

**Indian Farmer**

Volume 13, Issue 08, 2026, Pp. 413-418

Available online at: www.indianfarmer.net

ISSN: 2394-1227 (Online)

Technical Article

Exotic Leafy Vegetables Cultivation in Salari (Arunachal Pradesh) : A New Prospect

Ranjeet Patel, Parashuram Lamani, Ajitabh Bora* and Baikuntha Jyoti Gogoi

Defence Research Laboratory, DRDO, Tezpur, Assam

**Corresponding author: ranjeetpatel.drl@gov.in*

Received: 04/07/2026

Accepted on: 09/08/2026

From the time immemorial indigenous leafy greens viz. Spinach (Palak), Fenugreek (Methi), Amaranth (Chaulai) and Mustard Greens (Sarson) have been consumed in rural India for centuries. They provide essential nutrient supplements like antioxidants, vitamins, iron, calcium and fibre. These nutrients are vital components of healthy balanced diet. These leafy vegetables have very important role in the cultivation portfolio of North-east India. Tribal people in the remote localities are basically dependent upon these vegetables which they harvest from the nature [1]. Apart from domesticated leafy greens, wild edible leafy greens (WELGs) are widely consumed in the daily diet of the local people of North-east India. These are critical for the sustenance of ethnic communities and also as a source of income through sale in local markets [2].

Cultivation of exotic leafy vegetables may add a new dimension to the sustenance and income generation effort, ultimately leading to the enhanced food security prospect to the North-eastern part of India. Keeping this in mind, we have introduced three exotic leafy vegetables viz. Lettuce, Pakchoy & Swiss Chard in Salari region, West Kameng, Arunachal Pradesh.

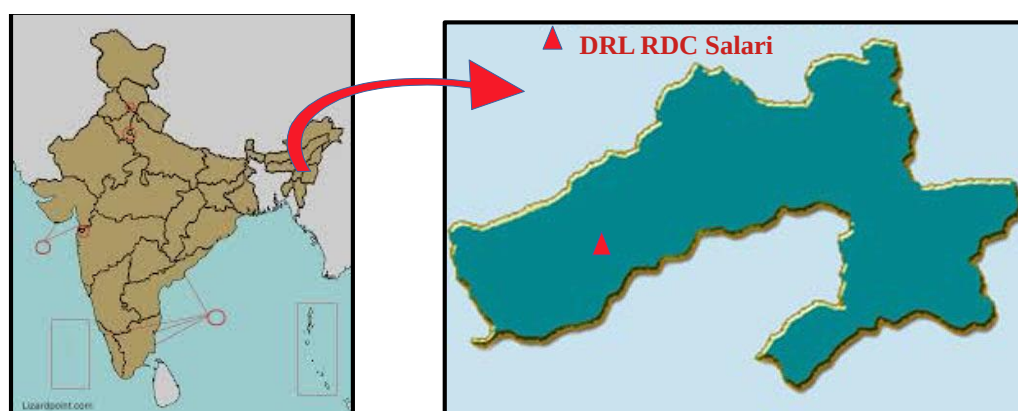


Figure 1. Map of Arunachal Pradesh showing cultivation site

Nursery were raised in the month of October in soilless media using cocopeat, perlite & vermiculite in 3:1:1 ratio at the cultivation site. Transplantation of 30 days old seedlings were done in the protected structure of polycarbonate green house, Nethouse & Polyhouse. Periodic watering & growth parameters were recorded.

Lettuce:

Lettuce (*Lactuca*) is an annual leafy plant belonging to the Asteraceae family. It is eaten fresh as salads thus preserving its nutritional value that would otherwise lost upon cooking or as leafy vegetable. It has largest production area amongst salad crops in the world. It is a rich source of vitamin K, vitamin A, Carotenoids and antioxidants.



Figure 2. Lettuce cultivation in Nethouse

Linda variety of Lettuce is used for conducting the trial. Transplantation was done in the month of November in Nethouse in 15 x 8 ft plot for trial purpose with a spacing of 30 x 30 cm. Average plant height of 12 cm, 18 cm, 22 cm & 26 cm was recorded after 30, 40, 50 & 60 DAT (Days after

transplanting) respectively. Average number of leaves recorded after 30, 40, 50 & 60 DAT was 15.45, 22.20, 26.35 & 25.50 respectively. No significant increase in number of leaves was observed between 50 to 60 days after DAT. Enough space is required for vertical and horizontal expansion of leaves preferably 30 x 30 cm in protected cultivation and 40 x 30 cm in open field condition. At 30, 40, 50 and 60 DAT, the average leaf length of 11.0, 15.0, 18.41 and 22.28 cm was recorded. At 30, 40, 50 and 60 DAT, the average leaf breadth of 10.33, 14.58, 22.26 and 25.57 cm was recorded respectively. 85.23, 99.3, 112.3 and 122.0 g of average fresh weight/plant was recorded after 30, 40, 50 and 60 DAT. Significant yield of 240 q/ha was obtained from the trial after 60 days of DAT. No crop infestation was observed during the trial period.

