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"Global food security and food safety:
The role of universities"

How to Fill Harvest and Nutrient ´Gaps´ through Locally Available Tree Foods?

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Abstract

Tree foods including fruits, leafy vegetables, nuts, seeds and edible oils present locally available and traditionally used foods to diversify staple diets. To better incorporate these foods into food systems and thereby addressing challenges of seasonal food availability, the World Agroforestry Centre developed a methodology for selecting ecologically-suitable and nutritionally-valuable food tree species for production on farms. In addition to filling harvest 'gaps' the portfolio addresses certain nutrient 'gaps' in a site. To do so, food tree species identified in harvest calendars are mapped with nutritional data. Food composition data play a key role in linking agriculture to nutrition, but unfortunately information on the nutrient composition of many species, particularly indigenous and wild species, are absent due to a lack of research. This could mean that food tree species rich in micronutrients are overlooked in development planning, projects and policies. Hence, as a first step food composition data from scientific articles and food composition tables were compiled, standardised and aggregated, following international standards on food composition from FAO/INFOODS. Thereafter, mean values of recommended nutrient intake data (RNI) were calculated based on FAO/WHO references. In a third step, the percentage of RNI of iron, zinc, folate, vitamin C and vitamin A provided by species were calculated. To simplify the nutrient content information for the portfolios, fruits and vegetables were scored for whether they are a high source (+++), source (++) or low source (+) for the respective nutrient. The thresholds are based on FAO/WHO food labelling standards and own adaptions. Information on the nutrient content of the selected foods will be available in an open access database and in a simplified form to support decision-making by key stakeholders in the selection of ecologically suitable and nutritionally value tree species for cultivation. The development of fruit tree portfolios by using locally suitable species and their nutrient content information and seasonal availability is a sustainable food based approach to address micronutrient deficiencies by increasing the quality of local diets. Moreover, the food composition data compiled for food tree species provides a necessary repository for prioritising domestication programs to mainstream available nutritious foods.

Keywords: Food composition, food tree species, food-based approach, hunger gap, indigenous species, micronutrients, nutrition, seasonality

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