

## LEXICAL AND PHONOLOGICAL COMPARISON OF DAYAK NGAJU AND KATINGAN LANGUAGES: EVIDENCE OF AUSTRONESIAN AFFILIATION

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### Abstract

This study explores the historical relationship between the Dayak Ngaju and Katingan languages through a comparative lexical and phonological analysis. A total of 225 word pairs were examined using lexicostatistical and historical phonology methods. Each pair was classified into one of three categories: cognates, likely cognates, and non-cognates. The findings show that 46.22% of the pairs are clear cognates, 22.22% are likely cognates, and 31.56% are non-cognates. In addition to lexical similarities, phonological processes such as apheresis, apocope, paragoge, and single phoneme differences were identified, further supporting their genealogical relationship. These patterns indicate that the two languages likely descend from a common proto-language within the Austronesian family. Core vocabulary items such as “water,” “dog,” and “bird” remain identical, reflecting lexical stability. The study not only affirms a strong linguistic connection between Ngaju and Katingan but also contributes to the preservation of regional languages by documenting their historical and structural ties.

**Keywords:** Dayak Languages, Ngaju, Katingan, Cognates, Austronesian

### INTRODUCTION

The Dayak Ngaju and Katingan languages are two regional languages widely spoken in Central Kalimantan. Although these languages are used by communities that are geographically close and culturally similar, there has been little scientific research systematically examining their lexical and phonological relationships. Language serves as a marker of a community’s collective identity, and historical linguistic studies can be an important tool in understanding the origins and developmental dynamics of a language.

The Austronesian language family comprises thousands of languages spread from Madagascar to the Pacific. Dayak languages fall within the Southwest Kalimantan subgroup and exhibit a rich diversity of branches. This study aims to answer the questions: Do the Ngaju and Katingan languages originate from a common proto-language? To what extent do they share lexical and phonological similarities?

Through the analysis of cognates and sound changes, this research contributes to the field of historical linguistics and forms part of the broader effort to preserve regional languages that are increasingly threatened by the dominance of national and global languages.

### RESEARCH METHODS

This study employs a descriptive-qualitative approach using the comparative linguistic method, focusing on the analysis of word forms and meanings in two languages: Dayak Ngaju and Dayak Katingan. This approach was chosen because it aligns with the primary aim of the research—to identify the extent of the historical and genetic relationship between the two languages through the comparison of lexical forms and phonological change patterns.

The main data in this study consist of 225 pairs of basic vocabulary items drawn from both languages. The selected vocabulary

focuses on core words that are generally universal, essential in daily communication, and relatively resistant to change over time, such as words for “water,” “fire,” “human,” “eat,” and “sleep.”

Data were collected through a literature review of local language documentation, regional language dictionaries, and credible linguistic sources. Additionally, the data were validated directly with native speakers of Dayak Ngaju and Katingan to ensure the authenticity of the word forms and their contextual use in everyday life. Each word pair was then manually analyzed and classified into three categories based on phonetic similarity and semantic meaning: (1) Cognates (Yes), referring to word pairs with identical forms and meanings; (2) Likely Cognates (Likely), referring to word pairs that share similarities in form and meaning but show minor phonological variation; and (3) Non-cognates (No), referring to word pairs with significant differences in both form and meaning, making it unlikely that they derive from a common root.

To strengthen the lexical findings, a phonological analysis was conducted on word pairs that showed similarities but were not identical. This analysis aimed to identify common sound change patterns that typically occur in language evolution. Some phonological changes observed in this study include apheresis (loss of initial sounds), apocope (loss of final sounds), paragoge (addition of sounds at the end), and single-phoneme differences (e.g., glottal stops or vowel shifts). These phonological processes were analyzed based on the phonetic forms of the word pairs and possible morphophonemic influences in each language. The presence of such patterns serves as a key indicator in determining whether differently shaped words may still derive from the same root.

