

Center of origin

A **center of origin** (or **center of diversity**) is a geographical area where a group of organisms, either domesticated or wild, first developed its distinctive properties. They are also considered centers of diversity. Centers of origin were first identified in 1924 by Nikolai Vavilov.

Importance of origin centres of plant

Locating the origin of crop plants is basic to plant breeding. This allows one to locate wild relatives, related species, and new genes (especially dominant genes, which may provide resistance to diseases). Knowledge of the origins of crop plants is important in order to avoid genetic erosion, the loss of germplasm due to the loss of ecotypes, loss of habitat (such as rainforests), and increased urbanization. Germplasm preservation is accomplished through gene banks (largely seed collections but now frozen stem sections) and preservation of natural habitats (especially in centers of origin).

Vavilov argued that plants were not domesticated somewhere in the world at random, but that there were regions where domestication started. The center of origin is also considered the center of diversity.

Vavilov centers are regions where a high diversity of crop wild relatives can be found, representing the natural relatives of domesticated crop plants. In 1935 Vavilov gave the following centers

1. Chinese center
2. Indian center
- 2a. Indo-Malayan center
3. Central Asiatic center
4. Persian center (the Near East)
5. Mediterranean center
6. Abyssinian center (Ethiopia)
7. South Mexico and Central American center
8. South America -Ecuador, Peru, Bolivia,
 - 8a. Chile
 - 8b. Brazil-Paraguay



1) Chinese center

1. Chinese centre: It is considered to be one of the earliest and largest independent centres of origin of cultivated plants. This centre includes mountain regions of central and western China. A total of 136 endemic plants

Cereals and Legumes: e.g. rice broomcorn millet, Italian millet, Japanese barnyard millet, sorghum, buckwheat, hull-less barley, soybean, Adzuki bean, velvet bean

- **Roots, Tubers, and Vegetables:** e.g. Chinese yam, radish, Chinese cabbage, onion, cucumber, Colocasia, brinjal, soybean, radish, turnip
- **Fruits and Nuts:** e.g. pear, Chinese apple, peach, apricot, cherry, walnut, litchi, orange
- **Sugar, Drug, and Fiber Plants:** e.g. sugar cane, opium poppy, ginseng camphor, hemp.
- Miscellaneous: China Tea,

2) Indian Center:

Two subcenters

2a) Indo-Burma: Main Center (India):

Includes Assam, Bangladesh and Burma, Punjab,

- Cereals and Legumes: chickpea, pigeon pea, urd bean, mung bean, rice bean, cowpea,
- Vegetables and Tubers: eggplant, cucumber, radish, taro, yam
- Fruits: mango, tangerine, citron, tamarind

- Sugar, Oil, and Fiber Plants: sugar cane, coconut palm, sesame, safflower, tree cotton, oriental cotton, jute, crotalaria, kenaf
- Spices, Stimulants, Dyes, and Miscellaneous: hemp, black pepper, gum arabic, sandalwood, indigo, cinnamon tree, croton, bamboo, turmeric,

2b) ***Siam-Malaya-Java***: Indo-Malayan Center: Includes Indo-China and the Malay Archipelago,

- Cereals and Legumes: Job's tears, velvet bean
- Fruits: pummelo, banana, breadfruit, mangosteen
- Oil, Sugar, Spice, and Fiber Plants: candlenut, coconut palm, sugarcane, clove, nutmeg, black pepper, manila hemp.