



## Local Knowledge of Traditional Medicine and Ethnic Food Duano, Kerinci and Suku Anak Dalam Jambi As a Natural Science Learning Resource

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### ABSTRACT

**Purpose of the study:** The aim of this research is to explore the concept of science (biology, physics, and chemistry) in traditional ethnic medicine and food of the Duano, Kerinci, and Suku Anak Dalam Jambi.

**Methodology:** This research examines the concept of science based on traditions and local knowledge as a source of science learning (biology, chemistry, and physics). Type of qualitative research with an ethnographic approach. Data was collected through observation, interviews, FGD, and documentation using Spradley model data analysis.

**Main Findings:** The research found that the Duano Dalam tribe has local traditions and knowledge, such as menorah sunburn, marine ecology, lung, and gulai making. The Kerinci tribe has local knowledge about ethnic medicine and food, including Betemas/Tasapa and surian chili sauce. Meanwhile, the Anak Dalam (SAD) tribe has a tradition of Besale and local knowledge of Batangas and fish Pekasam food. The collection of traditions and local knowledge of each tribe has the potential to become a basis for science concepts in learning.

**Novelty/Originality of this study:** The novelty or originality of the research entitled "Local Knowledge of Traditional Medicine and Ethnic Food of the Duano, Kerinci, and Anak Dalam Tribes as a Natural Science Learning Resource" lies in several key aspects. These aspects are 1) Local traditions and knowledge that can be used as a basis for science learning, 2) cultural and ethnographic perspectives as sources of science learning, 3) Interdisciplinary approaches, 4) Cross-Cultural Learning Potential, and 5) Conservation and Sustainable Practices.

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## 1. INTRODUCTION

Jambi, a province located on the Indonesian island of Sumatra, is famous for its rich cultural diversity and traditional practices. The traditional communities that inhabit this area include the Duano, Kerinci and Anak Dalam tribes, each of which has its own cultural heritage, including traditional medicine and ethnic food. This unique repository of local knowledge offers valuable insight into the natural sciences and provides an excellent learning resource for students and enthusiasts [1]. The Duano, Kerinci and Anak Dalam tribes have lived in harmony with their natural surroundings for generations. Their traditional practices are deeply rooted in a deep understanding of the local ecosystem, including the flora and fauna that thrive in Jambi's dense rainforests. This knowledge, passed down through oral tradition, not only enabled these communities to sustain themselves but also provided a basis for understanding various aspects of natural science. One of the most interesting aspects of the local lore of these tribes is their traditional medicine. The rainforests of Jambi are home to a wealth of plant

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and animal species, many of which have medicinal properties. The Duano, Kerinci and Anak Dalam communities have developed various herbal remedies to treat various diseases. Exploring the effectiveness and scientific basis of these traditional medicines can be an interesting and informative journey in the fields of botany, ethnobotany, pharmacology, and ecology [2]-[4].

Additionally, the ethnic foods of these tribes demonstrate their deep connection to their homeland and their culinary creativity. These dishes are often prepared using local ingredients, including unique plants and game found in the forest [5]. Understanding the science behind the ingredients, preparation methods, and nutritional value of these ethnic foods can provide insight into areas such as biology, nutrition, and chemistry. By studying local knowledge of traditional medicine and ethnic food of the Duano, Kerinci and Anak Dalam tribes in Jambi, students and researchers can gain a holistic perspective on natural science. This unique resource offers an opportunity to bridge the gap between traditional wisdom and modern scientific understanding, and foster a deeper appreciation of the relationship between humans and their environment. This research aims to explore and document the traditional knowledge of these tribes and its relevance in the context of natural science education [6]-[9]. By doing this, the program seeks to promote the preservation of local wisdom, foster cultural appreciation, and encourage the integration of local knowledge into the science education curriculum. In addition, it serves as a reminder that the diversity of cultures and traditions in the world is an invaluable source of knowledge and inspiration for the natural sciences and other fields. Before embarking on a journey into the world of traditional medicine and ethnic foods, it is important to provide some context about the Duano, Kerinci, and Anak Dalam tribes. These indigenous communities have lived in Jambi's lush landscape for generations, and their culture is linked to the region's rich biodiversity. The Duano tribe who live on the coast of the sea have a deep connection with the sea around them.

