



## Traditional Tuber, Modern Solution: Taro for Sustainable Nutrition

\*Imamsaheb S. J., Shreedhar D and Yashwanthkumar K. H.

AICRP (Tuber crops), Dharwad, Regional Horticultural Research and Extension Center, Dharwad, University of Horticultural Sciences, Bagalkot, Karnataka, India

\*Corresponding Author's email: [imamjath@gmail.com](mailto:imamjath@gmail.com)

Karnataka is home to a rich diversity of traditional food crops that have sustained rural and tribal communities for generations. Among these, taro (*Colocasia esculenta*), locally known as Kesuvina gedde, occupies a unique place in the state's agro-food and cultural heritage. Traditionally cultivated in the Malnad, coastal, and high-rainfall regions of Karnataka, taro has long been valued not only as a dependable source of food but also for its medicinal and nutritional properties. However, with the increasing dominance of rice- and wheat-based diets and the gradual shift away from indigenous crops, taro has become an underutilized and overlooked tuber crop, even as the state grapples with persistent nutritional challenges.

Despite economic growth and expanding food availability, nutritional deficiencies remain a major public health concern in Karnataka. According to the National Family Health Survey-5 (NFHS-5, 2019–20), about 35 % of children under five in the state are stunted (too short for their age), reflecting chronic undernutrition, while nearly 33 % are underweight and 20 % suffer from wasting (low weight for height) all markers of poor nutritional status. Additionally, around two-thirds (66 %) of children aged 6–59 months are anaemic, indicating widespread micronutrient deficiency. Nearly 48 % of women of reproductive age in Karnataka are also anaemic.

More recent Poshan Tracker data (2025) show that Karnataka continues to rank among the states with high child stunting (41.2 %) and underweight prevalence (17.6 %), placing it in the top ten states in India for child malnutrition. These figures highlight the persistent nature of nutritional deficits, particularly in early childhood a critical window for physical and cognitive development. The burden of malnutrition is most severe in rural and aspirational districts, where inadequate dietary diversity, poor maternal nutrition, limited access to health and sanitation services, and food insecurity compound health risks. For example, government data estimated that over 130,000 children under five in the state are malnourished, with more than 11,000 classified as severely malnourished. These persistent nutritional challenges underscore the need for diet diversification and promotion of nutrient-dense indigenous foods. In this context, taro with its rich content of complex carbohydrates, dietary fiber, minerals, and antioxidants offers a promising solution to address both micronutrient gaps and energy requirements in local diets. Its cultivation aligns with sustainable agricultural practices suited to Karnataka's diverse agro-climatic zones, and its traditional food preparations can help bridge existing nutritional deficits while conserving cultural food heritage.

### Nutritional Value of Taro (*Kesuvina gedde*)

Taro (*Colocasia esculenta*) is a nutrient-dense tuber crop that provides balanced nutrition and fits well into the traditional diets of Karnataka. Both the corms and leaves are edible and together contribute energy, essential minerals, vitamins, and protective phytonutrients. Its

nutritional richness makes taro especially valuable for rural households, tribal communities, women, children, and the elderly.

### 1. Rich Source of Energy and Complex Carbohydrates

Taro corms are primarily valued for their **high complex carbohydrate content**, supplying sustained energy without causing rapid spikes in blood sugar when properly cooked. The starch granules in taro are small and easily digestible, making it a preferred food in traditional Karnataka diets.

- Carbohydrates provide steady energy for daily farm and household activities
- Suitable as a substitute or supplement to rice and ragi
- Helpful during periods of food scarcity or lean seasons

This makes taro an important food security crop in rainfed and tribal regions.

### 2. High Dietary Fiber Content

Taro contains significant dietary fiber, which plays a key role in digestive health.

- Improves bowel movement and prevents constipation
- Enhances satiety and helps in weight management
- Reduces cholesterol absorption and supports heart health

In cereal-dominated diets common in Karnataka, taro adds much-needed fiber, helping reduce digestive disorders and lifestyle-related diseases.

### 3. Good Source of Essential Minerals

Taro is a natural source of several important minerals:

- **Potassium** – helps regulate blood pressure and supports heart function
- **Magnesium** – essential for muscle and nerve function
- **Phosphorus** – supports bone and tooth health
- **Iron** – important for haemoglobin formation (especially from leaves)

The high potassium-to-sodium ratio in taro is particularly beneficial for populations affected by hypertension, which is increasing in both rural and urban Karnataka.

### 4. Vitamins for Metabolic and Immune Health

Taro provides several essential vitamins:

- **Vitamin B<sub>6</sub> (pyridoxine)** – supports metabolism, brain development, and nerve function
- **Vitamin C** – boosts immunity, improves iron absorption, and aids wound healing
- **Vitamin E (small amounts)** – acts as an antioxidant

Regular inclusion of taro helps strengthen immunity, especially among children and elderly individuals.

