



Ethnozoological Study of Animal-Based Traditional Medicine in Lorentak Hamlet, Entak Village, Ambal District, Kebumen Regency, Indonesia

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Abstract

This study aimed to document the animal species used in traditional medicine in Entak Village, Kebumen Regency, and to analyze community perceptions and the relative importance of each species. A qualitative descriptive approach was applied through structured interviews with 10 respondents selected using snow-ball sampling. The results identified 11 animal species utilized for various ailments, with most remedies involving the whole body, while others used specific parts such as meat, eggs, or mucus. The Use Value (UV) analysis showed variation in species importance, reflecting differences in preference and frequency of use. Scientific evidence supporting the wound-healing properties of *Channa striata* and *Achatina fulica* strengthens the validity of certain local practices, while the use of *Lepidochelys olivacea*, classified as Vulnerable (VU) by the IUCN, raises conservation considerations. Overall, the findings highlight the persistence of ethnomedicinal knowledge and the need for its documentation and sustainable management.

Keywords: Entak, ethnozoology, traditional medicine, use value (UV)

1. Introduction

Hunting is one of the oldest known human activities, undertaken not only for subsistence but also for protection against predators. Throughout history, animal-derived products have been utilized in diverse ways, primarily as food, but also as clothing, tools, and materials for medicinal and magico-religious purposes. This long-standing relationship of dependence has fostered strong emotional and cultural bonds between humans and certain animal species, many of which have been domesticated or kept as pets, particularly birds and mammals, and more recently reptiles and amphibians (Alves & Souto, 2015).

Ethnozoology is a field of study that examines the relationships and interactions between humans and animals, encompassing cultural perceptions, local systems of zoological classification, and community beliefs or myths related to fauna. It addresses both the biological and cultural dimensions of animal use, including their roles in food provision, traditional medicine, ritual practices, cosmetics, animal husbandry, and culturally embedded management and conservation systems (Iskandar, 2018). Throughout human history, animals have played a fundamental role in shaping cultural practices, ranging from providing food and raw materials to influencing religious beliefs and traditional healing systems. In many indigenous societies, extensive knowledge of animal behavior, anatomy, and habitat has been transmitted across generations, forming an integral part of traditional ecological knowledge (TEK) and cultural heritage (Stevenson, 2025).

Within this framework, ethnozoology plays a vital role in examining traditional ecological knowledge, which encompasses how local communities identify animal species, understand their ecological functions, and manage them through practices such as hunting, fishing, and domestication. This body of knowledge reflects a profound awareness of the interdependence between humans and animals and often underpins sustainable resource management systems developed over generations. Furthermore, animals frequently

carry symbolic and spiritual meanings in many cultures, where they may be regarded as totems, deities, or beings endowed with special powers that influence social structures, rituals, and customary practices. Ethnozoological research also highlights the widespread use of animals in traditional medicine, in which various animal parts such as bones, skins, venom, and organs are believed to possess healing properties, thereby illustrating the intricate cultural and biological dimensions of human–animal relationships (Stevenson, 2025).

Indonesia is recognized as one of the world's megabiodiverse countries, possessing an exceptionally high level of biological diversity. Alongside this ecological richness, the country also holds extensive traditional knowledge related to ethnozoology and ethnomedicine. Entak Village represents one of the communities where local people continue to uphold traditional knowledge and cultural practices, indicating strong potential for the existence of valuable ethnozoological knowledge. However, scientific documentation of ethnozoological practices in Entak Village, Kebumen Regency, remains limited, placing this knowledge at risk of being lost or abandoned. The ongoing processes of modernization and socio-cultural change further contribute to the gradual erosion of traditional knowledge systems within local communities (Bodeker, 2000). Therefore, this study aims to identify the animal species used in traditional medicine by the local community and to document the methods of their utilization, including the parts used and modes of preparation.

2. Materials and Methods

This study employed a qualitative descriptive approach. Descriptive research aims to systematically and accurately portray the characteristics and factual conditions of the subjects or phenomena under investigation as they naturally occur. The qualitative design was intended to gain an in-depth understanding of participants' experiences and perspectives through observation, interviews, and documentation.

2.1. Data Collection

Data collection was conducted over approximately two weeks in Entak Village, Ambal District, Kebumen Regency, from December 2025 to January 2026. The study employed a survey method through direct interviews with 10 respondents. Respondents were selected using a snowball sampling technique, beginning with a key informant who subsequently identified other knowledgeable individuals based on prior recommendations.

The criteria for respondent selection included elderly villagers, traditional medicine users, parents, hunters, and housewives, with an age range of 20–70 years. The key informant was a local traditional healer (dukun or tabib). Data were gathered using structured interviews with pre-prepared questions covering respondents' socio-demographic background, animals used for medicinal purposes, and community perceptions regarding traditional animal-based remedies.