During the analysis phase, all data were systematically and contextually examined, taking into account semantic, phonetic, and morphological distribution factors. Validation was carried out through data triangulation by involving two independent linguistic

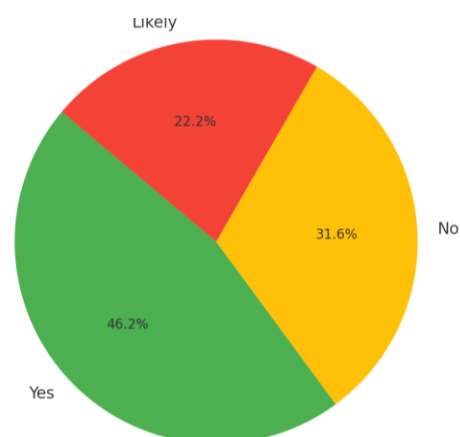
researchers to avoid classification bias and by rechecking word usage contexts through informal interviews with native speakers. The results of the analysis were then presented in both quantitative forms (percentages and frequencies) and qualitative forms (patterns of sound and meaning changes). This approach allows the researcher not only to identify surface-level similarities between words but also to trace, both phonologically and semantically, how these words may be historically connected within the framework of language evolution.

Thus, this method provides a solid foundation for proving the genealogical relationship between the Dayak Ngaju and Katingan languages through systematic, valid, and academically accountable lexical and phonological analysis. It also enables a broader understanding of language change dynamics within the local context of Central Kalimantan and reinforces the importance of regional language documentation as part of preserving cultural heritage.

## RESULT AND DISCUSSION

From a total of 225 word pairs, the following were found:

**Figure 1.** Pie Chart – Lexical Relationship



**Table 1.** Cognate Distribution

| Category         | Number of Words | Percentage (%) |
|------------------|-----------------|----------------|
| Cognate (Yes)    | 104             | 46.22%         |
| Possible Cognate | 50              | 22.22%         |
| Not Cognate (No) | 71              | 31.56%         |
| <b>Total</b>     | <b>225</b>      | <b>100%</b>    |

The results of this study indicate that the relationship between the Dayak Ngaju and Katingan languages is not merely geographical and cultural, but also deeply rooted in their lexical and phonological structures. Out of the 225 word pairs analyzed, 104 pairs (46.22%) were identified as exact cognates, meaning that the words have identical forms and meanings in both languages. This reflects a strong historical linguistic continuity and a high degree of preservation of core vocabulary forms in both languages.

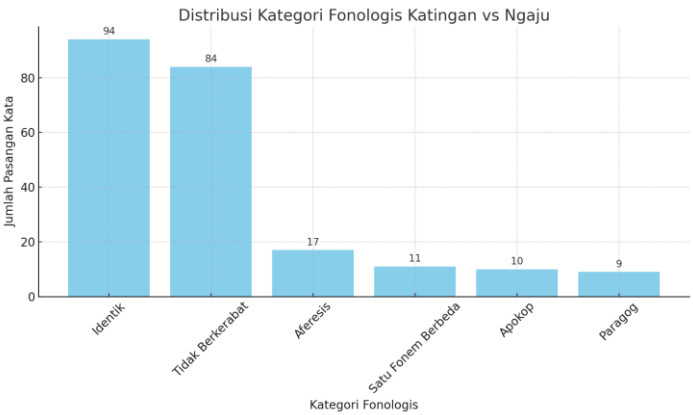
Furthermore, 50 word pairs (22.22%) were categorized as likely cognates—words that share nearly identical phonetic forms and equivalent meanings, despite minor phonological variations. These variations are not significant enough to indicate different roots, suggesting that these words originated from the same root but have undergone slight sound evolution. This provides evidence of internal linguistic dynamics that maintain semantic function even as phonological forms shift slightly.

Meanwhile, 71 word pairs (31.56%) did not show a clear cognate relationship. These pairs differ significantly in both phonological form and meaning, indicating that they likely derive from different roots—possibly as a result of local innovation, borrowing from other languages, or extreme semantic divergence in context and usage.

The distribution of these categories shows that about two-thirds (68.44%) of the analyzed word pairs exhibit either cognate or likely cognate relationships. This figure is significant, as it suggests that the Ngaju and Katingan languages most likely originate from

a common proto-language within the Austronesian family. The fact that more than half of the total vocabulary analyzed retains strong lexical and phonetic similarity reinforces this claim.

