

Central Meanings and Hypernym-Hyponym Hierarchy of Word Definitions in Online *Kamus Besar Bahasa Indonesia* (*The Great Dictionary of the Indonesian Language*)

Erina Andriani and Barli Bram
Sanata Dharma University, Yogyakarta, Indonesia

Hypernym-hyponym relationships can help language users and learners better grasp word definitions. Therefore, this study investigated the central or core meanings of selected fruit, vegetable and flower names from the viewpoint of hypernym-hyponym relationships. The data, consisting of 105 words from flower, fruit, and vegetable categories, were collected from the online Kamus Besar Bahasa Indonesia (the Great Dictionary of the Indonesian Language) with purposive sampling. This study used syntactic analysis to extract hypernym and hyponym patterns of the head nouns. The central meanings were examined using hypernym-hyponym classifications. The results showed that the head nouns did not indicate the hypernym-hyponym relationships well because head nouns for fruits were plant (14 occurrences), tree (12), fruit (5), shrub (2), cactus (1), and type (1); for vegetables were vegetable (10), plant (10), shrub (8), allium (2), sprout (2), name (1), cassava (1), and pumpkin (1); and for flowers were tree (15), shrub (12), plant (6), and flower (2). The definitions adopted no consistent hierarchical pattern and some of them went in a circle, which might confuse dictionary users. The study implications are dictionary users ought to realize that some word definitions need improving and lexicographers should pay proper attention to core meanings and hypernym-hyponym connections.

Keywords: *central meaning, head noun, hypernym, hyponym, Kamus Besar Bahasa Indonesia/Great Dictionary of the Indonesian Language*

1 Introduction

The word definitions in dictionaries are closely related to hypernyms and hyponyms. Dictionaries are among some literary sources that can provide information to construct object hierarchy (Wang et al. 2018). The said hierarchy or taxonomy is supplied from the hypernym and hyponym, as both show relations where particular objects belong to specific categories (Kotlerman et al. 2010; Navigli et al. 2011; Roller et al. 2014). Therefore, the formulation of the word definition should be carefully constructed to show the word classification and hierarchy (Navigli et al. 2011; Gupta et al. 2017). It can help the users better picture what the word is a part of and better formulate the core meanings.

Dictionaries can be beneficial for language learners, but they can confuse due to the context of the meanings. The learners may find issues comprehending the core definitions of words (Lin et al. 2017). Many factors cause such problems, such as the geographical locations that lead to a shift of meaning for the same word (Omar & Alotaibi 2017). In addition, the inconsistencies of the word definitions, especially regarding the hypernym-hyponym of the head noun, may lead to confusion as the classification may not align. For example, in *Kamus Besar Bahasa Indonesia (KBBI)* or *the Great Dictionary of the Indonesian Language (GDIL)*, the word *sawi* (mustard green) is defined as “**sayuran**, berdaun melebar...” (a **vegetable** whose leaves are wide, ...) while *katuk* (sweetleaf) as “**perdu**... dengan ranting-ranting yang dipenuhi daun...” (a **shrub**... with branches filled with leaves...) (*Kamus Besar Bahasa Indonesia*).

Though both are the hyponyms of *vegetable*, the word definitions differ in their head nouns, namely “*sayuran*” (**vegetable**) and “*perdu*” (**shrub**).

Previous studies have researched the hypernym-hyponym relations in web sources and dictionaries (Nityasya et al. 2018; Roller et al. 2018; Wang et al. 2018; Tan et al. 2020). However, to the best of the researchers’ knowledge, previous studies rarely compile and investigate the word definitions from the same classifications from a hypernym-hyponym perspective. Therefore, this study intended to examine the core meaning of words in terms of hypernyms and hyponyms in the fruit, vegetable, and flower categories. The research question is formulated as follows: How does the online *Kamus Besar Bahasa Indonesia* or the *Great Dictionary of the Indonesian Language* define central meanings of fruit, vegetable and flower names from the viewpoint of the hypernym-hyponym hierarchy? It is expected to bring forth the issues in the formulation of word definitions concerning hypernym and hyponym relationships to comply with a more systematic and hierarchical pattern.

2 Review

People often consult a dictionary to find the meanings of words. It is a helpful reference for language learners or even native speakers to get the definitions of words (Utakrit & Fama 2020). Frequently, dictionaries come with sentences to provide examples of when and how to use the words (Gyurjyan 2015). More elaborate dictionaries also offer more features (Rohmatillah 2016; Utakrit & Fama 2020), such as the pronunciation in both American and British accents, frequency of use, word class, or suggestions of other word forms.

A dictionary is seen as a helping tool to help learners understand new vocabulary. It provides the core definitions and the most frequently used word definitions (Solonchak & Pesina 2014). The core definitions provide the specific meanings of words that evoke mental images (Gupta et al. 2017). Dictionaries are often the primary references to core definitions of words. They provide the core or central definitions before other definitions, such as figurative or specialized meanings (*The Macquarie Dictionary*, accessed in October 2021). However, its function as the reference to provide the definitions of words may have issues concerning hypernym-hyponym relationships.

Hypernym and hyponym are closely related, and both are essential in a semantic network. The word definitions often comply with specific formulations that indicate the hypernym-hyponym relationship. Hypernym and hyponym are the general terms of classifications and their members (Nityasya et al. 2018). The identification of hypernyms and hyponyms can be made in thesauri, though they may lack the amount and variation (Wang et al. 2018; Tan et al. 2020). Definitions that can also provide hypernym-hyponym relations are encyclopedias and web corpora (Roller et al. 2014; Seitner et al. 2016; Wang et al. 2018). As presented in Figure 1, hypernyms and hyponyms are closely related. There are two levels of hypernym and hypernym in Figure 1, and examples of co-hyponyms. The category *plant* is the hypernym, while *fruit* and *flower* are the hyponyms of *plant*. *Fruits* and *flowers* are co-hyponyms, as both are members of the same hypernym. In addition, *fruit* can also be considered the hypernym, with *apple* and *grape* as its hyponyms.