Their knowledge of marine resources, herbs, and natural medicine was passed down through oral tradition and direct experience, making them experts in the use of local plants for medicinal purposes. The Kerinci tribe, known for its agrarian lifestyle, relies on a wealth of traditional farming practices, such as rice cultivation, and the use of a variety of plants and herbs for food and healing. Their cuisine reflects their harmonious relationship with the land, and their knowledge is rooted in ecological wisdom. The Anak Dalam tribe, sometimes referred to as the Orang Rimba, are nomadic forest dwellers. Their knowledge of forest flora and fauna is extraordinary, and their use of these resources for food and medicine is unparalleled. Their existence embodies a deep synergy between humans and their natural habitat [10]. The ethnic cuisine of the Duano, Kerinci and Anak Dalam tribes is a reflection of their close connection to the environment. By studying their dietary practices, we can explore the science of nutrition, ecology, and sustainable food production. The use of a variety of locally sourced ingredients not only provides a delicious culinary experience but also highlights the importance of biodiversity and sustainable food systems.

Learning resources based on traditions and local knowledge aim to provide an overview of local knowledge about traditional medicine and ethnic food among the Duano, Kerinci and Anak Dalam tribes in Jambi. By examining their practices and beliefs, we can gain a better understanding of natural science and the profound interactions between humans and their natural environments [11]. This exploration invites us to appreciate and learn from the wisdom of these tribes, which is a very valuable resource for both cultural preservation and scientific enlightenment. This research explores and documents the traditional knowledge of these tribes and its relevance in the context of natural science education. Carrying out this research encourages the preservation of local wisdom, fosters cultural appreciation, and encourages the integration of local knowledge into the science education curriculum. Apart from that, it is also a reminder that the diversity of cultures and traditions in the world is a very valuable source of knowledge and inspiration for natural science and other fields.

## 2. RESEARCH METHOD

This type of qualitative research with an ethnographic approach was carried out from May 2022 to March 2023. The selection of this research location took into account several of these areas having potential. The implementation was carried out in three locations, namely the first location in the Simarantihan Suo-Suo Hamlet, Sumay District, Tebo Regency, the second location was Tanjung Solok, Kuala Jambi District, Tanjung Jabung Timur Regency, and the third location was Sungai Deras Village, Air Panas Timur District, Kerinci Regency, Jambi Province. Research that prioritizes processes is based on phenomena and concrete evidence in the field. This descriptive method aims to see a clear picture or description of the actual situation and conditions [12]. Data collection was carried out in natural settings (scientific conditions), primary data sources with data collection techniques by observation, interviews, focused discussions (FGD) and documentation [13]. Data were analyzed using descriptive qualitative Spradley Model (Domain, Taxonomy, Components, and Themes) in terms of data validity, data triangulation, NVivo, member review and thematic analysis. grouped based on findings then supported by references.

### 3. RESULTS AND DISCUSSION

Based on the results of observation data analysis, interviews, focused discussions (FGD) and documentation, the results of research on local knowledge of traditional medicine and ethnic food of the Duano and Kerinci tribes can be presented Table (1-2).

Table 1. Local Knowledge of Medicine and Ethnic Food of the Duano Tribe, Kerinci Tribe and Anak Dalam Tribe (SAD) Jambi.