### 5. Nutritional Importance of Taro Leaves

Taro leaves are nutritionally superior to the corms and are widely used in Karnataka, particularly in dishes like *patrode*.

They are rich in:

- **Protein** (higher than many leafy vegetables)
- **Calcium** – for bone health
- **Iron** – useful in preventing anaemia
- **Beta-carotene (pro-vitamin A)** – supports eye health and immunity

Proper cooking of leaves removes acidity and enhances nutrient availability. Their consumption can significantly help address iron and calcium deficiencies among women and children.

### 6. Low Fat and Gluten-Free Food

Taro is naturally:

- **Low in fat**, making it suitable for heart-friendly diets
- **Gluten-free**, ideal for people with gluten intolerance

This makes taro a healthy alternative to refined cereal products and processed foods.

### 7. Presence of Antioxidants and Phytochemicals

Taro contains phenolic compounds and antioxidants that help:

- Reduce oxidative stress
- Support immune function

- Lower the risk of chronic diseases

These protective compounds add to taro's role as a functional food, beyond basic nutrition.

### Nutritional composition of taro corms and leaves

Nutrient	Taro corm (fresh)	Taro leaves (fresh)	Nutritional significance
Energy (kcal)	135–142	42–46	Corms provide energy; leaves are low-calorie
Moisture (%)	63–68	84–86	High water content aids digestibility
Carbohydrates (g)	33–35	6–7	Major energy source in corms
Starch (g)	25–27	–	Easily digestible starch
Dietary fiber (g)	4.1–5.0	3.5–4.0	Improves digestion and gut health
Protein (g)	1.5–2.0	4.0–5.5	Leaves richer in protein
Fat (g)	0.2–0.4	0.5–0.8	Naturally low fat
Calcium (mg)	40–45	250–260	Important for bone health
Phosphorus (mg)	80–90	65–75	Supports skeletal growth
Magnesium (mg)	30–33	45–50	Nerve and muscle function
Potassium (mg)	580–610	550–600	Regulates blood pressure
Iron (mg)	0.8–1.2	2.5–3.5	Prevents anaemia
Zinc (mg)	0.2–0.3	0.7–0.9	Immune and metabolic functions
Vitamin C (mg)	4.5–6.0	50–55	Antioxidant, immunity
Vitamin B <sub>6</sub> (mg)	0.25–0.30	0.20–0.25	Energy metabolism
Folates (µg)	20–25	120–140	Maternal and child nutrition

### Conclusion

Taro (*Colocasia esculenta*) plays a significant role in combating malnutrition by addressing both energy deficiency and micronutrient inadequacy, which remain major nutritional challenges in Karnataka. The corms are rich in complex carbohydrates, providing sustained energy and helping to reduce calorie deficiency among children and adults dependent on cereal-based diets. At the same time, taro leaves are highly nutritious, supplying protein, iron, calcium, folates, and beta-carotene, nutrients that are critically deficient among women and children in the state. According to the National Family Health Survey-5, about 66 % of children and 48 % of women in Karnataka are anaemic, largely due to poor dietary iron intake. Regular consumption of taro leaves, traditionally used in dishes such as *patrode*, can help improve haemoglobin levels and reduce iron-deficiency anaemia. The high dietary fiber content of taro improves digestion, enhances nutrient absorption, and supports gut health, while its potassium-rich and low-fat nature contributes to better cardiovascular health. FAO has identified taro as an important food security crop due to its ability to grow under rainfed and low-input conditions, ensuring reliable food availability during periods of climatic stress. Thus, by providing affordable energy, essential micronutrients, and dietary diversity through both corms and leaves, taro offers a locally appropriate and sustainable solution to malnutrition, particularly in rural and tribal regions of Karnataka (FAO, 1990; Gopalan *et al.*, 2012; Lebot, 2009; NFHS-5, 2021).

### References

1. FAO, 1990. *Roots, Tubers, Plantains and Bananas in Human Nutrition*. Food and Agriculture Organization of the United Nations, Rome, Italy, pp. 1–180.
2. Gopalan, C., Ramasastri, B. V. and Balasubramanian, S. C., 2012. *Nutritive Value of Indian Foods*. Revised and updated edition. National Institute of Nutrition, Indian Council of Medical Research (ICMR), Hyderabad, India, pp. 63–68.

3. Lebot, V., 2009. *Tropical Root and Tuber Crops: Cassava, Sweet Potato, Yams and Aroids*. CABI Publishing, Wallingford, United Kingdom, pp. 413–425.
4. NFHS-5, 2021. *National Family Health Survey (2019–20): Karnataka State Fact Sheet*. International Institute for Population Sciences (IIPS) and Ministry of Health and Family Welfare, Government of India, Mumbai, India.
5. Onwueme, I. C. and Charles, W. B., 1994. *Tropical Root and Tuber Crops: Production, Perspectives and Future Prospects*. FAO Plant Production and Protection Paper No. 126, Food and Agriculture Organization of the United Nations, Rome, Italy.