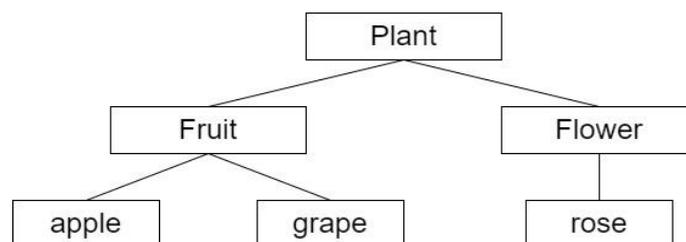


Figure 1: The example of hypernym and hyponym

The identification of hypernym and hyponym is important in semantic analysis. Figuring the hypernym-hyponym classifications from word definitions becomes essential so that the definition formulation and semantic network in the references, such as dictionary or thesaurus, provides natural language processing (Hertling & Paulheim 2017; Tan et al. 2020). The diagram of the hypernym-hyponym relation can enhance the accuracy of word classification (Navigli et al. 2011; Gupta et al. 2017). Therefore, the analysis of word definitions can be improved. Another way to indicate hypernym-hyponym relation is from its pattern. One basic pattern is “is a” pattern (Kotlerman et al. 2010; Navigli et al. 2011; Roller et al. 2014; Wang et al. 2019). Another variation is the “is/was/are/were + a/an/the” (Tan et al. 2020: 2). Based on these patterns, the definitions of hyponyms in Figure 1 are expected to have the said pattern and include fruit as the head noun, as in example (1). However, a different case happens in example (2), as the word definition includes plant as the head noun instead of fruit. In example (2), the definition does not comply with its hypernym. Therefore, this study investigated the hypernym and hyponym relationships in word definitions in an online dictionary called *Kamus Besar Bahasa Indonesia (KBBI)* or *the Great Dictionary of the Indonesian Language (GDIL)*.

- (1) A banana is “a long curved **fruit** with a thick yellow skin and that is soft inside, which grows on trees in hot countries”. (Oxford Learner’s Dictionary www.oxfordlearnersdictionaries.com)
- (2) *Pisang adalah **tanaman** jenis Musa, buahnya berdaging dan dapat dimakan, ada bermacam-macam, seperti ambon, barangan, raja, raja serai, uli*
A banana is “a **plant** of the Musaceae type, the fruit is fleshy and edible, there are various kinds, such as ambon, barangan, raja, raja serai, uli” (KBBI/GDIL <https://kbbi.kemdikbud.go.id>)

Several previous studies have researched the word definition formulation concerning hypernyms and hyponyms. Nityasya et al. (2018) analyzed hypernyms and hyponyms on Wikipedia pages as the data sources. They investigated the hypernym and hyponym relationships using Wikipedia and WordNet pages using semantic procedures, including extracting sentences and patterns, matching the patterns, and using a bootstrapping algorithm to extract the hypernym and hyponym taxonomy. Similarly, Roller & Erk (2016) investigated the patterns of hypernym-hyponym relations. They proposed a model to identify hypernym and hyponym relations and found that it could locate the connections using Hearst’s pattern (Roller et al. 2018). Gupta et al. (2017) explored the use of hypernyms and hyponyms for taxonomy induction. They perceived hypernym and hyponym subsequence as effective for taxonomy induction across four languages. Tan et al. (2020) researched to investigate the correlation between syntactic structure and semantics using hypernym and hyponym relations. They

shared the use of syntactic property, words' parts of speech to extract the hypernym and hyponym relationships in Wikipedia and Stack-Overflow pages. Wang et al. (2018) conducted a study related to the Chinese language hypernym and hyponym relations. Their study proposed the “*is a*” pattern to extract the hypernym and hyponym hierarchy and figure out the taxonomy of the words. All of the previous studies highlight the significance of hypernym-hyponym relationships in word definitions.

3 Method

This research investigated the word definitions concerning hypernymy. The study used descriptive design (Ary et al. 2010) to analyze the data in the form of the core or central definitions of words in the online *Kamus Besar Bahasa Indonesia (KBBI)* or *the Great Dictionary of the Indonesian Language (GDIL)* from the website <https://kbbi.kemdikbud.go.id/>. The samples were the words from the *flower*, *fruit*, and *vegetable* categories, selected with purposive sampling based on those criteria (Creswell 2012). *KBBI/GDIL* was used as it was one of the most comprehensive monolingual Indonesian dictionaries and was created directly by Language Development and Fostering Agency under the Ministry of Education and Culture (<https://kbbi.kemdikbud.go.id>, accessed in April 2022), making it the most credible dictionary for the Indonesian language. In addition, the use of its web version allowed the quicker and more direct search of the observed words.

