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Indigenous and minor vegetables of North-East India

North Eastern region of India comprising all the 8 states falls under the Indo-Burma hotspot due to its rich biodiversity. A vast range of horticultural diversity is also found in this region under natural habitats as well as under cultivation. More than 92 species belonging to 27 families of diverged local vegetables are found in this region which represents for centre of diversity for many other vegetables. Majority of the population of this region is ethnic tribes whose livelihood is based on farming system such as integrated farming system (IFS), Jhum (Shifting cultivation) and mixed farming. Unique specialty of food habit of this region, apart from meet-fish based foods, is locally grown traditional vegetables and various wild-semi wild plants-based foods. Moreover, all these minor traditional vegetables are rich source of vitamins and minerals and provide nutritional security for the small and marginal households as well as for the below poverty level populations. Many of these minor vegetables are also used for ethno-medicinal purposes by the local traditional healers.

Diversity of indigenous vegetables in North East India

Indo Burma centre of origin under which North eastern region falls is home centre of origin for vegetables namely eggplant, cucumber, radish, taro, yam, cowpea, turmeric and black pepper. This region is rich in diversity for many other vegetables especially cucurbits namely bottle gourd, pumpkin, ash gourd, sweety gourd, spine gourd, chayote, pointed gourd, tuber crops namely taro, swamp taro, greater and lesser yams, elephant foot yams etc; solanaceous namely chilli and brinjal; leguminous namely hyacinth bean, velvet bean; leafy vegetable like amaranthus and bulbous crops onion and garlic. There are many other crops namely bamboo and jute originated

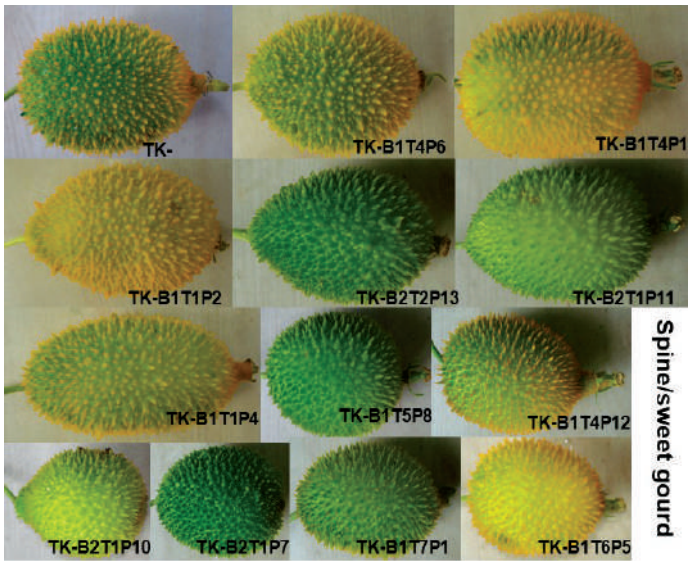
Local variability of brinjal in NEH region

in this region and extensively used as ethnic vegetables. Moreover, not only these crops, north eastern parts of India is also known for many diversified plant species which are consumed by the local communities and these foods share a major part of family nutrition.

Solanaceous: North east region is one of the important centre for a greater range of egg plant and other solanaceous wild as well as cultivated germplasm with variability in plant characters, fruit shape, size and colour. Many of the indigenous genotypes are totally resistant to wilt disease. Some of the common genotypes cultivated are brinjal (*Solanum melongena*), Turkey berry (*Solanum torvum*), poison berry (*Solanum indicum*), bitter brinjal (*Solanum gilo*), African eggplant (*Solanum macrocarpon*), thorny nightshade (*Solanum xanthcarpum*), kotahi begena (*Solanum khasianum*), spiral nightshade (*Solanum spirale*), sticky nightshade (*Solanum sisymbrifolium*), bhekuri (*Solanum kurzii*) and scarlet eggplant (*Solanum aethiopicum*). Some of the local varieties and landraces namely Singhnath, Bholanath, Laffa and RCMBL2 are commercially important. Various species diversities of chilli found in NEH region are, common hot pepper (*C. annum*), bird pepper (*C. annum* L. var. *avicular*), sweet pepper (*C. annum* var. *grossum*), Indonesian red chilli (*C. annum* var.