Pakchoy:

Pakchoy is a green leafy biennial vegetable of the mustard family, though it is cultivated as a yearly vegetable in India especially in colder climate with optimum temperature of 15-20 °C although it can tolerate temperature upto 35 °C for short period of time. This plant is also suitable for pot culture, polybag and hydroponic cultivation. It is a good source of Vitamin A and Vitamin C along with gluco-sinolates, precursor metabolites that can be anti-cancer [3]. Pakchoy stem is thicker and leaves are broader. Following seed germination, it can be harvested in 45 to 60 days. The mature plant can be cut-off at 1 inch above the ground. New leaves usually re-sprout but smaller in size from the first harvest.

Choko variety of Pakchoy was chosen for the cultivation purpose. Transplantation was done in the month of November in Polycarbonate house in 15 x 8 ft plot for trial purpose. The observations were recorded on five plants selected randomly for the characters viz. plant height (cm), leaf length (cm), leaf area (cm sq.), number of leaves, weight per plant (g) and total yield (q/ha). Average plant height of 8.27 cm, 12.21 cm, 15.42 cm & 20.19 cm was recorded after 30, 40, 50 & 60 DAT respectively. At 30, 40, 50 and 60 DAT the average leaf length of 3.5 cm, 6.82 cm, 10.37 cm and 14.24 cm was recorded. Average leaf area of 208.28 sq. cm was recorded after 60 days of transplantation. Average number of leaves recorded after 30, 40, 50 & 60 DAT was 4.82, 7.35, 9.57 & 11.60 respectively. Average weight per plant of 141.68 g was recorded after 60 days of transplantation. Significant yield of 105.23 q/ha was obtained from the trial in polycarbonate house. The cultivation trial was also done in polyhouse having significant yield of 85.87 q/ha.



Figure 3. Pakchoy cultivation in Polycarbonate house



Figure 4. Pakchoy cultivation in Polyhouse

Swiss-Chard:

Swiss chard is a cool season exotic leafy vegetable belonging to *Chenopodiaceae* family. It is a biennial crop which is used for culinary purposes, its stem and leaves can be consumed cooked or raw. Swiss Chard is also known as leaf beet, seakale beet, silver beet, and spinach beet [4]. It has wide range colours of leaves and stems like pink, yellow, orange, red, and white. Its main growing season is winter, although it can be grown round the year under protected structures (10-25 °C). It takes 15-20 days to raise nursery and 20-25 days for first harvest, however three harvesting (cuttings) can be taken from one crop. Swiss chard is very low in saturated fat and cholesterol contents and is a very good source of dietary fibre, vitamins A, C, E, K, B2, B6, thiamin, folate, calcium, iron, magnesium, potassium, copper, phosphorus, zinc and manganese [5].

Average plant height of 16.35 cm, 24.73 cm, 29.67 cm & 35.42 cm was recorded after 30, 40, 50 & 60 DAT respectively. Average leaf area of 280.60 sq. cm was recorded after 60 days of transplantation. Average weight per plant of 128.62 g was recorded after 60 days of transplantation. The yield as per cultivation trial under polyhouse condition was observed as 235.87 q/ha in three cuttings.



Figure 5. Swiss-Chard cultivation

Impact of Introduction:

After introduction of exotic leafy vegetables in Salari region, the exotic greens got good acceptance by the local villagers. More than 50 % of the village household of this region is now cultivating the exotic leafy greens in their homestead garden. The seedlings are also very high in demand among the villagers which are being met by DRL R&D Centre, Salari. Proper cultivation guidance is also being provided to the villagers of the region.



Figure 6. Pakchoy cultivation by villager of Salari region

REFERENCES:

Hore D K. Leafy Vegetables of North-east India, Indian Journal of Plant Genetic Resources, Vol. 17, Issue 1, 10-16, 2004.

K. Surjata et. al., Assessment of wild leafy vegetables traditionally consumed by the ethnic communities of Manipur, Northeast India, *Journal of Ethnobiology and Ethnomedicine*, 12 (9), 2016.

J.-E. Park, J. Kim, E. Purevdorj, Y.-J. Son, C. W. Nho, and G. Yoo, "Effects of long light exposure and drought stress on plant growth and glucosinolate production in pak choi (*Brassica rapa* subsp. *Chinensis*)," *Food Chem*, vol. 340, p. 128167, 2021, doi:10.1016/j.foodchem.2020.128167.

<https://www.almanac.com/plant/swiss-chard>, accessed on 10 Sept 2025.

Knezevic M., D. Durovic, B. Mugosa, M. Strunjas and Topalovic A., Relationships between parameters of soil and chard (*Beta vulgaris* L. var. *Cicla* L.), *Agriculture & Forestry*, 60 (3), 275-283, 2014.