The researchers collected 105 names of flowers, fruits, and vegetables to analyze. Previous research regarding hypernym-hyponym hierarchy rarely specified the groups of words they investigated (Nityasya et al. 2018; Wang et al. 2018; Tan et al. 2020). Hence this study intends to focus on specific word categories to differ from previous studies. In addition, plant as hypernym and fruit, vegetable, and flower its hyponyms are yet to be researched, therefore this study used those three categories. Flower, fruit, and vegetables were selected as they were the hyponyms of the hypernym *plant*. From the *KBBI/GDIL*, the word *plant* is defined as “*a living thing that contains chlorophyll*”. It has several parts, including *flower*, *fruit*, and *vegetable* lexemes. Fruit is defined as “*the part of a plant that comes from the flower or pistil (usually has seed)*”, a flower is defined as “*the part of the plant that will become fruit, is usually beautiful in colour and smells good*”, while a vegetable is defined as “*part of plant such as leaves (such as mustard greens), plants (bean sprouts), legumes (peas, beans) and so on, which can be cooked*”. In this case, *KBBI/GDIL* states in the word definitions of fruit, vegetable, and flower that those categories belong to (are the hyponyms of) a plant (hypernym). Therefore, *plant*, *fruit*, and *flower* lexemes were used as the main categories of hypernyms and hyponyms in this study.

The formulation of the word definitions, especially regarding the category of the head nouns, was investigated from a hypernymy perspective. This research used an observation sheet to record the occurrence of the data (Lambert 2012) regarding the word definition and head noun categories, based on the theories by Nityasya et al. (2018), Wang et al. (2018), Tan et al. (2020), and *The Macquarie Dictionary* (accessed in October 2021). The data were gathered in late October 2021. As the data sources were Indonesian, the researchers then translated them into English.

The collected word definitions were analyzed using syntactic analysis, which allows the examination of noun phrases (NP) and the identification of head nouns (O’Grady 2010). The researchers first collected 105 words for the three categories. The researcher gathered 35

data each for flower, fruit, and vegetable categories by brainstorming the common and widely known words, resulting in 105 total words. This number of data could sufficiently present the head nouns used in each word category to serve the aim of the study. The selected words were also commonly available and widely known, so readers could have an idea of the objects. The words were purposively gathered in accordance with the word categories (fruit, flower, and vegetables). Then, the researchers determined the head noun of each word definition based on the theories from Nityasya et al. (2018) and Tan et al. (2020), by using indicators such as *...is a...* to find the head noun. The uncovered head nouns were recorded using the structured observation sheets. The data then were tabulated using percentages to show the occurrence frequency of the varying head nouns for each category, and the results were then discussed based on the themes.

4 Results and discussion

This section provides the study results and a discussion of the findings. In identifying the hypernym and hyponym relationship, the analysis was done on first the head nouns and their modifiers. The analysis of the head nouns was done to determine the hypernyms from which the words are classified, especially as the investigated word were noun words (fruit, vegetable, and flower).

4.1 The analysis of the head noun

This study investigated the word definitions of 35 words each in the fruit, vegetable, and flower categories. To identify the hypernym and hyponym relationship, the researchers used the *is a* pattern in the word definitions (Wang et al. 2018). The identified head nouns show the hypernyms classified by the investigated words. From the 35 words in the fruit category, the researchers identified six head nouns in Figure 2. There are eight identified head nouns from the words in the vegetable category, as in Figure 3. As for the words in the flower category, there are four identified head nouns, as in Figure 4.

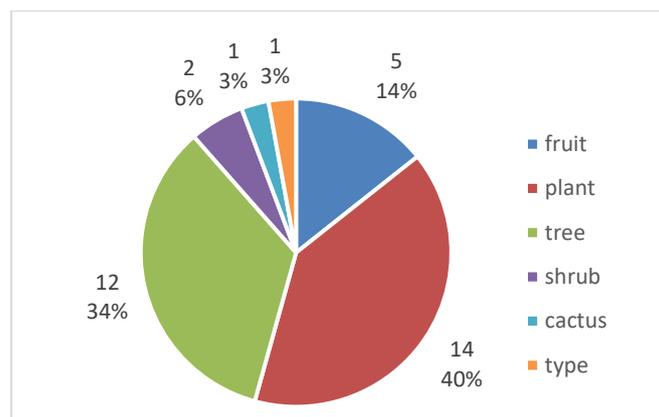


Figure 2: Head nouns of word definitions from the fruit category

The word definitions from the fruit category had six different head nouns, as presented in Figure 2. The head noun used the most was *plant*, as it was used 14 times (40%), followed by

tree, as it was used 12 times (34.3%). *Fruit* was also used as the head noun but only occurred five times (14.3%). Other than those head nouns, KBBI/GDIL also used *shrub* twice (5.7%), *cactus* once (2.85%), and *type* once (2.85%) as the head nouns of the investigated words in the fruit category. In this case, even though the word definitions used the *is a* pattern, in line with Wang et al. (2018), which indicated the hypernym-hyponym relationship, the varying head noun results did not correctly represent the hypernym and hyponym relationship.

- (3) “*Buah naga adalah **kaktus** tidak berduri yang batangnya berbentuk segitiga, memanjang, berwarna hijau kebiru-biruan, buahnya berbentuk lonjong yang dibungkus kulit bersisik berwarna hijau, daging buahnya berwarna putih atau merah tua dan memiliki biji hitam kecil-kecil*”
Dragon fruit is a thornless **cactus** whose stem is triangular, elongated, bluish-green, whose fruit is oval-shaped, wrapped in green scaly skin, white or dark red flesh, and has small black seeds.
- (4) “*lemon adalah **jenis** limau*”
Lemon is a **type** of lime.
- (5) “*Pir adalah **buah** di daerah subtropis, bentuknya seperti jambu monyet, rasanya manis, berair seperti jambu biji*”
Pear is a **fruit** in a subtropical area whose shape is like a cashew fruit and tastes sweet, watery like guava.
- (6) “*Cerimoya adalah **buah** mirip srikaya, beracun, banyak biji, berbentuk oval, bermanfaat untuk menguatkan sistem imun, menangkal kanker, menyehatkan otak, dan mencegah osteoporosis*”
Cherimoya is a **fruit** similar to a sour apple, is poisonous, has many seeds, has an oval shape, and can be used to increase the immune system, prevent cancer, and make the brain healthy. And prevent osteoporosis.
- (7) “*Jambu biji adalah **buah** jambu yang di dalam dagingnya terdapat biji kecil-kecil, dagingnya berwarna merah atau putih; biawas*”
Guava is a **fruit** whose flesh has tiny seeds; the flesh is red or white.