**Figure 2.** Bar Chart – Phonological Category Distribution



### Phonological Analysis

Beyond lexical similarities, this study also identified consistent phonological change patterns between the two languages. A total of 94 word pairs (41.78%) showed no phonological changes whatsoever—classified as identical pairs. These represent the strongest category of cognates and most directly indicate a close genealogical relationship between the two languages.

However, several phonological processes were observed in non-identical word pairs that still share common roots, including:

#### 1. Apheresis

Apheresis refers to the removal of one or more sounds from the beginning of a word. This phonological process often occurs as a natural part of language evolution, particularly in spoken or informal registers, where efficiency of articulation is prioritized.

In this study, several word pairs between Dayak Ngaju and Katingan languages exhibit apheresis, such as *amas/bulau* → *amas* and *jukung/bakis* → *jukung*. These examples indicate that the initial phoneme(s) in the Katingan forms

have been omitted in their Ngaju counterparts, or vice versa, depending on the direction of comparison.

The presence of apheresis in these pairs reflects a tendency toward phonological simplification. It often arises in fast-paced or casual speech and may also result from shifting stress patterns, where unstressed initial syllables are more prone to reduction or deletion. This process does not necessarily alter the semantic content of the words but rather highlights a natural phonetic variation within historically related forms.

## 2. Apocope

Apocope is the phonological process involving the omission of one or more sounds at the end of a word. This process typically emerges as a natural consequence of phonetic erosion over time and is commonly observed in various stages of language evolution.

In the context of this study, examples of apocope include word pairs such as *ikaw* → *ikau* and *'epat* → *epat*. These forms illustrate the reduction of final phonemes in either the Dayak Ngaju or Katingan variants, depending on their historical trajectory.

Apocope frequently occurs in dialectal variations and informal speech, where speakers tend to simplify articulation by dropping terminal sounds. Although this reduction alters the phonetic shape of the word, it generally does not change its core meaning. Thus, apocope serves as evidence of internal phonological evolution while preserving semantic continuity within related lexical items.

## 3. Paragoge

Paragoge is a phonological process that involves the addition of one or more sounds at the end of a word. This addition is typically not rooted in the original morpheme but arises as a result of

phonetic adaptation or metrical adjustment within a language's phonological system.

In this study, paragoge is exemplified by word pairs such as *ewei* → *eweh* and *ulun* → *uluh*. These examples show that an extra sound, often a vowel or consonant, is appended to the word-final position in one of the language variants.

Paragoge commonly occurs to conform a word's structure to the dominant syllabic or prosodic pattern of a given language. It may also function to create a sense of phonetic balance or completeness in pronunciation. While this process alters the phonetic form, it typically does not affect the meaning of the word, thus maintaining its lexical identity across languages or dialects.

## 4. Single Phoneme Difference

Single phoneme difference refers to minor phonological variations between word pairs, typically involving the insertion, deletion, or substitution of a single sound, such as a glottal stop or a vowel shift. These subtle changes often occur without altering the overall structure or semantic content of the word.

In this research, such cases are illustrated by pairs like *bawi'* → *bawi* and *dia'* → *dia*. The glottal stop present in one variant is absent in the other, yet both forms remain phonologically close and semantically equivalent.

Although these variations introduce slight phonetic divergence, they do not undermine the genealogical connection between the words. Instead, they represent surface-level phonetic adjustments that may result from dialectal influences, speaker habits, or prosodic tendencies. Therefore, these forms can still be categorized as loose cognates, reinforcing the historical relatedness of the compared lexical items.

A total of 47 word pairs (20.88%) displayed these phonological processes (apheresis, apocope, paragoge, or single

phoneme difference), indicating internal phonetic evolution without semantic root change. These processes are key indicators that phonological differences do not necessarily signal different word origins.

Meanwhile, 84 word pairs (37.33%) exhibited significant phonetic and lexical differences and were categorized as non-cognate. These differences may result from local innovations, language contact with external groups, or semantic shifts that obscure the original connection. Examples of such cases include *mulut* (Katingan) and *nyama* (Ngaju), as well as *ingam* and *anak*. These pairs display no observable phonetic resemblance, suggesting that they originate from entirely different roots and do not share a common etymological background.

