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Ethnobotanical Uses Of Aroids By The Bodo People Of Baksa District, Assam

Bina Basumatary[1], Ashish Kar[2], Rekha Bora[3], Ashish Pratim Hazarika[4], Prasenjit Bhagawati[1*]

[1]Department of Botany, Assam down town University, Guwahati, Assam, India
[2]Department of Botany, The Energy and Resources Institute (TERI), Guwahati, Assam, India
[3]Department of Earth Science, University of Science & Technology, Meghalaya, India
[4]Department of Botany, Kakojan College, Jorhat, Assam
*Corresponding Author: Prasenjit Bhagawati
E mail: prasenjitbhagawati@gmail.com

ABSTRACT

The study provides an ethnobotanical survey of aroid plants (family Araceae) used by the Bodo community in the Baksa District, Assam, India in a comprehensive manner. It is situated along the Brahmaputra River and its affluent biodiversity and traditional ecological knowledge is life in the district. In the intensive fieldwork, interview, and specimen collecting, it was able to record the existence of 28 species of aroids in 10 genera both cultivated and wild. Out of them, 9 species are grown for different purposes and 4 species are mostly grown as ornamentals due to the beautiful foliage.

Ethnobotanically these species were found to have various uses, 21 of which are used in the traditional medicine, 18 are consumed as food, 15 in the ritual of bathing the elephant to skin irritation, 9 in the use as fodder to pigs. More so, fishing uses 2 species and 2 other time in traditional games of children. Some are versatile in their uses- the Alocasia macrorrhizos and Homalomena aromatica are of popular use in preparing the Napam, a fermented fish delicacy, whereas Colocasia species are widely used and some also find use in the medical field. The remedies are in treatment of skin diseases, cough, wounds, piles, postpartum recovery and animal health care.

Methods of harvesting, detoxifying and processing aroids, including roasting in the sun, cooking in acidic fruits such as tomatoes to leech out the irritant calcium oxalate, all form part of local knowledge systems. This study identifies the ecological and cultural value of aroids of the Bodo community and thus stressed the dire situation of the unfavorable environmental and socio-economic condition that threatens the loss of indigenous knowledge of this area.

Key words- *Aroid, Baksa District, ethnobotanical, cough, pneumonia, foliage.*

INTRODUCTION-

The family *Araceae* of the flowering plant order *Alismatales* includes the aroids--a heterogeneous assemblage of monocots (flowering plants that bear only one seed leaf) often called the *arum* family. *Arum* has its root name *Aron* which is of Greek origin because the taxonomy is classical (Mayo et al., 1997). Widely spread throughout tropical and subtropical territories, the aroids are known to be particularly exotic in their floral shapes. The inflorescence, which is called a *spadix*, is usually covered by a *spathe*, and has both male and female unisexual flowers. Such flowers are usually small, have a strong smell to invite the pollinators, and can have thermogenesis to increase the pollination effectiveness (Jimenez et al., 2019).

Ecologically, aroids occupy diverse habitats. Some are terrestrial, while others are aquatic or epiphytic. The most species are climbers or herbaceous with an underground storage organ like corms, rhizomes, which usually possess a distinct milky latex. *Aroids* are appreciated because of their beauty, edible components, medicinal value and importance to the cultures. They include compacted herbaceous plants up to colossal ones with leaves extending up to a number of meters.

Five main genera are grown in tropical Asia and the Pacific which include *Alocasia macrorrhizos* (giant taro), *Amorphophallus campanulatus* (elephant foot yam), *Colocasia esculenta* (taro), *Cyrtosperma chamissonis* (giant swamp taro), and *Xanthosoma sagittifolium* (tannia) which are used because of their edible corms or leaves. *Alocasia*, *Amorphophallus* and *Colocasia* are native to Asia whereas *Xanthosoma* is an American native that was introduced later (Ivancic & Lebot, 2000; Pacheco-Trejo et al., 2023). Among wild Arroids, there are several important

varieties within the local communities, and especially among the populations of aboriginal peoples using them as food, feed, traditional medicine, and other customs (Matthews & Medhi, 2014).

Some of the edible aroids have calcium oxalate crystals that despite their usefulness, they may produce severe irritation when eaten uncooked. Nevertheless, people constructed separate knowledge frameworks to counter these nuisances one is by acidifying the foodstuff through cooking with acidic substances or pretreating with oil and heat (Ezeabara et al., 2015; Mutaqin et al., 2018).

In the world, Araceae contains approximately 144 genera and more than 3,600 published species (Boyce & Croat, 2011). The number of Indian aroid species is estimated to differ in sources. Hooker Flora of British India records 228 species in 31 genera whereas Karthikeyan et al. (1989) lists 138 species and 25 genera. Later Yadav reported an Indian specific 150 species in 29 genera.