Examples (3) to (7) present various head nouns of word definitions in the fruit category. Examples (3) and (4) are the use of *cactus* and *type* head nouns which were used once. Examples (5), (6), and (7) present the use of *fruit* as the head noun. They comply with the pattern, which indicates that *fruit* is the hypernym, while pear, cherimoya, and guava are the hyponyms of *fruit* (Seitner et al. 2016; Gupta et al. 2017). It can also be said that guava, cherimoya, and pear are the co-hyponym of each other. Pear, cherimoya, and guava are part of a plant kingdom. They are also dicots so that they can be in the tree category. However, despite those similarities, they are identified as *fruit*, while many other investigated words in fruit categories are identified as *plant* or *tree*. Here, the reasons why the investigated words in the fruit category do not have *fruit* as the head noun, as well as why many word definitions directly jump into higher hypernym categories (*plant*, *shrub*, *tree*) and the system (as scientific classification does not seem to be the one) rules the KBBI/GDIL's word definitions are unclear. These findings contradict Nityasya et al. (2018) and Tan et al. (2020).

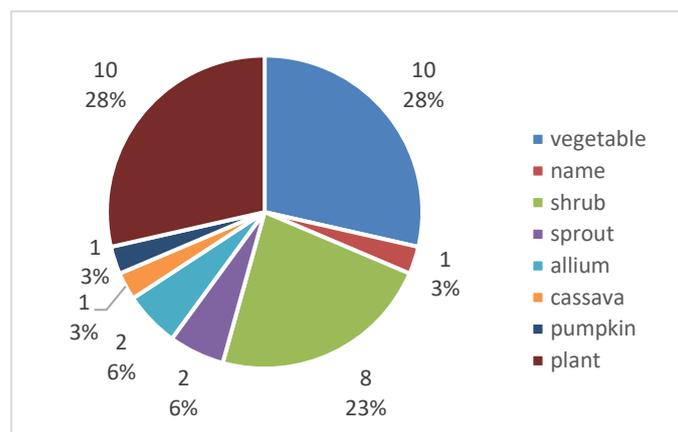


Figure 3: Head nouns of word definitions from the vegetable category

The word definitions from the vegetable category had eight different head nouns, as presented in Figure 3. The head noun that was used the most was *vegetable* (28.6%) and *plant* (28.6%), as they occurred ten times each, followed by *shrub*, eight times (22.85%). *Allium* and *sprout*, which were used twice each (5.7%, respectively), were the third most used head nouns. Other head nouns were used once, including *name* (2.85%), *cassava* (2.85%), and *pumpkin* (2.85%). The hypernym-hyponym hierarchy in the word definitions for vegetable words is presented better than the fruit category, in line with Gupta et al. (2017) and Hertling & Paulheim (2017) because vegetable was one of the most used head nouns. Still, some head nouns did not correctly indicate the words' classification.

- (8) “*Bawang bombai adalah **bawang** besar [Allium cepa]*”
An onion is a big **allium**.
- (9) “*Bawang merah adalah **bawang** yang dipakai dalam masakan dan juga digunakan dalam pengobatan sebagai campuran [Allium cepa fa ascalonicum]*”
A shallot is an **allium** used in cooking and also used in medicine as a mixture.
- (10) “*Bayam adalah **nama** kelompok sayuran daun, bentuk daunnya bulat telur dengan ujung meruncing dan urat-urat yang jelas, ...*”
Spinach is the **name** of the group of leaf vegetables, the shape of the leaves is oval with a pointed tip and clear veins...
- (11) “*Poh pohan **tumbuhan** terna dengan tinggi mencapai 5 m, daunnya lunak berbau harum, berbentuk bulat telur ujung meruncing, pertulangan daun jelas, biasanya dimakan sebagai lalap*”
Pohpohan is a **shrub** with a height of up to 5 m, the leaves are soft, fragrant, oval in shape with a pointed tip, the leaf veins are clear, usually eaten as a salad
- (12) “*Kangkung adalah **sayuran** yang menjalar, batangnya berair, daunnya berbentuk tameng dan meruncing pada bagian ujungnya, ...*”

Water spinach is a creeping **vegetable** with a watery stem; the leaves are shield-shaped and tapered at the ends ...

- (13) “*Wortel adalah sayuran berakar pasak berdaging, berwarna kuning jingga, kaya akan zat gula, vitamin, dan garam mineral*”

Carrot is a **vegetable** rooted in fleshy pegs, yellow-orange, rich in sugars, vitamins, and mineral salts

- (14) “*Singkong adalah ubi kayu*”

A cassava is a **cassava**.

