

- Despite relatively high awareness of iron-biofortified beans, few households currently consume IBBs. Also, many participants were unable to identify IBBs beans correctly.
- Increased awareness alone may not be sufficient to incentivize households to substitute cheaper, conventional beans for IBBs.
- Factors hindering the consumption of IBBs should be identified and addressed.

References:

- [1] Nestel, P., Bouis, H. E., Meenakshi, J. V., & Pfeiffer, W. (2006). Biofortification of staple food crops. *The Journal of Nutrition*, 136(4), 1064–1067.
- [2] Aaron, G. J., Friesen, V. M., Jungjohann, S., Garrett, G. S., Neufeld, L. M., & Myatt, M. (2017). Coverage of Large-Scale Food Fortification of Edible Oil, Wheat Flour, and Maize Flour Varies Greatly by Vehicle and Country but Is Consistently Lower among the Most Vulnerable: Results from Coverage Surveys in 8 Countries. *The Journal of Nutrition*, 147(5), 984S–994S.

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