Ethic Group	Local Knowledge Medicine	Etnofood
Duano	Ekologi laut, Kelung, Nemas and Menongkah mutik sumbun	Bekasam, Sirup Pedade, Gulaie Malung, Sumbun, and Nipah
Kerinci	Tasapa and Bauhing	Kancang Beruk, Air Serbuk Kawo, Sambal surian and Sirup Kayu Manis
Suku Anak Dalam/Anak Dalam Tribe (SAD)	Basale, Betanga, Melangun and Nuak	Pekasam, Ikgang Hasop, Umbut Rotan

Table 2. The relationship between medicine knowledge and ethnic food with natural science concepts

Ethic Group	Local Knowledge Medicine	Etnofood	Natural Science Concept
Duano	Ekologi laut, Kelung, Nemas and Menongkah mutik sumbun	Bekasam, Sirup Pedade, Gulaie Malung, Sumbun, and Nipah	Physics, Chemistry and Biology
Kerinci	Tasapa and Bauhing	Kancang Beruk, Air Serbuk Kawo, Sambal surian and Sirup Kayu Manis	Chemistry and Biology
Suku Anak Dalam/Anak Dalam Tribe (SAD)	Basale, Betanga, Melangun and Nuak	Pekasam, Ikgang Hasop, Umbut Rotan	Physics, Chemistry and Biology

Based on the results of the research on the first location respondents, namely the head of the Simarantihan Suku Anak Dalam (SAD) Hamlet and the community, it was possible to discuss the results of the research that there are several activities for the treatment of the Suku Anak Dalam, including the tradition of giving birth, the tradition of getting rid of diseases (healing) and the traditional simati tradition [14]. Researchers observed the treatment process from the beginning to the end where in the treatment. treatment uses medicinal plants, spells, music and traditional dances in a series called Besale which is an activity to cleanse the soul of someone who is sick due to evil spirits that reside within that person. [15] treatment of tribal children in using medicinal plants that grown naturally, utilization of plant parts such as leaves, flowers, roots and stems. The process of traditional medicine begins with a request from the community to help one of their members who is sick to a dukun. The ceremony is carried out with the preparation of tools and materials. One of them is the use of plants as medicine which is done in various ways, namely pasting, mashed, boiled, dried, grated, and mixed into accessories (Bracelets Reverse Oaths) with an odd number. The sale process starts from 19.00 WIB until 03.00 hours depending on the number of people to be treated. According to the head of the sub-district head, not all diseases. can be treated with Bersale medication. [16] The besale ritual is only carried out when medical treatment is no longer able to heal. Basale is a method of treatment or ritual of the tribe of children in which is done when general treatment can no longer be done. Basale traditional medicine is performed from dusk to dawn accompanied by mantras, medicinal plants as media and traditional musical accompaniment. Apart from that, food is very dependent on the diversity of the living environment which is sourced from plants and animals [17] what's interesting is the food ingredients of the tribe of anak dalam (SAD) fermentation of freshwater fish stored in bamboo and Asam Kemang. Apart from Basale, there is the Betangas tradition, which is a treatment that uses herbs and plants that are boiled and then steamed on people who are sick. Nuak is a tradition of caring for pregnant women by traditional healers whose aim is to provide health information, massage and preparation for childbirth. As shown in Figure 1(a-c) local knowledge of medicine, food ingredients and Jimat (counter accessories) for anak dalam (SAD).