Examples (8) to (14) present varying head nouns for word definitions in the vegetable category. As seen in examples (8) and (9), onion and shallot had the same head noun. It indicates that *allium* is the hypernym of onion and shallot. Similarly, in examples (12) and (13), the head noun *vegetable* means that water spinach and carrot are the hyponyms of *vegetable*. Those examples show the hypernym-hyponym relationship (Navigli et al. 2011; Tan et al. 2020). However, in example (10), the head noun *name* for spinach does not indicate the hypernym-hyponym relationship. If it shows that spinach is a group name, it is unclear why *pohpohan*, in example (11), does not have *spinach* as the head, even if the shape characteristics of *pohpohan* are similar to spinach. Instead, *pohpohan* is categorized as a shrub. Therefore, similar to the case of fruit, the reasons why the investigated words do not use *vegetable* as the head noun and the rule for word definition formulations are unclear. In addition, in some cases, as in example (14), the definition of cassava did not give any further elaboration, confusing its definition, let alone the hypernym-hyponym relationship. The word definition did not explain but only a synonym. In this case, the definitions in the dictionary are going in a circle and may confuse the readers, which contradicts Lin et al. (2017) and Gyurjyan (2016).

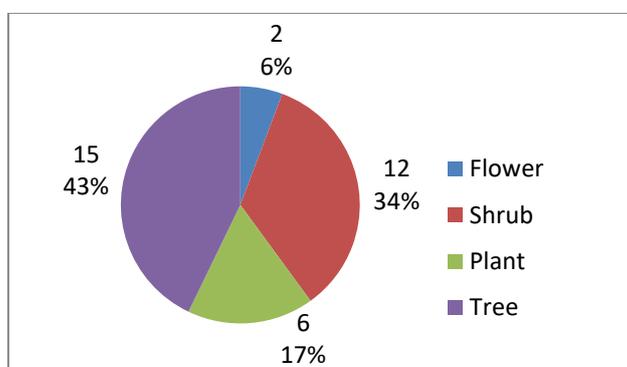


Figure 4: Head nouns of word definitions from the flower category

The word definitions from the flower category had four different head nouns, as presented in Figure 4. The head noun that was used the most was *tree*, occurring 15 times (42.85%), followed by *shrub* (34.3%), which appeared 12 times, and *plant* (17%), six times. The word *flower* was also used as the head noun, but only twice (6%). In this case, even though the word definitions used the *is a* pattern, in line with Wang et al. (2018), which indicated the hypernym-hyponym relationship, the varying head noun results did not correctly represent the hypernym and hyponym relationship.

- (15) “*Sakura adalah **bunga** berwarna putih atau merah jambu yang mekar pada permulaan musim panas di Jepang*”
A cherry blossom is a white or pink **flower** that blooms in early summer in Japan.
- (16) “*Dahlia adalah **bunga** dahlia*”
Dahlia is a dahlia **flower**.
- (17) “*Gerbera adalah **tumbuhan** hias berbatang basah, berbunga bongkal tunggal pada ujung tangkainya berbentuk bunga pita berwarna kuning, merah atau merah jambu*”
a gerbera is an ornamental **plant**, has wet trunk and single flowered at the end of the stalk in the form of a yellow, red or pink ribbon flower

Examples (15) to (17) present the use of varying head nouns for word definitions in the flower category. Example (15) is the only use of *flower* as the indication of hypernym-hyponym relationship with elaborative word definition. In example (17), the head noun *plant* indicates that it is the hypernym of gerbera (Gupta et al. 2017; Seitner et al. 2016; Wang et al. 2018). A similar case of circular meaning like in example (14) is apparent in example (16) as the word definition barely gives further information. Though it shows the hyponym-hypernym relation due to the use of the head noun ‘*flower*’, it does not give further explanation of the word, which contradicts Lin et al. (2017) and Gyurjyan (2016).

The inconsistencies and somewhat unclear composition for word definitions might confuse the users, as they did not represent the groups the words belong to. Figure 5 is an example of the jumbled relations among co-hyponyms. *Plant*, *tree*, and *shrub* were among many head nouns the researchers found, and they were three of the most used head nouns across 105 observed words. The first picture of Figure 5 shows that the head noun *plant* is the hypernym of *lily*, *orchid*, *apple*, and *asparagus*. In this case, it seems as if those words, and many other words with the *plant* as the head noun, were co-hyponym. While one may argue it is true, the jump into such a high level of hypernym (directly to *plant* – the kingdom) may cause confusion. In addition, if some words were called *plant*, why the rest were not while they belonged in the same kingdom showed inconsistencies in their central meanings. A similar thing happens in the second picture, as *cananga*, *orange*, *date*, and *orange jessamine* might seem as co-hyponyms as they correspond to the same hypernym *tree*. This was also inconsistent, as many other words with a wooden trunk, which could be considered as *tree*, did not use *tree* as the head noun. In the last picture, *shrub* has *tamarillo*, *basil*, *camellia*, and *celery* as some of its hyponym, also indicating that those words are co-hyponym, which may cause confusion as the group (*shrub*) is too broad.

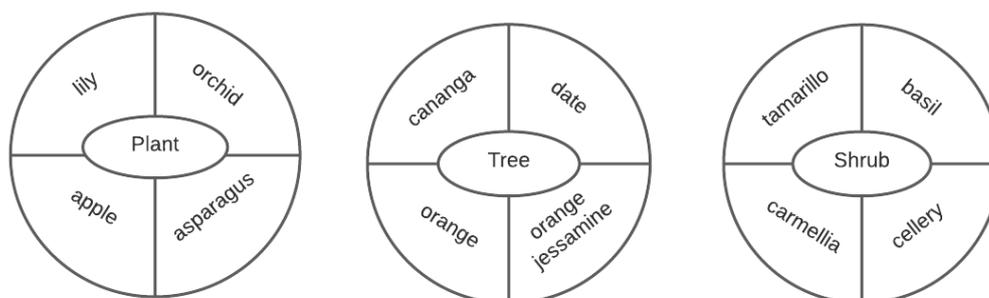


Figure 5: Representation of the overlapped fruit, vegetable, and flower categories

4.2 The analysis of the modifiers

O'Grady (2010) states that noun phrases have modifiers to give additional information to the head nouns. The researchers considered that modifiers might contain information that could indicate hypernym and hyponym relationships. Wright & Hope (1996) mentioned the structure of a noun phrase, which may have articles, pre-modifiers, and post-modifiers. The pre-modifiers could be in the form of quantifiers or articles (Wright & Hope 1996), though in the observed word definitions they did not use any. As for the post-modifiers, they could be in the form of adjective phrases, adjective clauses, or prepositional clauses, as in examples (12), (13), and (17) (Wright & Hope 1996).