2.2. Data Analysis

The interview results were compiled into a tabulated list of animals based on their local names. Species identification was carried out by matching local names with their common and scientific names, supported by visual confirmation using reference images shown to respondents.

The Use Value (UV) indicates the relative importance of a plant species recognized locally and is determined based on the number of use reports mentioned by each informant for a given species (Napa-goda, et al., 2014).

$$UV = \sum U/n, \quad (1)$$

Description:

UV = Use Value of a plant species

U = Number of informants who report knowledge or use of a particular species

n = Total number of respondents.

3. Results

3.1. Community Perceptions

Community perception was assessed based on three indicators: awareness of the species, frequency of encounter, and its utilization in traditional practices, presented in Figure 1.

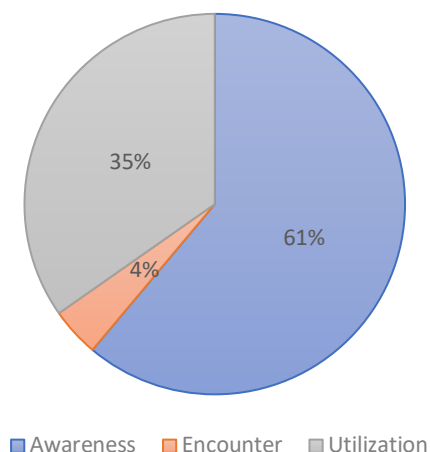


Figure 1. Community perceptions of animal species used in traditional medicine in Entak Village

3.2. Animal Identification

The results of the interviews revealed various animal species utilized by the community of Lorentak Hamlet as traditional medicinal resources. These species, along with their local names, common names, scientific names, parts used, therapeutic purposes, and methods of preparation and application, are presented in Table 1.

Table 1. List of Animal Species Used in Traditional Medicine Practices in Lorentak Hamlet, Entak Village

Local Name	Common Name	Scientific Name	Part Used	Utilization	Method of Application
Undur-undur/tembukur	Antlion larva	<i>Myrmeleon</i> sp.	Whole body	Treatment for diabetes	Consumed alive
Cecek	House gecko	<i>Hemidactylus frenatus</i>	Whole body	Treatment for enuresis	Roasted and then consumed with rice
Tekek	Tokay gecko	<i>Gekko gekko</i>	Whole body	Antipruritic treatment	The meat is roasted and eaten, while the skin is applied topically to itchy areas of the skin
Welut	Asian swamp eel	<i>Monopterus albus</i>	Whole body	To promote early walking in infants ¹	Waved over the infant's legs as part of a traditional practice
Bekicot	Giant African snail	<i>Achatina fulica</i>	Mucus secretion	Wound treatment	The mucus is applied topically to the wound
Bayong	Snake-head fish	<i>Channa striata</i>	Whole body	Post-surgical healing	The meat is steamed and consumed
Wedhus	Goat	<i>Capra hircus</i>	Meat	Treatment for hypotension	The meat is roasted and consumed
Ula	Snake	Serpentes	Meat	Antipruritic treatment	The meat is roasted and consumed
Penyu pasiran	Olive ridley sea turtle	<i>Lepidochelys olivacea</i>	Egg	To enhance stamina	The eggs are consumed raw or cooked
Lintah	Leech	<i>Hirudo medicinalis</i>	Whole body	Blood purification remedy ²	Applied to specific body points to allow the leech to draw out "impure" blood
Coro	Cockroach	<i>Periplaneta americana</i>	Whole body	Treatment for toothache	Roasted and then applied to the affected tooth

¹Utilized in cultural ritual practices; ²Traditionally used term.

3.3. Use Value (UV)

An analysis of Use Value (UV) for various fauna species reveals diverse levels of utilization by local communities as traditional resources. Based on the data presented, catfish recorded the highest UV value, approaching 1.0, indicating a very high preference for or dependence on this species. This is followed by the goat and the giant African snail, which also have significant levels of utilization. Conversely, species such as the cockroach show the lowest UV values, indicating that although these species are documented in ethnozoological practices, the intensity or frequency of their use in daily life is relatively more limited compared to other animal commodities (Figure 2).

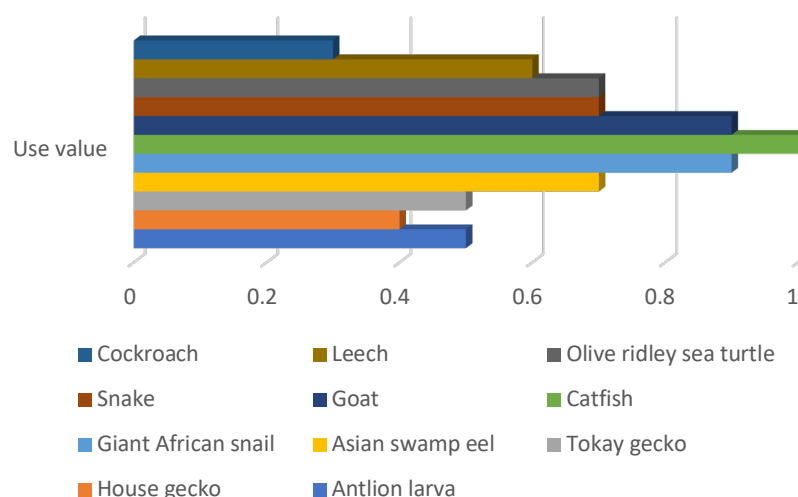


Figure 2. The Use Value (UV) of animal species used as traditional medicine in Entak Village

