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“Agricultural development within the rural-urban continuum”

## Sprouts and Microgreens – An Option to Enhance Food and Nutrition Security in the Rural-Urban Continuum

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### Abstract

Legume crops and indigenous vegetables are suitable as cash crops and as a source of readily available daily sustenance in home or kitchen gardens, and therefore play a major role in AVRDC — The World Vegetable Center’s mission to alleviate poverty and malnutrition in the developing world by increasing the production and consumption of nutritious and health-promoting vegetables. Lower income groups for whom indigenous vegetables are more affordable and available than other global vegetables or animal meat products will benefit greatly through increased availability and utilisation of indigenous vegetables. Phytonutrient levels differ according to the growth stages of the plant and often decrease from the seedling (sprout or microgreen) to the fully developed stage. Sprouts and microgreens can easily be grown in urban or peri-urban settings where land is often a limiting factor, either by specialised vegetable farmers or the consumers themselves. Given their short growth cycle, sprouts and microgreens can be grown without soil and without external inputs like fertilisers and pesticides, around or inside residential areas. No breeding is required as seedlings from semi-domesticated or even wild species typically have high levels of phytonutrients, good flavor, and tender texture. Several crops or different varieties of the same crop can be mixed to create attractive combinations of textures, flavors, and colours. As sprouts and microgreens are usually consumed raw, there is no loss or degradation of heat-sensitive micronutrients through food processing. AVRDC is currently studying potential differences in the levels of essential micronutrients and consumer preferences of selected legume crops (mungbean, soybean) and indigenous vegetables (amaranth, mustard, radish) at different growth and consumption stages. The phytonutrient content will be assessed at three plant development and consumption stages for indigenous vegetables: (a) sprouts, (b) microgreens, and (c) fully grown plants at the stage when they are normally consumed as vegetables. The comparison will include landraces from the genebank and modern cultivars available commercially. This may expand the use of genebank materials for specialty produce such as sprouts and microgreens with great potential for improved food and nutrition security of people living in urban and peri-urban settings.

**Keywords:** Food and nutrition security, indigenous vegetables, legume crops, microgreens, rural urban continuum, sprouts