



A New Record for *Xanthosoma sagittifolium* (L.) Schott (Araceae) in Valsad District, Gujarat State, India

Dhruv, S. Patel¹, Hirali, D. Patel² and Dilipkumar, D. Patel³

¹Research scholar, B.K.M. Science College, Valsad

²Research scholar, Botany Department, School of Science, Gujarat University, Ahmedabad

³Associate Professor, B.K.M. Science College, Valsad

Abstract

Xanthosoma sagittifolium (L.) SCHOTT belongs to family Araceae. It is reported as an addition to the flora of Valsad District and a new record from wild areas of the Gujarat. The paper deals with indigenous taxa of angiosperm belongs to Araceae family is an addition to Gujarat state. The paper also envisages brief citation, detailed, description, flower and plant habit and tuberous followed by ecological notes along with photographs are also provided. Plants hotspots, longitude, latitude, height of the area, soil pH provided and mentioned.

Keywords: *Xanthosoma sagittifolium* (L.) SCHOTT (ARACEAE) is rare plant. New record of Aranai Village of Valsad District, Gujarat State.

Introduction

The family *Araceae* Juss, consists of about 125 genera and about 3750 species including the Lemnaceae (Boyce, *et al.*, 2011), distributed in tropical and subtropical region of the World, majority of the genera occur in the new world tropics. Globally, the genus is represented by 195 species (POWO, 2020), mainly distributed in tropical and southern tropical America, Cost Rica and West Indies are introduced and naturalized in many tropical regions of the World (Mayo, 1997).

While exploring the aroids of Gujarat state the first time author collected and which was later identified as *Xanthosoma sagittifolium* (L.) Schott. The plant *Xanthosoma sagittifolium* (L.) Schott is known so far from Karnataka, Kerala, Tamil Nadu and Andhra Pradesh in Peninsula India (Rao, *et al.*, 2019). Hence, it is reported here as a new addition to the Flora of Gujarat. A detailed description, relevant notes and photographs are provided to facilitate identification.

Study Area

Aranai is 55 Kilometer away from the Valsad main city. The village is situated on the banks

of the river Par. The village has a population of Kunkana tribes. This area is mostly forest area. The temperature of Dharampur and Kaprada Taluka ranges between 12°C minimum in winter to 42.8°C maximum in summer. Average rainfall ranges between 1000 to 3000 mm. Period of rainfall is from June to September and sometimes it extends up to October also. Total rainy days in a year are 40 to 45 days. There is Diversity inland region as this area consists of fertile land, forest area and some part are undulating with hills and hillocks. The forest is of moist deciduous forest type. Plant found at near the Lord Rama Temple.

Aranai was a hot water Cistern before the last one year but now cold water has been used instead of hot water. Three years ago, we saw three plants of *Xanthosoma sagittifolium*. Now a days there are 100 to 150 plants of *Xanthosoma sagittifolium*. People use them as medicine. It could not be known.

The roots also appear red when growing on new plants. The root bud emerges from which new vegetation is formed. This plant needs

100% moisture for 24 hours. This is because the vegetation grows near a hot Cistern. The area is shady and surrounded by trees like *Terminalia balarica*, *MelotusPhillipines* And *Hymenodictyonoriexa*.

Plant Description

Xanthosoma sagittifolium (L.) Schott, Melet., Bot. 19. 1832. *Arum sagittifolium* L. Sp.Pl.966. 1753.

Gigantic terrestrial herbs. Stem corm, sub cylindrical, 18–26 cm long. 10–15 cm diameter. 9th feet maximum plant height, Healthy plant height up to 9–10 feet, Leaves simple, 96–100 cm leaves middle vein length, leaves 100–105 cm long, leaves middle width 70–75 cm. Inflorescence 4–5 spadices in each floral sympodium, appearing with leaves; peduncle 20–25 cm long, 2–3.5 cm in diameter. often glaucous; spathe 20–30 cm long, tube 7–10 cm long, 4–5 cm diam. Dark green ovoid to ellipsoid persistent; blade creamy white, oblong lanceolate, erect reflexed at anthesis, marcescent after anthesis and then deciduous; spadix 15–25 cm long densely flowered, staminate portion 11 cm long, from the base to middle or spadix slightly tapered to the apex,

male flowers 7–9 androus, stamens connate in to hexagonal synandrium, anthers lateral, pollen extruded in strands; sterile portion 5–6 cm long; pistillate portion 3–4 cm long, carpels ovoid 8–10 ovules in each carpel suborthotropous, ovules with long funicles, parietal placentation, stigma yellow sticky.

Flowers & Fruits: March–April.

Distribution: Aranai Village of Kaprada Taluka, Valsad District.

Exsiccate: D.D.P.1801

Longitude & Latitude: 20.588950 °N & 72.942268 °E.

Sea Level Height: 70 Meter.

Soil: Soil pH value 6.6 to 7.2.

Uses

It is cultivated for its starchy corms. Corms and leaves are cooked for human consumption. The Corms are mostly used to feed animals or are dried, peeled and ground to produce flour, rich in Carbohydrates, Calcium, Iron and Phosphorous.