Many of the word definitions had very long post-modifiers. After investigating the hypernym-hyponym relationships extracted from the head nouns, the researchers examined the additional information in the post-modifier. Here, we found that the indication of fruit, vegetable, and flower hypernyms is often presented in the elaboration of the other information (post-modifier), as in examples (18), and (19). Example (18) mentions the fruit in the explanation, while example (19) mentions the use as a vegetable in the explanation. The structure of the additional information (post-modifier) for every investigated word was erratic, as readers would not know for sure what the information would be presented. As viewed in example (18), the description also mentions the height and further processing. In example (19), the post-modifier also explains the other parts of the plant and the function of the plant. However, in the case of example (20), the post-modifier of fig does not include the category it belongs to i.e., fruit. Example (20) uses tree as the head noun and does not mention any information regarding the fruit. In this case, the word definitions had inconsistencies in hypernymy, in contrast with Nityasya et al. (2019) and Tan et al. (2020).

- (18) *“Terung Belanda adalah pohon perdu, tinggi mencapai 6,25 m, berbuah banyak, dimakan mentah atau diolah menjadi selai”*
A tamarillo is a shrub tree, up to 6.5 m tall, whose fruit is much, eaten as is or processed into jam
- (19) *“Bayam adalah nama kelompok sayuran daun, bentuk daunnya bulat telur dengan ujung meruncing dan urat-urat yang jelas, bunganya berbentuk malai yang tegak (banyak macamnya, ada yang dibuat **sayur**, ada yang untuk obat)”*
Spinach is the name of the group of leaf vegetables; the shape of the leaves is oval with a pointed tip and clear veins, the flowers are in the form of an upright panicle (there are many kinds, some are made for **vegetables**, some are for medicine)
- (20) *“Ara adalah **pohon** jenis fikus yang banyak getahnya, banyak macamnya, ada yang berupa pohon, tumbuhan perdu, tumbuhan memanjat, seperti -- akar; -- batu; -- burung”*
Fig is ficus tree species with a lot of sap, many kinds, some in form of trees, shrubs, climbing plants, such as -- roots; -- stone; -- bird

The hypernym and hyponym relationships can be observed through dictionaries' central definitions of words. The hypernym and hyponym relationships in word definitions can help the users by providing the group or category they belong to grasp better the word meaning

(Hertling & Paulheim 2017; Tan et al. 2020). This study was intended to observe the hypernym and hyponym relationships in the definitions of 105 words from fruit, vegetable, and flower categories. The results showed that KBBI/GDIL used various head nouns for the word definitions in each category, with *plant*, *tree*, and *shrub* as the three most used head nouns across the three categories. The rule or pattern governing the head noun for the word definitions was unclear. Therefore, the classifications and hierarchical structures extracted from the hypernym and hyponym relationships in the word definitions were not always clear, in contrast to Nityasya et al. (2019) and Tan et al. (2020). Most post-modifiers, however, included the categories the words belonged to. Nevertheless, the pattern to rule the information provided in the post-modifiers was unclear, so some word definitions often had very long information, while some had very little. In addition, a few definitions went in a circle or were just the word's synonym, which might confuse the users (Gyurjyan 2016; Lin et al. 2017).

5 Conclusion

This study investigated hypernym and hyponym hierarchical relationships in the online dictionary *Kamus Besar Bahasa Indonesia (The Great Dictionary of the Indonesian Language)*. The results showed inconsistencies in the use of head nouns for the fruit, vegetable, and flower words which failed to indicate the hypernym and hyponym relationships between the observed words and the categories they were taken from and were unable to provide the hierarchical classifications of the said words. The researchers found that for the words in the fruit category, the head nouns were in the forms of *plant*, *tree*, *fruit*, *shrub*, *cactus*, and *type*. As for the words in the vegetable category, the head nouns included *vegetable*, *plant*, *shrub*, *allium*, *sprout*, *name*, *cassava*, and *pumpkin*. Lastly, the words in the flower category had head nouns as follows: *tree*, *shrub*, *plant*, and *flower*.

The online dictionary *Kamus Besar Bahasa Indonesia* did not disclose the rule or pattern of the central meanings; therefore, it was unclear whether it aimed to be scientifically specific or more general. In addition, the modifiers varied a lot, especially the post-modifiers, which might cause the definitions not to refer to the object directly. Some word definitions also went in a circle regarding directness, which might confuse the users. This study was still limited in its research subject and data sources. Future researchers may use more words in various dictionaries and even use hypernym-hyponym extraction tools to help the process. The implications of this study are for the dictionary users to be mindful in consulting the *KBBI/GDIL* to find word meanings and for the dictionary compilers to construct a clear guideline in providing the entries and using the dictionaries, so readers know what to expect when using the dictionary.