### Stability of Core Vocabulary

It is worth noting that the most stable and unchanged words between the two languages tend to be basic or primary vocabulary essential to daily life. Words like *danum* (water), *asu* (dog), *manuk* (bird), and *puring* (leaf) maintain identical forms and meanings in both languages. This supports a key theory in historical linguistics: core vocabulary is the slowest to change and the strongest indicator of genealogical relationships among languages.

Considering all these findings, it is evident that the Dayak Ngaju and Katingan languages share significant structural closeness. The high degree of cognacy and consistent patterns of phonological change provide strong evidence that both languages descend from the same linguistic root—the Austronesian language family. The variations observed are more reflective of natural phonetic divergence and local innovation rather than fundamental differences in word origins.

Thus, the relationship between these two languages is not only culturally related but also structurally linguistic, reinforcing the importance of documentation and preservation of regional languages as part of the nation's intellectual heritage.

### CONCLUSION

Based on the analysis of 225 word pairs, it can be concluded that the Dayak Ngaju and Katingan languages exhibit a high degree of relatedness, both lexically and phonologically. With 68.44% of the word pairs classified as cognates, and the presence of consistent and predictable phonological processes, the historical connection between the two languages is very strong.

The stability of core vocabulary such as “water,” “dog,” “bird,” and “wood” indicates that both languages have preserved the same linguistic heritage from their Austronesian ancestors. Processes like apheresis and apocope are natural results of phonetic evolution, rather than evidence of different word origins.

This research opens opportunities for further studies on the reconstruction of the Proto-Dayak language and the preservation of endangered local languages. Moreover, the findings also carry practical implications for the development of local content curricula and mother tongue instruction in the Central Kalimantan region.

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## APPENDIX

| No | Bahasa Katingan                    | Bahasa Ngaju           | Kognat | Reason                                | Catatan                     |
|----|------------------------------------|------------------------|--------|---------------------------------------|-----------------------------|
| 1  | kawu                               | kawu                   | Yes    | Identical form                        | Tidak ada perubahan         |
| 2  | danum                              | danum                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 3  | uhat                               | uhat                   | Yes    | Identical form                        | Tidak ada perubahan         |
| 4  | yaku                               | aku                    | Likely | Similar form, possibly related        | Penghilangan bunyi akhir    |
| 5  | ingam                              | anak                   | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 6  | riwut                              | riwut                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 7  | asu                                | asu                    | Yes    | Identical form                        | Tidak ada perubahan         |
| 8  | narai                              | narai                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 9  | apoi/apoy                          | apui                   | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 10 | lapang, kakapus, lembut            | lampang                | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 11 | asep                               | asep                   | Yes    | Identical form                        | Tidak ada perubahan         |
| 12 | nambu'                             | hunjun                 | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 13 | manuk                              | manuk                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 14 | urak                               | bawuy / bawoy / bawui  | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 15 | puring                             | puring                 | Yes    | Identical form                        | Tidak ada perubahan         |
| 16 | misik                              | misik                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 17 | penda/ngiwa'                       | penda                  | Yes    | Different roots or significant change | Penghilangan bunyi awal     |
| 18 | bahanyi                            | bahanyi                | Yes    | Identical form                        | Tidak ada perubahan         |
| 19 | behas                              | behas                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 20 | tende                              | tende                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 21 | barasih                            | barasih                | Yes    | Identical form                        | Tidak ada perubahan         |
| 22 | sanaman                            | sanaman                | Yes    | Identical form                        | Tidak ada perubahan         |
| 23 | mulut                              | nyama                  | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 24 | humung, dungu, bureng              | bareh / mameh / bureng | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 25 | nganan                             | nganan                 | Yes    | Identical form                        | Tidak ada perubahan         |
| 26 | nguap                              | buka                   | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 27 | bukit                              | bukit                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 28 | bawute'                            | babute                 | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 29 | en arak, en arake, enarak, enarake | kenampi                | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 30 | mapoy                              | tusul                  | No     | Different roots or significant change | Perbedaan bentuk signifikan |