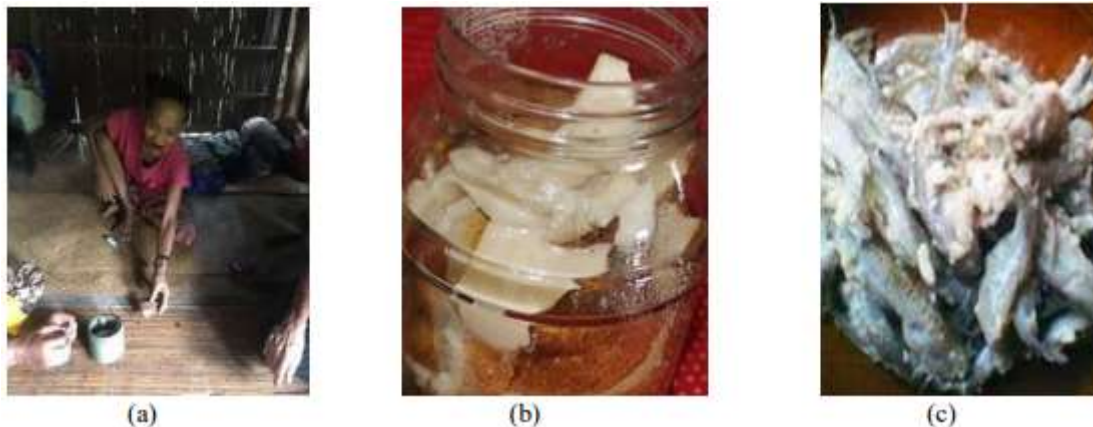


Figure 1. (a) Dukun Beranak, (b) Asam Kemang, (c) Pekasam

Whereas for respondents in the second location, namely the Duano Tribe and the people of Tajuk Solok, Kuala Jambi Subdistrict, East Tanjung Jabung Regency, a discussion of the results of the research can be carried out that the way of treatment for the Duano Tribe is generally related to Malay culture but has several differences, including the kelung tradition. Kelung is a traditional medicine to get rid of disease outbreaks and ask the creator and ancestors, however, Kelung treatment has started to be rarely done. The Duano tribe (sea tribe) is a tribe that has local knowledge of medicine which is always related to the potential of coastal natural resources and a thriving culture [18]. Apart from the Kelung Duano ritual, there is also the Sumbun tradition, which is a tradition of harvesting shellfish which is used as a traditional food ingredient which is rich in protein, calcium and other compounds that are good for the body. As shown in Figure 2 (a-c) Duano Etnofood.

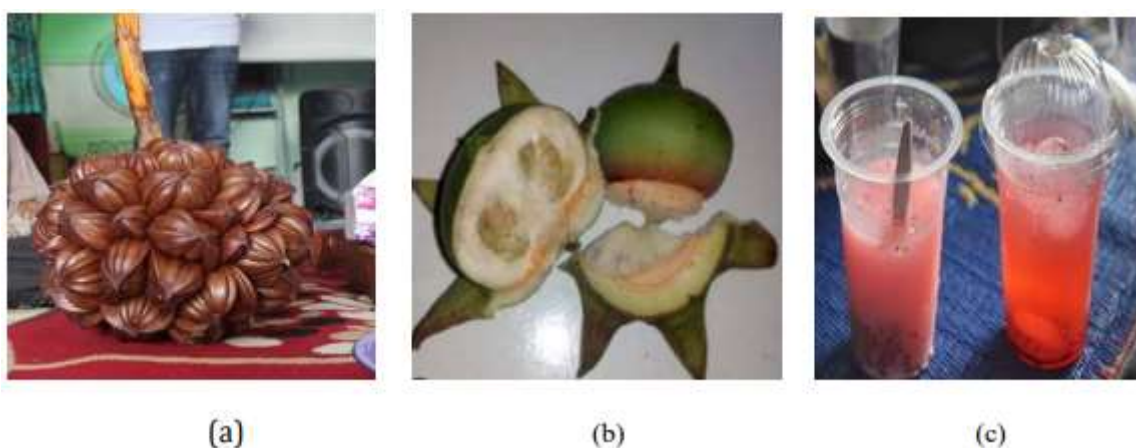


Figure 2. (a) Nipah fruit, (b) Pedade fruit, (c) Nipah fruit ice

Calcium is needed by children in their infancy and helps growth resilience. This is all local knowledge that needs to be documented in videos as a medium for community knowledge [19]. The sea tribe also has knowledge about a lifestyle of eating fish which is good for bone growth and prevents slow growth. All of these activities can be documented in the form of a video which can be a source of public health knowledge [20]. Information through video media can provide education and a way to store local knowledge of traditional medicine [21]-[22]. So that government programs on the importance of public health can be optimized.

Finally, in the third location respondents, namely the Kerinci Tribe and the people of Sungai Deras Village, Air Panas Timur Sub-District, Kerinci Regency, it was possible to discuss the results of the research that the method of treatment for the Kerinci Tribe is generally related to Malay culture but has some differences in each region, including local knowledge of Tasapa (Betamas) treatment which uses turmeric plant media whitening and mantra (Prayer). In addition to Tasapa, the rushing river area also has food ingredients such as Beruk's kancung, Kawo water, ubik Tuji, ubik Sakang Gigu, Ubik Tamakau Acang, and Bauhingk. [23] Arabica coffee is not only the fruit that is used but the leaves are also made into a drink. As shown in Figure 3 (a-c) the process of making tasapa/tetamas by shamans using turmeric as a food ingredient.