Assam, Arunachal Pradesh and 7 species of plants, *Tripura, Manipur, Nagaland, Meghalaya,* and *Mizoram* each have fewer species of plants, ethnobotany in Northeast India reported 7 species (Devanjal et al., 2016). Taxonomic studies on the aroids of Assam however are not extensive and not region specific. In Das, et al. (2014) 17 genera and 26 species were tabulated in the *Nazira* Subdivision of *Sivasagar* district. Previous documentation was done of 11 genera and 16 species of undivided *Kamrup* (Baruah, 1992) and 34 genera and 47 species throughout Assam in Choudhury Assam Flora (2005). Relative newer compilations refer to 24 genera and 45 species in the state (Barooah & Ahmed, 2014; Talukdar & Devi, 2015).

Since there are very little consolidated data on the diversity of aroids, traditional uses, and culture of the Bodo people of *Baksa* District, Assam, this research intends to provide and report the diversity, traditional uses, and cultural practices relating to aroids in the Bodo community. It also looks forward to underline indigenous conservation measures and significance of traditional ecological knowledge towards maintaining plant diversity.

MATERIALS AND METHODS-

The research was done in *Baksa* District of Assam, northeastern region of India. In the north, Baksa is situated on the north of the Brahmaputra river and its north boundary is bounded by Bhutan. It is surrounded by *Udalguri* district in the east, by *Nalbari* and *Kamrup* districts in the south and by *Chirang* district in the west. Geographically, Baksa is located over a land of about 2,400 square kilometers with altitude of 46 to 54 meters above sea level. The area is also defined by a well varied ecological system which comprises the Himalayan foot hills, a number of perennial streams and fertile alluvial plains. The district is endowed with major rivers- *Kaldia, Pagladia, Puthimari* and *Mara Manas* that flow to the south. These rivers make the district both agriculturally and ecologically productive.

Bodo is one of the biggest communities of Baksa which consists of traditional farmers and works not only with modern agrochemicals but also with traditional ethnobotanical knowledge concentrated on generations. The field surveys have been conducted in several villages and settlements of Baksa alongside a forest. Ethnobotanical data were gathered during the study as well by the means of administering both structured and semi-structured interviews with *local elders, farmers* and *herbal practitioners*, as well as *community leaders* who were identified as elders of the local communities and were known to have knowledge of traditional use of plants in the area.

In collecting specimens, the team had the most important equipment such as scissors, knives, gloves, polythene bags, and field books. People have a digital camera and cell phones with GPS capability to take pictures of plants and get coordinates. Data like the local (Bodo) *name of the plant, morphology, habitat, flowering time, ethno-botanical uses* and *mode of preparation* or *usage* were recorded. Plants that were multi-purposed, including, being used as foods, fodder, medicine, or traditions, were studied especially in detail in effort to achieve the more comprehensive grasp of traditional use.

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Fig 1: ***Map of Baksa district of Assam***

Specimens gathered were as complete as possible including whole plants, or important organs like corms, rhizomes, leaves and petioles. These were made as herbarium specimen prepared on wet mount and were kept as taxonomic samples. Aids were used (i.e. standard floras, earlier taxonomic literature regarding Araceae e.g. Mayo et al., 1997; Choudhury, 2005; Talukdar & Devi, 2015) in identification and classification. Booking and specimen authentication was done at *Herbarium unit* of Assam down town University, Guwahati.

The research conducted was done ethically and each of the participants was provided with the verbal agreement to informed consent. The research was ethnographic in character and aimed at a respectful interaction with keepers of indigenous knowledge and was done in adherence to the principles of community-based research.

RESULT AND DISCUSSION-

3.1 Species Diversity and General Observations

In the current research, *28 aroid species* that represent *10 genera* were recorded in Baksa District in Assam. Of these, *9 species* were found to be cultivated, the rest of species were found in wild or semi-wild conditions. There is variety in the terrestrial, aquatic and even semi-aquatic herbs and some of these herbs are found to have t*uberous roots, rhizomes* or *corms* which have adapted to the regional climatic and edaphic conditions.

The ecological adaptability of aroids was evidenced in their presence in homestead gardens, paddy field margins and edges, forest edges and stream and roadside thickets. Other species like Colocasia esculenta were found to have a large morphological difference, nature and local cultivar selectivity.

Ethnobotanical significance of these plants was shown by their inclusion in everyday lives, traditional health systems, cuisine and even cultural practices. The local community, particularly the Bodo people, uses various parts of the plants such as corms, petioles and leaves, flowers and stolons. Every species or variety has a different use attributed to it and wherever applicable, plants multi-purpose.