|    |                        |                       |        |                                       |                             |
|----|------------------------|-----------------------|--------|---------------------------------------|-----------------------------|
| 31 | are                    | are                   | Yes    | Identical form                        | Tidak ada perubahan         |
| 32 | apang, yapang, nyapang | apang / bapa / apa    | Likely | Different roots or significant change | Perbedaan bentuk signifikan |
| 33 | meter                  | menter                | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 34 | taheta                 | taheta / puga / harun | Yes    | Identical form                        | Penghilangan bunyi awal     |
| 35 | bisa                   | bisa                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 36 | batu                   | batu                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 37 | boa/buah               | bujur                 | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 38 | kembang                | kembang               | Yes    | Identical form                        | Tidak ada perubahan         |
| 39 | hanangui               | hanangui              | Yes    | Identical form                        | Tidak ada perubahan         |
| 40 | nanjung                | nanjung               | Yes    | Identical form                        | Tidak ada perubahan         |
| 41 | bebehat                | bebehat               | Yes    | Identical form                        | Tidak ada perubahan         |
| 42 | nenga                  | nenga                 | Yes    | Identical form                        | Tidak ada perubahan         |
| 43 | hae                    | hai                   | Likely | Similar form, possibly related        | Penambahan bunyi di akhir   |
| 44 | metu                   | metu                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 45 | bua                    | bua                   | Yes    | Identical form                        | Tidak ada perubahan         |
| 46 | beken                  | beken                 | Yes    | Identical form                        | Tidak ada perubahan         |
| 47 | bulan                  | bulan                 | Yes    | Identical form                        | Tidak ada perubahan         |
| 48 | bulu                   | bulu                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 49 | kambang/bunge          | kambang               | Yes    | Identical form                        | Penghilangan bunyi awal     |
| 50 | munu                   | patei                 | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 51 | buruk                  | maram                 | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 52 | lukeng                 | handalai              | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 53 | capat                  | capat                 | Yes    | Identical form                        | Tidak ada perubahan         |
| 54 | nyium                  | sium                  | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 55 | manuku                 | menyau                | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 56 | daging                 | daging                | Yes    | Identical form                        | Tidak ada perubahan         |
| 57 | tutang                 | tuntang               | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 58 | tasik                  | danau                 | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 59 | daha                   | daha                  | Yes    | Identical form                        | Tidak ada perubahan         |
| 60 | dayung                 | besei                 | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 61 | hanya                  | hanya                 | Yes    | Identical form                        | Tidak ada perubahan         |

|    |                           |             |        |                                       |                             |
|----|---------------------------|-------------|--------|---------------------------------------|-----------------------------|
| 62 | hunjuh luar               | melai luar  | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 63 | nangguh nganing           | melai kanih | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 64 | dumah                     | dumah       | Yes    | Identical form                        | Tidak ada perubahan         |
| 65 | bara                      | bara        | Yes    | Identical form                        | Tidak ada perubahan         |
| 66 | dawen                     | dawen       | Yes    | Identical form                        | Tidak ada perubahan         |
| 67 | kawu                      | kawu        | Yes    | Identical form                        | Tidak ada perubahan         |
| 68 | dani                      | tukep       | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 69 | lewu                      | lewu        | Yes    | Identical form                        | Tidak ada perubahan         |
| 70 | dengan                    | dengan      | Yes    | Identical form                        | Tidak ada perubahan         |
| 71 | hening                    | hining      | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 72 | suang                     | melai huang | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 73 | ngasuey                   | melai kueh  | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 74 | sadingen                  | sadingen    | Yes    | Identical form                        | Tidak ada perubahan         |
| 75 | mendeng                   | mendeng     | Yes    | Identical form                        | Tidak ada perubahan         |
| 76 | nanggu situh              | melai hetuh | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 77 | nganih/ie'/siye'/ngasiye' | melai hete  | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 78 | nucu'                     | nulak       | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 79 | due                       | due         | Yes    | Identical form                        | Tidak ada perubahan         |
| 80 | munduk                    | munduk      | Yes    | Identical form                        | Tidak ada perubahan         |
| 81 | ikuh                      | ikuh        | Likely | Similar form, possibly related        | Penghilangan bunyi awal     |
| 82 | 'epat                     | epat        | No     | Different roots or significant change | Penghilangan bunyi akhir    |
| 83 | amas/bulau                | amas        | No     | Different roots or significant change | Penghilangan bunyi awal     |
| 84 | ikaw                      | ikau / ikaw | No     | Different roots or significant change | Penghilangan bunyi akhir    |
| 85 | uyah                      | uyah        | Yes    | Identical form                        | Tidak ada perubahan         |
| 86 | manggayu'                 | gayau       | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 87 | seput                     | baseput     | Likely | Similar form, possibly related        | Penghilangan bunyi akhir    |
| 88 | kasinge'                  | kasinga     | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan |
| 89 | makit                     | ngirut      | No     | Different roots or significant change | Perbedaan bentuk signifikan |
| 90 | atei                      | atei        | Yes    | Identical form                        | Tidak ada perubahan         |
| 91 | urung                     | urung       | Yes    | Identical form                        | Tidak ada perubahan         |