APPENDIX A
Fruit list from KBBI/GDIL

No.	Fruit	Definition
1	apple <i>apel</i>	A plant whose fruit is round with thick and watery flesh and soft, red (reddish), yellow (yellowish), or green skin, and tastes sweet and sour when it is ripe “pohon yang buahnya bundar, berdaging tebal dan mengandung air serta berkulit lunak berwarna merah (kemerah-merahan), kuning (kekuning-kuningan), atau hijau, jika matang rasanya manis keasam-asaman”
2	avocado <i>alpukat</i>	A tree, up to 10m tall, whose fruit is oval with green or purplish-brown skin, thick, greenish-yellow, soft flesh “pohon, tinggi hingga 10 m, buahnya berbentuk bulat lonjong, berkulit hijau atau cokelat keungu-unguan, berdaging tebal berwarna kuning kehijau-hijauan dan lunak”
3	banana <i>pisang</i>	A plant from <i>Musa</i> (ingens) type, whose flesh can be eaten, with many variations, such as ambon, barangan, raja, raja serai, uli “tanaman jenis <i>Musa</i> , buahnya berdaging dan dapat dimakan, ada bermacam-macam, seperti <i>ambon, barangan, raja, raja serai, uli</i> ”
4	blueberry <i>bluberi</i>	A vine plant from the <i>Vaccinium</i> genus, whose flower has a bell-like shape, whose fruit is small with dark purple when it is ripe “tanaman semak dari genus <i>Vaccinium</i> , bunganya berbentuk menyerupai lonceng, buahnya berukuran kecil dan berwarna ungu gelap saat matang”
5	breadfruit <i>sukun</i>	A tree like breadnut whose fruit does not have any seeds “pohon seperti keluih yang buahnya tidak berbiji”
6	cantaloupe <i>blewah</i>	A twining plant, 1.5-3m long, whose leaves are broad with heart shape and woody, longleaf stalk, whose flower is big, yellow, and fragrant, whose fruit can rot quickly, with oval shape, can be eaten directly or be mixed with syrup, with smooth skin when young, has many seeds and thin skin “tanaman menjalar, panjangnya 1,5–3 m, daunnya lebar berbentuk jantung dengan tangkai daun yang keras dan panjang, bunganya besar berwarna kuning dan harum, buahnya cepat busuk berbentuk bulat lonjong dan berlekuk-lekuk, dapat dimakan langsung atau dicampur dengan sirup, berbulu licin jika masih muda, banyak bijinya dan berkulit sangat tipis”
7	cherimoya <i>cerimoya</i>	A fruit similar to a sour apple is poisonous, has many seeds, has an oval shape, and can be used to increase the immune system, prevent cancer, and make the brain healthy. And prevent osteoporosis “buah mirip srikaya, beracun, banyak biji, berbentuk oval, bermanfaat untuk menguatkan sistem imun, menangkal kanker, menyehatkan otak, dan mencegah osteoporosis”
8	cherry <i>ceri</i>	a fast growing tree with small white flowers, hairy leaves, whose fruit is small and round like grapes, when ripe it is red or yellow and tastes sweet “pohon yang cepat berkembang, bunganya putih kecil-kecil, daunnya berbulu, buahnya bulat kecil seperti anggur, kalau sudah matang berwarna merah atau kuning dan manis rasanya”
9	date <i>kurma</i>	a tree from the <i>Arecaceae</i> genus, originating from Arabia, whose fruit is oval in shape, made into a kind of sweets and delicious to eat “pohon yang termasuk suku <i>Arecaceae</i> , berasal dari Arab, buahnya berbentuk bulat lonjong, dijadikan semacam manisan dan enak dimakan”

10	dragon fruit <i>buah naga</i>	thornless cactus whose stem is triangular, elongated, bluish green, whose fruit is oval-shaped wrapped in green scaly skin, white or dark red flesh and has small black seeds “kaktus tidak berduri yang batangnya berbentuk segitiga, memanjang, berwarna hijau kebiru-biruan, buahnya berbentuk lonjong yang dibungkus kulit bersisik berwarna hijau, daging buahnya berwarna putih atau merah tua dan memiliki biji hitam kecil-kecil”
11	durian <i>durian</i>	A tree with a straight trunk, about 20–40 m high, branches sparse, bark rough and gray, yellow flowers arranged in panicles “pohon yang batangnya lurus, tingginya sekitar 20–40 m, dahannya jarang, kulit batangnya kasar dan berwarna kelabu, bunga tersusun dalam malai, berwarna kuning”
12	fig <i>ara</i>	figus tree species with a lot of sap, many kinds, there are trees, shrubs, climbing plants, such as -- roots; -- stone; -- bird “pohon jenis fikus yang banyak getahnya, banyak macamnya, ada yang berupa pohon, tumbuhan perdu, tumbuhan memanjat, seperti -- akar; -- batu; -- burung”
13	goji berry <i>buah goji</i>	A hermaphrodite plant, a kind of shrub, whose fruit is small and red, high in carbohydrates, protein, fat, and fiber, can be consumed raw or cooked, efficacious as an antioxidant, medicine for skin diseases, cancer, and eye disorders “tanaman hermafrodit sejenis semak, buahnya kecil berwarna merah, mengandung karbohidrat, protein, lemak, dan serat yang tinggi, dapat dikonsumsi mentah atau dimasak, berkhasiat sebagai antioksidan, obat penyakit kulit, kanker, dan gangguan pada mata”
14	grape <i>anggur</i>	A vine tree, the fruit is small as big as a marble and in series “tumbuhan merambat, buahnya kecil-kecil sebesar kelereng dan berangkai”
15	guava <i>jambu biji</i>	Guava fruit whose flesh has small seeds, the flesh is red or white “buah jambu yang di dalam dagingnya terdapat biji kecil-kecil, dagingnya berwarna merah atau putih”
16	honeydew <i>melon</i>	A vine which has almost perfectly round fruit, the skin of the fruit is yellowish green and rather large, the flesh tastes sweet “tanaman menjalar buahnya hampir sempurna bulat, kulit buahnya berwarna hijau kekuning-kuningan dan agak besar, daging buahnya berasa manis”
17	kiwi <i>kiwi</i>	a fruit with greenish-brown skin and hairy, green flesh and sweet taste, originating from China [Actinidia deliciosa] “buah yang kulitnya berwarna cokelat kehijauan dan berbulu, dagingnya berwarna hijau dan rasanya manis, berasal dari Cina”
18	lemon <i>lemon</i>	A type of lime “jenis limau”
19	lime <i>jeruk nipis</i>	a small tree with many branches, whose fruit is oval, green to yellow, the skin of the fruit is thin and contains essential oils “pohon kecil yang bercabang banyak, buahnya bulat telur, berwarna hijau sampai kuning, kulit buahnya tipis dan mengandung minyak asiri”
20	orange <i>jeruk</i>	a tree belonging to the Citrus family, in the axils of the leaves there are thorns, has various types and varieties of edible fruit and the leaves can be used as a spice, or flavoring; lime “pohon yang termasuk keluarga Citrus, pada ketiak daun terdapat duri, mempunyai berbagai jenis dan varietas buahnya dimakan dan daunnya dapat digunakan sebagai bumbu, atau penyedap; limau”

