

Towards Viksit Bharat@2047 Technological Innovations and Policy Options for Eastern Region



ICAR Research Complex for Eastern Region

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Towards Viksit Bharat@2047: Technological Innovations and Policy Options for Eastern Region

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Nutri-garden Model Addressing Anaemia and Hypovitaminosis Challenges of Eastern India

Period of development: 2019 to 2023

Developers:

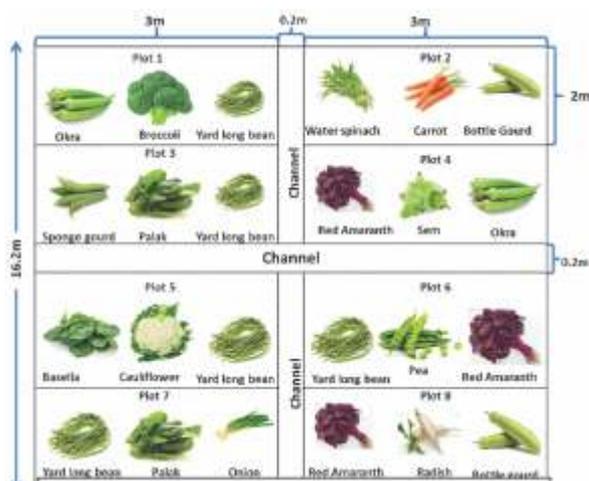
Kumari Shubha, Akram Ahmed, TK Koley, Anirban Mukherjee, Abhishek Kumar, Sanjeev Kumar, Shivani, Ujjwal Kumar, Anup Das

Background:

The latest National Family Health Survey (NFHS-5) has brought to light a concerning trend-there is a noticeable increase in both maternal and child malnutrition in Eastern region particularly Bihar. In our earlier survey we found the problem of mal nutrition prevalence in some part of Bihar and West Bengal. This emphasizes the pressing need for effective interventions for poor households. In this context, Nutri-garden emerges as a low-cost viable solution for Vitamin and minerals

Description of the technology:

A 100 m² Vegetable Based Nutrigarden model focusing on Iron and Vitamin rich vegetable sources was developed and validated at ICAR-RCER, Patna during 2019-2023. Standardization and validation of the model to fulfill the ICMR recommendations of vegetable intake (200g fruit vegetables, 50g leafy vegetables and 50g root vegetables) was considered. In Pea-Red Amaranth-YLB cropping pattern was found nutrition wise highest energy (23892 Kcal), protein (1849.9 g) and fat (143.2 g). However, highest Vitamin A (1876380 IU) and Vitamin C (20888 mg) was found in Carrot-Bottle gourd-



**Model showing combination of vegetables
for dietary diversity**

Water spinach and Cauliflower-YLB-Poi cropping pattern respectively. The cropping pattern Pea- Red Amaranth -YLB was found highest in iron, and Vitamin B particularly thiamine (58.55 mg), riboflavin (68.52 mg) and niacin (653.7 mg). This model was developed for backyard of house for 4 member households. The validation and dissemination of the Nutrigarden Model involved a three-year field study (2021-2023) across three agroclimatic zones in Bihar (North-West Alluvial Plane (East Champaran), North-East Alluvial Plane (Katihar), and South Alluvial Plane (Patna, Buxar) as well as West Bengal.



Vegetable based Nutri-garden established at ICAR-RCER, Patna

Commercial potential:

The technology can be offered through consultancy services as master trainer to the State Agricultural Department, development agencies, NGOs, SHGs and farmers' groups.

Impact:

Nutritional Security, Cost Savings, Health Benefits Women Empowerment Climate Resilience

Agro-ecoregions suitability:

Rural households of Eastern Indian States

Reference :

K Shubha, A Mukherjee, U Kumar, TK Koley, AK Choudhary. 2022. Development of Climate Resilient Year-Round Home Garden Model for Improving Food and Nutritional Security of Resource-Poor Households in Eastern India. Proceedings of the International Symposium Southeast Asia Vegetable 2021 (SEAVEG 2021) pp. 258-269. https://doi.org/10.2991/978-94-6463-028-2_28