|     |                     |                             |        |                                       |                                |
|-----|---------------------|-----------------------------|--------|---------------------------------------|--------------------------------|
| 92  | belum               | belum                       | Yes    | Identical form                        | Tidak ada perubahan            |
| 93  | bahijaw             | bahijau                     | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 94  | nyi'ip              | minyop                      | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 95  | babilem             | babilem                     | Yes    | Identical form                        | Tidak ada perubahan            |
| 96  | ninggap             | mise                        | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 97  | parak kayu/parakayu | himba                       | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 98  | umay/umai           | inay / indu / indang / umay | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 99  | laok/lauk           | lauk                        | No     | Different roots or significant change | Penghilangan bunyi akhir       |
| 100 | meteng              | meteng                      | Yes    | Identical form                        | Tidak ada perubahan            |
| 101 | inat                | bingat                      | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 102 | sawey/sawan         | sawan                       | Yes    | Identical form                        | Penghilangan bunyi akhir       |
| 103 | tuh/jie             | jituh / tuh                 | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 104 | je/janih            | jikau / jite / kau / te     | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 105 | kecau               | kejau                       | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 106 | pai'                | pai                         | Likely | Similar form, possibly related        | Perbedaan kecil (glottal stop) |
| 107 | amun                | amun                        | Yes    | Identical form                        | Tidak ada perubahan            |
| 108 | ikei                | ikein                       | Likely | Similar form, possibly related        | Penghilangan bunyi awal        |
| 109 | ketun               | ikau / ikaw                 | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 110 | kame'               | ketun                       | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 111 | mere'               | ketun due                   | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 112 | gatau'              | gantau                      | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 113 | kalahi              | kalahi                      | Yes    | Identical form                        | Tidak ada perubahan            |
| 114 | takuluk/kuluk       | kulok / kuluk / takuluk     | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 115 | teah/keang          | keang / keyang              | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 116 | sambil              | sambil                      | Yes    | Identical form                        | Tidak ada perubahan            |
| 117 | hebes, bebes        | bebes                       | No     | Different roots or significant change | Penghilangan bunyi akhir       |
| 118 | barikang            | paringkong                  | No     | Different roots or significant change | Perbedaan bentuk signifikan    |

|     |                          |                                                |        |                                       |                                |
|-----|--------------------------|------------------------------------------------|--------|---------------------------------------|--------------------------------|
| 119 | belikek/balike'          | papa                                           | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 120 | silut                    | silu                                           | Likely | Similar form, possibly related        | Penghilangan bunyi awal        |
| 121 | upak                     | upak                                           | Yes    | Identical form                        | Tidak ada perubahan            |
| 122 | bahenda                  | bahenda                                        | Yes    | Identical form                        | Tidak ada perubahan            |
| 123 | guti'                    | guti                                           | Yes    | Identical form                        | Perbedaan kecil (glottal stop) |
| 124 | tana, ladang kecil tapoy | tana                                           | No     | Different roots or significant change | Penghilangan bunyi awal        |
| 125 | langau                   | langau                                         | Yes    | Identical form                        | Tidak ada perubahan            |
| 126 | tahi                     | tahi                                           | Yes    | Identical form                        | Tidak ada perubahan            |
| 127 | lapas                    | lapas                                          | Yes    | Identical form                        | Tidak ada perubahan            |
| 128 | talingow                 | talingau                                       | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 129 | beken                    | beken                                          | Yes    | Identical form                        | Tidak ada perubahan            |
| 130 | lumbah                   | lebar                                          | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 131 | uyat                     | uyat                                           | Yes    | Identical form                        | Tidak ada perubahan            |
| 132 | hatue                    | hatue                                          | Yes    | Identical form                        | Tidak ada perubahan            |
| 133 | malisen                  | malisen                                        | Yes    | Identical form                        | Tidak ada perubahan            |
| 134 | jela                     | jela                                           | Yes    | Identical form                        | Tidak ada perubahan            |
| 135 | napayah                  | ture /<br>mananture /<br>payah /<br>manampayah | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 136 | lime                     | lime                                           | Yes    | Identical form                        | Tidak ada perubahan            |
| 137 | luca                     | luja                                           | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 138 | bucur                    | lurus                                          | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 139 | busaw                    | busau                                          | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 140 | tatimun                  | tantimun                                       | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 141 | wayah panucan            | Musim hujan                                    | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 142 | wayah pandang            | Musim panas                                    | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 143 | main                     | bangang                                        | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 144 | kuman                    | kuman                                          | Yes    | Identical form                        | Tidak ada perubahan            |
| 145 | hamalem                  | hamalem                                        | Yes    | Identical form                        | Tidak ada perubahan            |
| 146 | kueh                     | kueh                                           | Yes    | Identical form                        | Tidak ada perubahan            |
| 147 | matei                    | mata                                           | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |