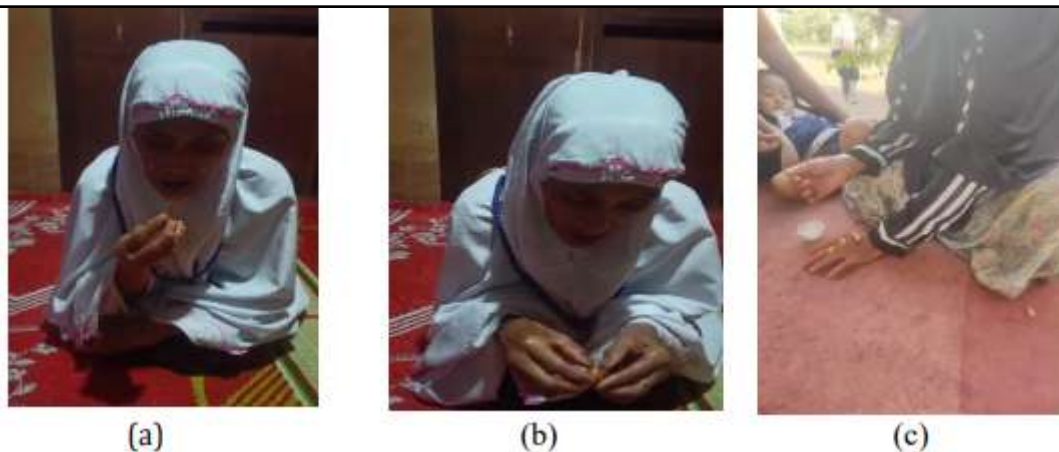


Figure 3. (a) Dukun, (b) Tasapa and (c) Nemas

The use of turmeric as a medium of treatment, where turmeric contains lots of antioxidants, essential oils, anti-inflammatories, vitamins B1, B2, B6, B12, Vitamin E and lecithin. All of these compounds can have an impact on health [24]-[26]. Local knowledge like this Jambi culture which must be preserved and documented as heritage [27]. Traditions need to be preserved and developed without changing [28]. If local and modern knowledge coincide, harmony will be formed between ethnic communities. The novelty or originality of the research entitled "Local Knowledge of Traditional Medicine and Ethnic Food of the Duano, Kerinci and Anak Dalam Tribes as a Natural Science Learning Resource" lies in several key aspects. These aspects are 1) Local traditions and knowledge can be used as a basis for science learning, 2) cultural and ethnographic perspectives as sources of science learning, 3) Interdisciplinary approaches, 4) Cross-Cultural Learning Potential and 5) Conservation and Sustainable Practices [29]-[31].

#### 4. CONCLUSION

Exploring local knowledge about traditional medicines and food ingredients of the Anak Dalam, Duano and Kerinci tribes can provide valuable insights and contribute to public health knowledge. There are important points in this research, namely the preservation of traditional knowledge, traditional medicine, Alternative Treatment Options and pharmacological research. Exploration of traditional medicines and food ingredients of the Anak Dalam tribe can lead to pharmacological research and the discovery of new bioactive compounds. Exploration of the local wisdom of traditional medicine and food ingredients of the Anak Dalam tribe (Basale, Betangas, Nuak, Pekasam, Umbut Rattan, Gelang Sawan, Sebaik Sumpah and Sengong), Duano (Kelung, henna, pedade fruit herbal medicine, nipah and fish bubble and Sumbun) Kerinci (Tasapa, Bauhing, Ubik Tamakau Acang, Ubik Saking Gigau) can be used as a base for science learning. This helps preserve traditional knowledge, in addition to providing alternative treatment options, encouraging pharmacological research, fostering cultural understanding and supporting sustainable practices and public health knowledge media.

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