3.2 Categorization of Aroid Uses

The uses of the 28 recorded species were categorized as follows:

Use Category	No. of Species
Medicinal applications	21
Edible (corms, petioles, flowers)	18
Elephant bathing (skin irritation)	15
Pig fodder	9
Cultivated varieties	9
Ornamental plants	4
Used in traditional games	2
Used in fishing practices	2

The species like *Alocasia macrorrhizos*, *Colocasia esculenta*, and *Amorphophallus bulbifer* became extremely multifunctional since they were retained in distinct categories. Certain of them remained strictly associated with

native concoctions- such as *Alocasia macrorrhizos*, and *Homalomena aromatica*, that are included in the manufacture of Napam, a fermented fish delicacy, inherent to Bodo cuisine and culture.

3.3 Medicinal Applications of Aroids

Among the Bodo communities of Baksa District, 21 species of aroids were recorded as of their medicinal nature. These plants are the major plant species which are made to wash human diseases like skin diseases, cough, jaundice, boils, piles and pneumonia and wounds, even the age old diseases like postpartum weakness and sexual advantage of men. A number of the species are also used as Veterinary care especially treatment of wounds and respiratory disorders in cattle.

Xanthosoma sagittifolium is one of the most common species with its corms and petioles used traditionally to treat vitiligo and skin rash. *Homalomena aromatica* is treasured; The petiole is cooked and utilised in black jaundice treatment and the alleviation of pains. Equally, the matured petiole of the *Alocasia macrorrhizos* is burned and utilized to treat cough. Traditional veterinary medicine uses a mixture of *Zanthoxylum, Zingiber zerumbet,* black pepper with Petioles of *Alocasia macrorrhizos* in the treatment of respiratory infections by cows.

Rhizomes of *Alocasia odora* and *A. macrorrhizos* are boiled to make poultices and applied in wound healing and pain relief particularly among cattle. Certain aroids are very irritant, however, and livestock like pigs avoid them, eg *Alocasia odora.* The *Alocasia cucullata* boils and its smoked inhaled by the patients in case the paralysis is severe. *Colocasia esculenta* varieties are extensively used in ethnomedicine. Black taro is used on the boils and insect bites, especially caterpillar irritation by application of the petiole extract. Young shoots are cooked to curb coughing whereas dried petioles enhance the skin and treat piles. The particular cultivars like *colocasia esculenta* are thought to augment lactation among postpartum women whereas the rest are used to alleviate pain in the feet and improve the reproductive capacities of men.

Amorphophallus bulbifer is another drug-worthy species the corm of which is used as a painkiller and a source of proteins; *Lasia spinosa* can be applied in the form of decoctions to treat against black jaundice, pneumonia, and typhoid. Finally, *Typhonium trilobatum* petiole paste is used where they are placed directly to the throat to alleviate tonsillitis.

There is a highly specific and complex knowledge of plant pharmacology, specificity of parts of plants, and relationship between diseases in the ethnomedicinal knowledge. The methods of preparation vary widely--in boiling and steaming, in burning or in topical application--and lie at the very root of the traditional systems of belief and empirical practice.

3.4: Edible and Culinary Uses of Aroids

The Aroids are an essential constituent of traditional diet of Bodo people in Baksa District. The 18 species were reported to be consumed in different ways including cooked, boiled, fermented or roasted. *Corms, petioles, stolons, flowers* and in rare cases, *leaves* are eaten. These species are not only useful as a source of food but also as a medicine and food source.

Colocasia esculenta and its different cultivars, can be considered among the most popular ones to be consumed due to the wide range of culinary uses. They can be boiled, roasted or even mixed with meat and fish when thinly sliced. Corms are sometimes treated with acidic compounds such as star fruits (*Averrhoa carambola*) or roselle (*Hibiscus sabdariffa*) leaves in order to minimize irritation by calcium oxalate. Petioles and stolons are also included in local dishes. *Alocasia macrorrhizos* is used in a special way in processing Napam type of fermented fish and its rhizomes are processed with acidic compounds to minimize acridity. *Amorphophallus bulbifer* is cooked together with meat and this is taken to provide flavor as well as a protein source.

Table 1. Edible Aroid Species, Parts Used, and Culinary Applications

Botanical Name	Local Bodo Name	Parts Consumed	Culinary Use
Xanthosoma sagittifolium	Dudali gwswm	Corm, petiole	Cooked as curry