Table 1. Tuber crops found under natural habitats and cultivation in NEH region

Crop name	Scientific name	Acridity	Edible parts used
Elephant foot yam	*Amorphophallus paeoniifolius* (Dennst.) Nicolson	Low	Tuber and petiole
Wild elephant foot yam	*Amorphophallus bulbifer* (Roxb.) Blume., *A. sylvaticus* (Roxb.) Kunrth. and *A. muelleri* Blume	Petiole low to medium, but tubers are extremely acrid	Immature bud sprouts, petiole and tuber
Greater yam	*Dioscorea alata* L.	Low to medium	Tuber
Lesser yam	*D. esculenta* (Lour.) Burkill	Low to medium	Tuber
Aerial yam	*D. bulbifera* L.	Low	Tuber and aerial bulbils
Mountain yam	*D. hamiltonii* Hook. F.	Low	Tuber
Five leaf yam	*D. pentaphylla* L.	Low	Tuber
Chinese yams	*D. oppositifolia* L.	Low	Tuber
Cassava	*Manihot esculenta* L.	Low	Tuber
Taro: Eddoe type (Taro)	*Colocasia esculenta* var. *antiquorum* Schott	Low to medium	Rhizomes, petiole and leaves
Taro: Dasheen type (Bunda)	*C. esculenta* var. *esculenta* (L.) Schott	Low to medium	Rhizomes, petiole and leaves
Taro (Semi wild green petiole)	*C. esculenta* (L.) Schott	Medium to high	Petiole, leaves, stolon and rhizome
Taro (Semi wild red petiole)	*C. esculenta* (L.) Schott	Medium to high	Petiole, leaves and stolon
Sweet potato	*Ipomoea batatas* (L.) Lam.	Nil	Tubers
Swamp Taro: Green petiole	*Colocasia esculenta* var. *stolonifera* L. Schott	Low	Rhizome, petiole and stolon
Swamp Taro: Red petiole	*C. esculenta var. stolonifera L. Schott*	Low	Rhizome, petiole and stolon
Swamp Taro: Purple petiole	*C. esculenta var. stolonifera* (L.) Schott	Low	Rhizome, petiole and stolon
Swamp Taro: Semi wild type	*C esculenta var. stolonifera* (L.) Schott	Medium to high	Small rhizomes, petiole, leaves and stolon
Elephant Ear taro/Giant rooted taro	*Alocasia macrorrhiza* (L.) G. Don	Medium	Giant rhizome
Giant arum	*Steudnera colocasioides* Hook. f.	Extreme	Giant rhizome
Bengal arum	*Typhonium trilobatum* (L.) Schott	Petioles low to medium, tuber is acrid	Tender leaves and stems
Tannia: Blue/purple petiole	*Xanthosoma violaceum* (L.) Schott	Low to medium	Petioles
Tannia: Green petiole	*X. violaceum* (L.) Schott	Low to medium	Petioles
Tannia: Errow leaf elephant's ear	*X. sagittifolium* (L.) Schott	Low to high	Rhizome and petiole



longum), Habanero type pepper/Bhut Jolokia/king chilli/ Naga chilli (*C. chinense*), purple-flowered capsicums (*C. eximium*), tobacco pepper/bird chilli (*C. frutescens*) and bird eye chilli (*C. minimum*). Apart from species diversity, there is a wide range of intra specific diversity in *C. annum*, *C chinensis*, *C. minimum* and *C. frutescens* found in different states in NEH region.

Cucurbitaceous vegetables: There are many local genotypes of various cucurbitaceous vegetable crops in the region. In 'Jhum' cultivation, wide range of diversity of these crops are found. Bottle gourd and pumpkin tender shoots of 90-150 cm length are very popular as vegetables. Soft young leaves are consumed as leafy vegetables, or mashed after boiling into paste with chilly and onion-garlic, or even used in preparation of dry fish or fish pieces after wrapping with these leaves. Male flowers are deep fried with corn flour/rice floor/besan coating. Local types of bottle gourd, ash gourd and pumpkin especially grown in 'Jhum' areas are very much popular as vegetables. Sweet gourd/spine gourd, pointed gourd and Chow-chow are also very popular vegetables. Various species are, cucumber, ridge/sponge gourds, spine gourd (*Momordica dioica*), sweet gourd (*Momordica chochinsinensis*), pointed gourd (*Trichosanthers dioca*) and tinda (*Praecitrullus fistulous*) etc. are very much indigenous to NEH region. However, many other cucurbitaceous crops namely bottle gourd (*Lagenaria siceraria*), pumpkin (*Cucurbita pepo*), ash gourd (*Benincasa hispida*), snake gourd (*Trichosanthes anguina*), chow-chow/chayote (*Sechium edule*), spong gourd/dhundhul (*Luffa cylindrical*), Rakhalsasha/ Kundari (*Melothria heterophylla*), Jangli karela/wild bitter gourd *(Momordica charantia* var. *municata*), ribbed melon (*Hodgsonia macrocarpa*), ivy gourd (*Coccinia grandis*), Kachri (*Cucumis callosus*).

Leguminous crops: This region may be called centre for secondary diversity for various leguminous crops which are consumed as ethnic foods by the tribal as well as non-tribal communities of NEH region. Hyacinth bean (*Lablab purpureus*), there is a vast diversity in hyacinth bean in the region in terms of stem colour, flower colour, leaf shape, pod colour, shape, seed shape and colour etc. Tree bean (*Parkia roxburghii*) is a medium-large tree which may attain upto 30 m height with spreading branches. Flowers, tender pods and seeds are consumed as vegetable. Sword bean (*Canavalia gladiate*) and Jack bean (*Canavalia ensiformis*) has white seeded varieties (bushy in nature) and red seeded varieties (trailing type). Tender pods and soft seeds are consumed as vegetable, though it has anti-nutritional properties. Winged bean (*Psophocarpus tetragonolobus*) is also consumed by ethnic communities. There is a wide diversity in cow peas (*Vigna Uunguiculata*), yard long bean (*Vigna unguiculata* sub sp *sesquipedalis*), vegetable French bean, kidney bean (*Phaseolus vulgaris*), Yam bean (*Pachyrrhizus erosus*) and Velvet bean (*Mucuna pruriens*).

Tuber crops: There are rich diversity in various type of tuber crops which are very much popular as ethnic food as well as ethno-medicinal purposes. Yams have their center of origin in this region, however, there are varieties of indigenous tuber crops in NEH region.

Other indigenous vegetables and spices: Turmeric (*Curcuma longa*) is indigenous to this region with wide range of diversity among which Lakadong and Megha Turmeric 1 are commercially popular. Even, variability in ginger is also very much common such as aromatic ginger (local name-Sying shmoh), Manipur No. 1, Basar, Tura Local, Thingpui, Meghalaya Local, Thinglaidum, Kachai Ginger and Nagaland Local. Apart from these, variability is also observed in local onion, garlic, long pepper, large cardamom and black pepper.

SUMMARY

North eastern region of India is rich in biodiversity of flora and fauna. Apart from major vegetables which are indigenous to this region, there are diversified traditional plants which are consumed as ethnic foods. Conservation and documentations of all these major and minor vegetables is very much essential.

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