4. Discussion

The findings indicate that community perceptions in Entak Village are predominantly characterized by a high level of awareness (61%) regarding animal species used in traditional medicine, while the proportion of respondents who directly encounter (4%) and actively utilize (35%) these animals is comparatively lower. This pattern suggests that ethnomedicinal knowledge remains widely recognized within the community, even though its practical application is not uniformly practiced by all members. The relatively small percentage of direct encounters may reflect ecological changes, decreasing availability of certain species, or shifting lifestyles that limit interaction with local fauna. Nevertheless, the continued utilization rate demonstrates that traditional medicinal practices are still maintained by a substantial portion of the community, indicating the persistence of traditional ecological knowledge despite ongoing socio-cultural transformation.

The identification of 11 animal species used in traditional medicine in Lorentak Hamlet reflects a rich and diverse ethnozoological system that integrates empirical experience with cultural beliefs. Based on Table 1, most remedies involve the use of the whole body, such as antlion larvae (*Myrmeleon* sp.), house gecko (*Hemidactylus frenatus*), tokay gecko (*Gekko gekko*), Asian swamp eel (*Monopterus albus*), leech (*Hirudo medicinalis*), and cockroach (*Periplaneta americana*), indicating a holistic perception that medicinal properties are distributed throughout the organism. In contrast, certain species are utilized selectively, such as goat (*Capra hircus*) and snake (Serpentes) for their meat, olive ridley sea turtle (*Lepidochelys olivacea*) for its eggs, and giant African snail (*Achatina fulica*) for its mucus secretion. The range of ailments treated includes metabolic disorders (diabetes), urinary problems (enuresis), skin conditions (itching and wounds), traditional circulatory concepts such as “blood purification,” hypotension, post-surgical recovery, toothache, and stamina enhancement. This diversity indicates that animal-based remedies are applied to both minor ailments and more serious health conditions within the community.

The preparation and application methods described in the table reveal a combination of practical techniques and symbolic healing practices. Several remedies involve roasting and consuming the animal (e.g., gecko, snake, goat, cockroach), suggesting a belief in internal therapeutic effects through ingestion.

Others are applied topically, such as snail mucus for wound healing and tokay gecko skin for treating itching, reflecting a direct functional approach. Scientific studies also support some of these practices. Extracts of snakehead fish (*Channa striata*) have been shown to biologically accelerate new tissue formation (fibroblast and epithelial proliferation), enhance neovascularization, and effectively promote wound healing in diabetic conditions and perineal wounds, due to their high protein and albumin content (Tamales et al., 2016). Similarly, research demonstrates that mucus from the giant African snail (*Achatina fulica*) significantly increases fibroblast counts in wounds (Oroh et al., 2015) and accelerates burn wound healing through anti-inflammatory mechanisms and enhanced tissue regeneration (Song et al., 2021). These findings provide scientific support for local ethnomedicinal practices. However, it is important to note that the olive ridley sea turtle (*Lepidochelys olivacea*) is currently classified as Vulnerable (VU) on the IUCN Red List due to ongoing population declines caused by egg exploitation, fisheries bycatch, and habitat loss (IUCN, 2018), highlighting the need to consider conservation implications in traditional medicinal use of wildlife.

The Use Value (UV) data demonstrate variation in the relative importance of animal species used in traditional medicine in Entak Village, indicating differences in community preference and frequency of utilization. Species with higher UV scores, such as catfish, goat, snake, and olive ridley sea turtle, reflect a greater number of use reports and suggest that these animals are more widely recognized and trusted for their therapeutic benefits. In contrast, species with lower UV values, including house gecko, antlion larva, and cockroach, appear to be more selectively used or known by fewer informants, possibly due to limited availability, specific indications, or generational differences in knowledge transmission. These differences in UV values highlight the dynamic nature of traditional medicinal practices, where certain species maintain strong cultural relevance while others may gradually decline in use.

5. Conclusions

Overall, the ethnomedicinal practices in Entak Village demonstrate the persistence of traditional ecological knowledge, reflected in diverse animal-based remedies that are culturally embedded and partially supported by scientific evidence. However, the utilization of certain wildlife species, particularly the olive ridley sea turtle (*Lepidochelys olivacea*), underscores the need to integrate conservation awareness into the sustainable management of traditional medicinal practices.

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