Xanthosoma violaceum	Dudali gwswm	Corm, petiole	Cooked as curry
Homalomena aromatica	Gangjema taso	Petiole	Made into soup with chicken
Colocasia esculenta (var. 1)	Taso gufur	Corm, petiole, flower, stolon	Eaten to increase milk secretion postpartum; curry with base/acidic fruits
Colocasia esculenta (var. 2)	Taso dolor	Corm, petiole, flower, stolon	Boiled and eaten; used in fishing/game; leaves for packaging
Colocasia esculenta (var. 3)	Taso mwkhang gwja	Corm, petiole, flower, stolon	Eaten to relieve foot pain; used to treat men's health
Colocasia antiquorum	Nol taso	Corm, flower	Eaten for good skin and blood quality
Colocasia mannii	Taso holong	Corm	Used in weight loss diets
Colocasia gigantea	Tarun	Corm, flower	Cooked with meat/fish; flowers used as chutney
Colocasia lihengiae	Asina taso	Corm	Roasted in fire or cooked with meat; eaten to gain weight
Alocasia macrorrhizos	Kopri homgra taso	Rhizome, petiole	Petiole used in fermented fish (Napam); rhizomes cooked with acidic fruits
Lasia spinosa	Chibru	Young petiole	Cooked as vegetable
Amorphophallus bulbifer	Olodor	Corm	Cooked with meat; eaten for protein and pain relief
Colocasia esculenta (wild)	Taso variants	Stolons, flowers	Flowers eaten as chutney; stolons used as vegetable
Colocasia fallax	Hagrani taso	Corm	Roasted or cooked
Colocasia affinis	Hgrani taso	Corm	Roasted or cooked
Colocasia esculenta (var. 4)	Basor taso	Corm, flower	Flower eaten as chutney; corm cooked
Colocasia esculenta (var. 5)	Mepal taso	Corm, flower	Used in weight gain; cooked with meat/fish

These results clearly show how rooted aroids are in Bodo food system. The meticulous choice of cultivars to accommodate particular health and diet needs and non-modern techniques of detoxification (e.g. cooking with sour ingredients) indicates the advanced gastronomic expertise that was studied and handed down.

3.5 Aroids Used in Animal Care and Cultural Practices

Instead of eating and using aroids pharmaceutically, the Bodo community uses it in large capacities as animal husbandry material and also culturally. The ethnobotanical survey indicated the following 17 aroid species being used during bathing of the elephants, 9 species of the aroids being used as pig fodder and some of the varietals are used in traditional games and methods of fishing. Leaves and petioles find new use in village markets as natural packaging material.

These applications are an indication of an advanced knowledge about the properties of aroids such their ability to cool, the textures of different leaves, and the medicinal residues which are said to have beneficial effects on animals.

Botanical Name	Local Bodo Name	Usage Category	Specific Use
Xanthosoma sagittifolium	Dudali gwswm	Elephant bathing, Pig fodder	Mixed in boiling water for elephant bathing; pig fodder
Xanthosoma violaceum	Dudali gwswm	Elephant bathing, Edible	Corms boiled for elephant skin relief; also eaten
Xanthosoma robustum	Dudali fagla	Pig fodder, Elephant bathing	Pig feed; boiled with others for elephant baths
Colocasia esculenta (var. 1)	Taso gufur	Pig fodder, Elephant bathing, Fishing, Games	Used in games ("Bata"); petiole for fishing; leaves as packaging
Colocasia esculenta (var. 2)	Taso dolor	Elephant bathing, Edible	Boiled for elephant bath; eaten after boiling
Colocasia esculenta (var. 3)	Taso mwkhang gwja	Elephant bathing, Edible	Boiled for elephant use; edible; also linked to men's health
Colocasia affinis	Hgrani taso	Elephant bathing, Pig fodder	Used in boiled bathing mixtures for elephants
Colocasia fallax	Hagrani taso	Elephant bathing, Pig fodder	Part of elephant bathing mix; used as pig feed
Colocasia antiquorum	Nol taso	Elephant bathing, Edible, Pig fodder	Used for good skin, mixed in bathing mix; edible
Colocasia mannii	Taso holong	Pig fodder	Corms used as pig feed
Amorphophallus bulbifer	Olodor	Elephant bathing, Edible	Mixed in boiling mix for elephant skin care
Alocasia odora	Oma jayi taso	Elephant bathing	Rhizomes boiled for elephant use; highly irritant
Alocasia macrorrhizos	Kopri homgra taso	Elephant bathing, Cultural (Napam)	Used in fermented fish; also for elephant bathing
Alocasia cucullata	Mwider tugwigra taso	Elephant bathing, Medicinal	Smoke inhalation for paralysis; elephant care
Alocasia sp.	Taso pagla	Elephant bathing	Boiled in elephant bath mixture
Caladium bicolor	Phul taso gwja	Elephant bathing, Ornamental	Decorative; also included in bathing mix
Homalomena aromatica	Gangjema taso	Cultural (Napam), Edible, Pod plant	Soup preparation; fermented fish ingredient

Table 2. Aroid Species Used in Animal Care and Cultural Practices in Baksa District

These rituals not only show that there is a utilitarian attitude towards the use of plants but also a strong way of respecting animals, especially elephants, symbolically and practically significant in the area. Mixing several species in boiling baths is believed to cure skin irritation, fungal infection and heat stress to elephants. In the case of pigs, the choice of the aroid species to use depends on the palatability, digestibility.

Also, Alocasia leaves when wiped up are used by kids as umbrellas in monsoons and petioles of *Colocasia esculenta* are used in fishing and Bodo traditional game called Bata. These highlight the intergenerational transmission of ethnobotanical knowledge.