Photo 1: *Xanthosoma sagittifolium* (L.) SCHOTT (ARACEAE) WITH INFLORESENCE



Photo 2: *Xanthosoma sagittifolium* (l.) schott (araceae) flower in natural condition



Photo 3: Plant Habitat



Photo 4: Plant Flower



Photo 5: Plant Male, Sterile and Female Flower



Photo 6: Plant Tuber

References

- Almeda, M. R. "Flora of Maharashtra." 5 (1996).
- Boakye, A.A. et al. "Utilizing cocoyam (*Xanthosoma sagittifolium*) for food and nutrition security: A review." *Food Science & Nutrition* 6.4 (2018): 703-713.
- Carnot, A.C. et al. "Influence of the Number of Watering and Fungicide Treatments on the Development of *Phytophthora colocasiae* (Racib) on Cocoyam (*Xanthosoma sagittifolium*) and Taro (*Colocasia esculenta*) Greenhouse in Cameroon." *International Journal of Current Microbiology and Applied Sciences* 5.8 (2016): 100-112.
- Falade, K.O. and Chidinma, A. O. "Physicochemical properties of five cocoyam (*Colocasia esculenta* and *Xanthosoma sagittifolium*) starches." *Food Hydrocolloids* 30.1 (2013): 173-181.
- Gupta, P.P. "Plant regeneration and variabilities from tissue cultures of cocoyams (*Xanthosoma sagittifolium* and *X. violaceum*)." *Plant Cell Reports* 4.2 (1985): 88-91.
- Inhotim, J. B. "The Commonly Cultivated Species of *Xanthosoma* Schott (Araceae), including Four New Species."
- Nishanthini, A. and Veerabahu, R. M. "Antioxidant activities of *Xanthosoma sagittifolium* Schott using various in vitro assay models." *Asian pacific journal of tropical biomedicine* 2.3 (2012): S1701-S1706.
- Offei, M. A. "Rotting of Cocoyam [*Xanthosoma Sagittifolium* (L.) Schott] Cormels in Storage: Aetiology and Control." *Diss. University of Ghana* (1999).
- Onokpise, O. U. et al. "Acclimatization and flower induction of tissue culture derived cocoyam (*Xanthosoma sagittifolium* Schott) plants." *Agronomie* 12.2 (1992): 193-199.
- Osuji, J.O. and Prince, C.N. "Epidermal and cytological studies on cultivars of *Xanthosoma* (L.) Schott. and *Colocasia* (L.) Schott.(Araceae)." *International Journal of Plant & Soil Science* 4.2 (2015): 149-155.
- Oridupa, O. A., et al. "Effect of traditional treatment of diabetes mellitus with *Xanthosoma sagittifolium* on the male reproductive system of Alloxan-induced diabetic Wistar rats." *Drug Research* 67.06 (2017): 337-342.
- Prameela, R., J. Swamy. and Rao, J.P. "Notes on distribution of *Xanthosoma sagittifolium* (L.) Schott (araceae) in Peninsular India." *The Journal of Indian Botanical Society* 100.1-2 (2020): 87-90.
- Pullaiah, T. "Flora of Andhra Pradesh: T. Pullaiah, E. Chennaiiah, S. Sandhya Rani." *Scientific Publishers* (2018).
- Reddy, A. S. "Flora of Dharampur Forest Part 1 & 2." *Diss. PH. D. Thesis, Department of biosciences, SP University, Vallabh-Vidyanagar, Gujarat-INDIA* (1987).
- Sasikala, K., Vajravelu, E. and Daniel, P. "Fascicles of Flora of India, Fascicle 29 Araceae." *Botanical Survey of India* (2019): 1-358.
- Singh, N. P. and Saravanam, K. "Flora of Maharashtra State: Dicotyledones." *Botanical Survey of India (BSI), Calcutta, India* 1 (2000).
- Suja, G., John, K.S. and S. Sundaresan. "Potential of *Tannia* (*Xanthosoma sagittifolium* (L.) Schott.) for organic production." (2009).
- Trejo, M., et al. "Advancement of fermentable sugars from fresh elephant ear plant weed for efficient bioethanol production." *Environment, Development and Sustainability* 24.5 (2022): 7377-7387.
- Valenzuela, H. R., Stephen, K. O. and Bruce, S. "Shading, growth, and dry-matter partitioning of cocoyam [*Xanthosoma sagittifolium* (L.) Schott]." *Journal of the American Society for Horticultural Science* 116.6 (1991): 1117-1121.
- Voss, E. G. ed. "International Code of botanical Nomenclature: adopted by the 13. int. botanical congress, Sydney, August 1981." *Bohn, Scheltema & Holkema* (1983).
- Wada, E. et al. "Genetic diversity of Ethiopian cocoyam (*Xanthosoma sagittifolium* (L.) Schott) accessions as revealed by morphological traits and SSR markers." *PloS one* 16.1 (2021): e024512.

Source of support: Nil;

Conflict of interest: The authors declare no conflict of interests.

Cite this article as:

Patel, D.S., Hirali, D.P. and Dilipkumar, D.P. "A New Record for *Xanthosoma sagittifolium* (L.) Schott (Araceae) in Valsad District, Gujarat State, India." *Annals of Plant Sciences*.11.08 (2022): pp. 5281-5285.

DOI: <http://dx.doi.org/10.21746/aps.2022.11.8.2>