|     |               |             |        |                                       |                                |
|-----|---------------|-------------|--------|---------------------------------------|--------------------------------|
| 148 | maten andaw   | matan andau | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 149 | matei         | matei       | Yes    | Identical form                        | Tidak ada perubahan            |
| 150 | bahandang     | bahandang   | Yes    | Identical form                        | Tidak ada perubahan            |
| 151 | luse'         | ewen        | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 152 | bapukan       | bapukan     | Yes    | Identical form                        | Tidak ada perubahan            |
| 153 | bapenyau      | bapenyau    | Yes    | Identical form                        | Tidak ada perubahan            |
| 154 | mihup         | mihup       | Yes    | Identical form                        | Tidak ada perubahan            |
| 155 | mulut         | nyama       | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 156 | manuta'       | muta        | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 157 | naker         | mandai      | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 158 | nyamuk        | nyamuk      | Yes    | Identical form                        | Tidak ada perubahan            |
| 159 | narai         | aran        | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 160 | tahaseng      | tahaseng    | Yes    | Identical form                        | Tidak ada perubahan            |
| 161 | ulun          | uluh        | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 162 | pekak         | pait        | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 163 | ngahaw        | nehaw       | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 164 | jukung/bakis  | jukung      | No     | Different roots or significant change | Penghilangan bunyi awal        |
| 165 | tulak         | tulak       | Yes    | Identical form                        | Tidak ada perubahan            |
| 166 | talawang      | talawang    | Yes    | Identical form                        | Tidak ada perubahan            |
| 167 | harati/pintar | harati      | No     | Different roots or significant change | Penghilangan bunyi awal        |
| 168 | bahetu'       | bagetu      | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 169 | balasut       | balasut     | Yes    | Identical form                        | Tidak ada perubahan            |
| 170 | natut         | imbing      | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 171 | pandak        | pandak      | Yes    | Identical form                        | Tidak ada perubahan            |
| 172 | hames         | hamis       | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 173 | bawi'         | bawi        | Likely | Similar form, possibly related        | Perbedaan kecil (glottal stop) |
| 174 | elem          | kanai       | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 175 | batang        | batang      | Yes    | Identical form                        | Tidak ada perubahan            |
| 176 | netek         | netek       | Yes    | Identical form                        | Tidak ada perubahan            |
| 177 | baputi'       | baputi      | Likely | Similar form, possibly related        | Perbedaan kecil (glottal stop) |