3.6 Ornamental and Aesthetic Uses of Aroids

In addition to use in food, medicine and in caring about animals, some aroid species in Baksa District are simply appreciated and considered as ornamental. These trees are cultivated in the home gardens and courtyards and they can be used both ornamentally and symbolically. The Bodo people can also use these species as ornamental plants by planting them due to their interesting leaves and growth habit, their foliage color, and the variegation of the leaves. In other instances, they can also be called pod plants, that is, they are applied in decoration of traditional household pots as well as the shaded areas of dwellings.

There were 4 species of aroids that had been specifically used as ornamental or aesthetical and on rare occasions, straddled over to other applications (as used in elephant bathing or fermentation of food etc.). Such plants are not usually eaten but they are cultivated due to their aesthetic and cultural appeal in the landscape of a home.

Table 3. Aroid Species Used as Ornamentals in Baksa District

Botanical Name	Local Bodo Name	Plant Type	Ornamental Features	Additional Use
Caladium bicolor	Phul taso gwja	Terrestrial	Multicolored, heart-shaped foliage	Used in elephant bathing mix
Caladium bicolor (variety Florida Clown)	Phul taso	Terrestrial	Variegated leaves with pink, white, and green hues	Ornamental only
Syngonium auritum	Phul taso fakra	Climbing root	Arrowhead leaves, pod plant in shaded spots	Pod plant, decorative climber
Epipremnum aureum	Manlagra phul taso	Climbing epiphyte	Glossy green-gold leaves; popular in hanging baskets	Pod plant, air-purifying use

Such species are easily grown by cuttings and grown in shaded moist conditions. There is an increased popularity in them especially because of their low maintenance needs and versatility in their decoration. Others like *Epipremnum aureum* have been found to be also involved with removal of pollutants in the air and are valued not only as traditional use but also as eco-aesthetic as well.

The agglomeration of ornamental aroids among the Bodo people demonstrates the future of botanical aesthetics embraced on the background of practical ethnobotany. Such plants are commonly found in backyard gardens along with other medicinal or edible plants, which make up a multi-function, biodiversity-rich landscape.

3.7 Special Preparation Techniques to Remove Irritation from Aroids

Calcium oxalate crystals, and raphides, in particular, in diverse aroid species are believed to give them their characteristic acridity, and possible propensity to irritate or even damage the skin and mucous membranes in case they are handled or mishandled, or otherwise ingested in the wrong way. The Bodo people of Baksa District have managed to come up with a variety of strategies in detoxification of aroids, which enables them to safely handle and consume them.

These classical practices are empirically-known recipes, usually transmitted orally down the generations, and also modified over the years to fit other species and cooking styles. These are the common methods used in the field study:

Table 4. Traditional Detoxification Techniques for Handling Aroids

Technique No.	Preparation Technique	Purpose / Application
1	**Application of mustard oil to hands before handling**	Prevents skin irritation and itching during peeling or chopping of raw plant material
2	**Washing irritant species with hot water, not cold**	Used particularly for Alocasia macrorrhizos; reduces surface calcium oxalate

3	**Cooking with acidic agents (e.g., star fruit, roselle)**	Neutralizes irritation when preparing curry or stew from corms or petioles
4	**Roasting corms directly over firewood**	Common for wild Colocasia spp.; reduces oxalate and enhances flavor
5	**Steaming rhizomes with herbs**	Used for both human and animal medicinal applications
6	**Boiling with other neutralizing aroid species in water mix**	Mixed preparation for elephant bathing or medicinal decoctions

Such practices exemplify an intricate appreciation of plant poison hazard and biochemical contact, as in the case of sour fruits (*Averrhoa carambola*, *Hibiscus sabdariffa*), acids are used to depict the oxalate ions and having lower harmful impact. The choices by this technique enable the Bodo people to get the highest benefit of the nutritional as well as medicinal aspect with the least risk.
Detoxification of aroids is also another widely practiced attribute of its vital role in community meals, postnatal diets, and animal treatment where care preparation is of utmost importance. The given methods act as an initial segment of ethnopharmacological safety measures as a tradition of ecological knowledge.

3.8 Summary of Ethnobotanical Roles of Aroids

The ethnobotanical survey conducted in Baksa District demonstrated that aroids could never be considered purely botanical resources and have a lot of connections to the cultural, medicinal, culinary and eco-related aspects of Bodo community. The species represent multi-purpose uses, and they have dual uses in food security, healthcare, rearing of livestock, cultural identity, and beauty.

Table 5. Summary of Aroid Use Categories in Baksa District

Use Category	No. of Species	Representative Species	Notes
Medicinal Uses	21	Alocasia macrorrhizos, Homalomena aromatica	Treatment of cough, wounds, jaundice, boils, piles, tonsilitis
Edible and Culinary Uses	18	Colocasia esculenta, Amorphophallus bulbifer	Cooked, boiled, roasted, fermented; postpartum nutrition
Elephant Bathing	15	Xanthosoma robustum, Alocasia odora	Boiled plant mixture for skin irritation relief
Pig Fodder	9	Colocasia mannii, Xanthosoma sagittifolium	Corms and leaves used as feed
Cultural & Ritual Uses	4	Alocasia macrorrhizos, Colocasia esculenta	Used in fermented fish (Napam), traditional games, umbrella-making
Fishing Practices	2	Colocasia esculenta varieties	Petioles used as tools or bait
Traditional Games ("Bata")	2	Colocasia esculenta (wild)	Used by children in local games
Ornamental/Aesthetic Uses	4	Caladium bicolor, Syngonium auritum	Cultivated for foliage, pod plants, and visual appeal
Detoxification Knowledge	—	Local processing techniques	Includes boiling, roasting, acid cooking, oil handling

As a whole, this multifaceted use of aroids depicts the strong connection between traditional way of knowledges and biodiversity of the region. These plants have highly specific uses in health, nutrition, ecological management and cultural persistence rather than those meant just as subsistence plants.

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The ethnobotany of the Bodo community using aroids demonstrates an exemplary practice of sustainable ethnobotany: using or consuming on one hand and ecologically viable on the other. Notably, most of these species are under-documented in mainstream botanical literature, which makes quite strong the usefulness of community-based ethnobiological research.

SPECIAL MECHANISM TO REMOVED THE IRRITATION OF AROIDS -

Most of the aroids are in irritation nature as they contain calcium oxalate in the plants therefore, villager used some technique to minimize irritation of aroids-

1. Before touching the aroids, have to apply mustard oil.
2. Some aroids are cause irritation when wash with cold water, have to wash with hot water such as *Alocasia macrorrhizos* etc.
3. When cooked curry has to applied hot water not cold water and Base or some sour taste fruit like *Averrhoa carambola* (Star fruit) or *Hibiscus sabdariffa* (Roselle) leaves.

Figures of uses of aroids are shown below-

Fig 1-Flowers of *Colocasia esculenta* for sale.
Fig 2-Collecting *Colocasia esculenta* for pig fodder.
Fig 3-Petiole of *Xanthosoma violanceum* bringing in market for sale.
Fig 4-Petioles of *Alocasia macrorrhizos* are using in making fermented fish Napam.
Fig 5-Petiole of two varieties of wild *Colocasia esculenta* are used in game called Bata.
Fig 6-Petioles of *Colocasia esculenta* are used in fishing.
Fig 7- Herbal healer used leaves of *Colocasia esculenta* to cure jaundice.
Fig 8- Boil rhizomes of *Alocasia odora* are steam to reduce the pain.
Fig 9-Pluking stolons of *Colocasia escucenta* as vegetable.
Fig 10- Yong plant of *Lasia spinosa* for sale in market.
Fig 11-Coroms of *Colocasia lihengiae* to sale in market.