|     |                         |          |        |                                       |                                |
|-----|-------------------------|----------|--------|---------------------------------------|--------------------------------|
| 178 | balaw                   | balau    | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 179 | ratus -> saratus        | saratus  | No     | Different roots or significant change | Penghilangan bunyi akhir       |
| 180 | kuyan -> sakuyan        | sakuyan  | No     | Different roots or significant change | Penghilangan bunyi akhir       |
| 181 | mahiyen                 | mahiyen  | Yes    | Identical form                        | Tidak ada perubahan            |
| 182 | pasah                   | huma     | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 183 | uru                     | uru      | Yes    | Identical form                        | Tidak ada perubahan            |
| 184 | ice                     | ije      | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 185 | pehe'                   | pehe     | Likely | Similar form, possibly related        | Perbedaan kecil (glottal stop) |
| 186 | sala'                   | sala     | Likely | Similar form, possibly related        | Perbedaan kecil (glottal stop) |
| 187 | kanih                   | kanih    | Yes    | Identical form                        | Tidak ada perubahan            |
| 188 | neser -> maneser        | neser    | No     | Different roots or significant change | Penghilangan bunyi awal        |
| 189 | jalatien, tien          | jalatien | No     | Different roots or significant change | Penghilangan bunyi awal        |
| 190 | sapulu                  | sapuluh  | Likely | Similar form, possibly related        | Penghilangan bunyi awal        |
| 191 | palapas                 | palapas  | Yes    | Identical form                        | Tidak ada perubahan            |
| 192 | isut                    | isut     | Yes    | Identical form                        | Tidak ada perubahan            |
| 193 | handaw                  | handau   | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 194 | ewei                    | eweh     | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 195 | situh                   | hetuh    | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 196 | seke'                   | seke     | Likely | Similar form, possibly related        | Perbedaan kecil (glottal stop) |
| 197 | urase                   | uras     | Likely | Similar form, possibly related        | Penghilangan bunyi awal        |
| 198 | bana                    | bana     | Yes    | Identical form                        | Tidak ada perubahan            |
| 199 | jari'                   | jadi     | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 200 | sungey                  | sungei   | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 201 | banyihi/lancip balunyik | banyihi  | No     | Different roots or significant change | Penghilangan bunyi awal        |
| 202 | nyelu                   | nyelu    | Yes    | Identical form                        | Tidak ada perubahan            |
| 203 | mikeh                   | mikeh    | Yes    | Identical form                        | Tidak ada perubahan            |
| 204 | ngimbul                 | imbul    | No     | Different roots or significant change | Penghilangan bunyi akhir       |

|     |                   |          |        |                                       |                                |
|-----|-------------------|----------|--------|---------------------------------------|--------------------------------|
| 205 | endaw             | endau    | Likely | Similar form, possibly related        | Penambahan bunyi di akhir      |
| 206 | ukan              | leka     | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 207 | lunju'            | lunju    | Likely | Similar form, possibly related        | Perbedaan kecil (glottal stop) |
| 208 | uju/ucu           | uju      | No     | Different roots or significant change | Penghilangan bunyi awal        |
| 209 | barengen/baringin | badengen | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 210 | muhun             | muhun    | Yes    | Identical form                        | Tidak ada perubahan            |
| 211 | newek             | tejep    | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 212 | petak             | petak    | Yes    | Identical form                        | Penghilangan bunyi awal        |
| 213 | lenge'            | lenge    | Yes    | Identical form                        | Perbedaan kecil (glottal stop) |
| 214 | pinding           | pinding  | Yes    | Identical form                        | Tidak ada perubahan            |
| 215 | kate'             | tanteluh | No     | Different roots or significant change | Perbedaan bentuk signifikan    |
| 216 | tarawang          | tarawang | Yes    | Identical form                        | Tidak ada perubahan            |
| 217 | tatawe'           | tetawe   | Yes    | Identical form                        | Perbedaan bentuk signifikan    |
| 218 | dia'              | dia      | Yes    | Identical form                        | Perbedaan kecil (glottal stop) |
| 219 | tiruh             | tiruh    | Yes    | Identical form                        | Tidak ada perubahan            |
| 220 | telu              | telu     | Yes    | Identical form                        | Tidak ada perubahan            |
| 221 | himbun            | himun    | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 222 | tuket             | tungket  | Likely | Similar form, possibly related        | Perbedaan bentuk signifikan    |
| 223 | bakas             | bakas    | Yes    | Identical form                        | Tidak ada perubahan            |
| 224 | handipe'          | handipe  | Yes    | Identical form                        | Perbedaan kecil (glottal stop) |
| 225 | uwi'              | jawau    | No     | Different roots or significant change | Perbedaan bentuk signifikan    |