Figures of aroids found in baksa district of Assam are-

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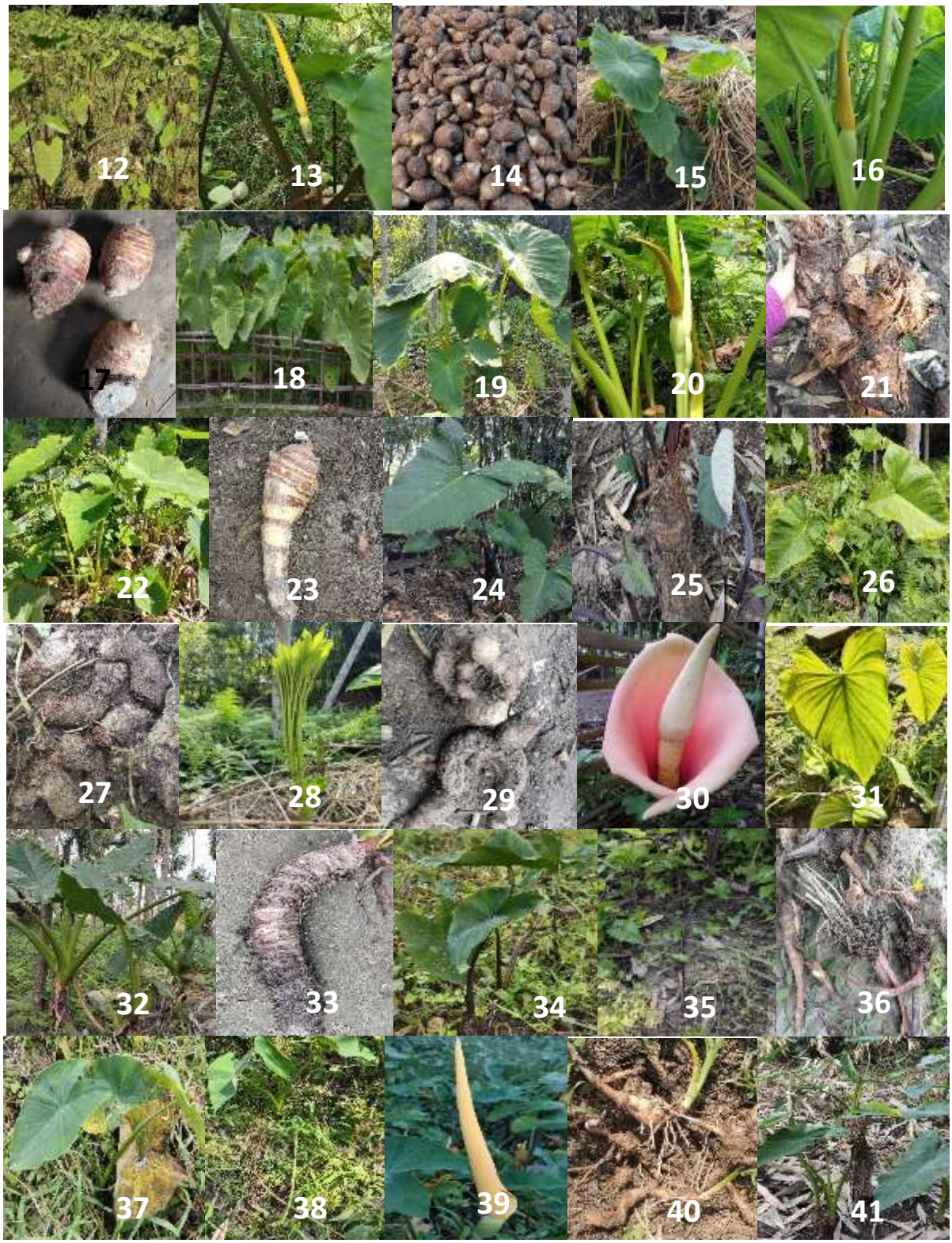

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(Fig 12-33 cultivated)

Fig(12-14)- Plant, flower and corms of *Colocasia lihengiae*.

Fig (15-17)- Plant, flower and corms of Cultivated *Colocasia esculenta.*

Fig(18-21)-Plant, flower and corm of *Colocasia gigantea*.

Fig(22-23)- Plant and corm of *Colocasia esculenta*
Fig(24-25)- Plant and corms of *Xanthosoma violanceum.*
Fig(26-27)- Plant and Corms of *Xanthosoma sagittifolium*.
Fig(28-30)- Plant, Corm and flower of Amorphophallus *bulbifer*. Fig 31- *Homalomena aeromatica*.
Fig(32-33)- Plant and corm of *Alocasia macrorrhizos*. (Fig 34-46 wild edible aroid).
Fig (34-36)-Plant, stolon, and corms of wild *Colocasia esculenta.*
Fig(37-40)- Plant, stolon, flower and corms of wild *Colocasia esculenta*. Fig 41- *Colocasia antiquorum.* Fig 42- *Lasia spinosa.*
Fig(43-44)- Plant and corms of wild *colocasia esculenta*.
Fig(45-46)- Plant and corms of wild *Colocasia esculenta*. (Fig 47-61 wild).
Fig (47-49)-Plant, pinkish short stolons and flower of *Xanthosoma robustum*. Fig 50- *Colocasia mannii*. Fig 51- *Colocasia affinis*.
Fig(52-54)- Plants and flower of *Colocasia fallax*.
Fig(55-56)- Plant and corm of *Colocaia cucullata*. Fig 57-*Homalomena species*.
Fig (58-60)-Plant, flower and corm of *Alocasia odora*. Fig 61-*Alocasia species*.
(Fig 62-66 Ornamental). Fig 62- *Syngonium auritum*. Fig 63-*Epipremnum aureum* are used as a pod plant.
Fig(64-65)- Plant and flower of *Caladium bicolor*. Fig 66- *Caladium bicolor* (variety Florida clown). Fig 67- *Typhonium trylobatum*.

4. CONCLUSION

This ethnobotany research on Baksa District of the state of Assam provides the detailed description of the traditional as well as rich knowledge present within the Bodo community in use of aroids (family Araceae) There were 28 species representing 10 genera and each species was found to have a specific role to play in the domains of nutrition, medicine, animal keeping, cultural practice and home aesthetics. These results show that the aroids are not merely wild or tended crops but functional backbones of the local livelihood systems, which also integrated into everyday subsistence as well as ritual activities.

The most diverse is medicinal use, 21 of the species are utilized in the amelioration of skin diseases, coughs, veterinary and postnatal treatment. There was similarly widespread culinary use, 18 species of which were prepared in many different traditional ways, such as boiled, cooked in acids, roasted, or fermented, displaying a detailed empirical understanding both of nutritional compounds, as well as anti-nutritional ones, such as calcium oxalate. An important part of animal welfare plays Aroids (as well) in elephant bathing (15 spp.) and as pig fodder (9 spp.), a sign to show that they are included in the livestock care.

In one example, the study provides evidence of a lot of sophistication among the Bodo people in their detox order or processing of their aroids with clear comprehension of the chemistry of the plant and much historical experience with food safety of plant origins. Community and plant Such aspects of this dynamic and multi-dimensional relationship demonstrated by cultural practices are the preparation of Napam, playing traditional games as well as packaging as well as umbrellas through the use of aroid leaves.

Besides, aroids are also valued in their ornamental use as such species as *Caladium bicolor* and *Syngonium auritum* are utilized as pod plants and ornamental vines.

Such a study upholds the significance of recording indigenous knowledge system as a biocultural conservation mechanism. The acquired insights are essential not only in maintaining the traditional practices but also act as sustainable agriculture, ethnopharmacology, and rural development in the northeastern part of India. As the impact of modernization and climate constraints continues to impinge on rural communities it is all the more desirable to incorporate such local knowledge into the conservation planning and learning and it is further needed in the light of the current situation of concern about the health of people.

Pharmacological validation, nutritional profiling and market potential of some species of the aroid family needs to be studied as future investigations to allow cultural background and economic empowerment in the area.

REFERENCES:

1. Barooah, C., & Ahmed, I. (2014). *Plant diversity of Assam: A checklist of angiosperms* (Vol. 45). Assam Science Technology and Environment Council.

2. Baruah, I. C. (1992). A systematic study of the angiosperms of Kamrup district, Assam [Doctoral dissertation, Gauhati University].
3. Boyce, P. C., & Croat, T. B. (2011). The Überlist of Araceae: Totals for published and estimated number of species in aroid genera. Retrieved from http://www.aroid.org/genera/160330uberlist.pdf
4. Choudhury, S. A. (2005). *Assam's Flora*. Assam Science Technology and Environment Council.
5. Das, D., Das, K., & Neog, B. (2014). Diversity of aroids (Araceae) in Nazira sub-division, Sivasagar (Assam). *Indian Journal of Plant Sciences*, 3(2), 35–41.
6. Devanjal, P., Dey, S., Das, M., & Basumatary, R. (2016). Medicinal plants of North East India: A study from different states. *International Journal of Herbal Medicine*, 4(3), 9–14.
7. Ezeabara, C. A., Okeke, C. U., Izundu, A. I., & Ogbuozobe, G. O. (2015). Anatomy and histochemical localization of calcium oxalate crystals in petioles of five varieties of *Colocasia esculenta* (L.) Schott. *International Journal of Advanced Biological Research*, 5(4), 303–308.
8. Ivancic, A., & Lebot, V. (2000). The genetics and breeding of taro. *Plant Genetic Resources Newsletter*, 123, 17–25.
9. Jiménez, P. D., Hentrich, H., Aguilar-Rodríguez, P. A., Krömer, T., Chartier, M., & Gibernau, M. (2019). A review on the pollination of aroids with bisexual flowers. *Annals of the Missouri Botanical Garden*, 104(1), 83–104. https://doi.org/10.3417/2018362
10. Karthikeyan, S., Jain, S. K., Nayar, M. P., & Sanjappa, M. (1989). *Florae Indicae: Enumeration Monocotyledonae* (Flora of India Series 4). Botanical Survey of India.
11. Matthews, P. J., & Medhi, D. (2014). Feasibility study for field research: Ethnobotany and ecology of wild and cultivated aroids in Assam State, Northeast India. *AREIPGR*, 30, 159–183.
12. Mayo, S. J., Bogner, J., & Boyce, P. C. (1997). *The genera of Araceae*. Royal Botanic Gardens, Kew.
13. Mutaqin, A. Z., Fatharani, M., Iskandar, J., & Partasasmita, R. (2018). Utilization of Araceae by local community in Cisoka Village, Cikijing Sub-district, Majalengka District, West Java, Indonesia. *Biodiversitas Journal of Biological Diversity*, 19(2), 590–601.
14. Pacheco-Trejo, J., Aquino Torres, E., Prieto Méndez, J., Reyes Santamaría, M. I., & Pérez Ríos, S. R. (2023). Pises (*Xanthosoma robustum*, Araceae): Traditional knowledge and sustainable farming practices of a neglected and underutilized crop in a Mexican Indigenous community. *Economic Botany*, 77(1), 1–17.
15. Talukdar, R. T., & Devi, N. (2015). Utilization of some aroids of Kamrup district of Assam, India. *East Himalayan Society for Spermatophyte Taxonomy*, 9(1), 131–139.