21	mango <i>mangga</i>	A tree with an upright trunk, whose flowers are panicle-shaped, whose fruit is long or short round with varying colours of the flesh, fruit, and taste, served as is or made into rujak, sweets, jams, and so on “pohon yang berbatang tegak, bunganya berbentuk malai, buahnya bulat panjang atau bulat pendek, warna daging, buah, dan rasanya bervariasi, dihidangkan sebagai buah, dibuat rujak, manisan, selai, dan sebagainya”
22	papaya <i>pepaya</i>	A tropical fruit tree with straight stems, no branches like palms, but not woody, whose fruit is thick with sweet flesh “tumbuhan buah daerah tropis, batangnya lurus tidak beranting seperti palem, tetapi tidak berkayu, buahnya berdaging tebal dan manis”
23	passionfruit <i>markisa</i>	A vine plant, the fruit is about the size of brown, the skin is mottled yellow or light green whitish, the flesh tastes sour, used as a base for syrup [Passiflora edulis] “tumbuhan merambat, buahnya kira-kira sebesar sawo, kulitnya berbintik-bintik berwarna kuning atau hijau muda keputih-putihan, daging buahnya berasa asam, digunakan sebagai bahan dasar sirop [Passiflora edulis] ”
24	peach <i>persik</i>	A rose-type plant with many branches; pink flowers; thick, fleshy fruit; a single seed; and edible “tanaman jenis mawar, bercabang banyak, berbunga merah jambu, buahnya berdaging tebal, berbiji tunggal, dan dapat dimakan”
25	pear <i>pir</i>	Fruit in a subtropical area, whose shape is like a cashew fruit and tastes sweet, watery like guava “buah di daerah subtropis, bentuknya seperti jambu monyet, rasanya manis, berair seperti jambu biji”
26	pineapple <i>nanas</i>	A tropical or subtropical plant, whose fruit is oval-shaped, about the size of a person's head, the skin of the fruit is composed of scales, has many eye seeds, the leaves are long, fibrous, and spiny on both sides “tanaman tropis dan subtropis, buahnya berbentuk bulat panjang, kira-kira sebesar kepala orang, kulit buahnya bersusun sisik, berbiji mata banyak, daunnya panjang, berserat, dan berduri pada kedua belah sisinya”
27	plum <i>prem</i>	fruit is round or oval, smooth-skinned, usually red or purple and has a flat groove, single seed “buah berbentuk bulat atau oval, berkulit halus, biasanya berwarna merah atau ungu dan terdapat lekuk pipih, berbiji tunggal”
28	pomegranate <i>delima</i>	A shrub with low branches and sparse thorns, the leaves are small, slightly stiff, shiny green, whose fruit is yellowish to dark red, edible, when ripe it opens “tumbuhan perdu dengan cabang yang rendah dan berduri jarang, daunnya kecil-kecil agak kaku berwarna hijau berkilap, buahnya berkulit kekuning-kuningan hingga merah tua, dapat dimakan, ketika masak merekah”
29	pomelo <i>jeruk Bali</i>	a tree native to Indonesia, with a crooked trunk, strong wood, large leaves with broad wings on the stem, flowers are white and green and smells good, the shape, size, colour of the flesh, and the taste of the fruit are varied, rich in vitamin C; big lime “pohon asli Indonesia, berbatang bengkok, kayunya kuat, berdaun besar bersayap lebar pada tangkainya, bunganya berwarna hijau keputih-putihan dan berbau harum, bentuk, ukuran, warna daging, dan rasa buahnya beraneka ragam, banyak mengandung vitamin C; limau besar”
30	soursop <i>sirsak</i>	a tree up to 8 m high, the skin of the fruit is short and soft, the contents are white and have many black seeds, the taste is sour and sweet; Dutch jackfruit

		“pohon yang tingginya mencapai 8 m, kulit buahnya berduri-duri pendek dan lunak, isinya berwarna putih serta berbiji banyak berwarna hitam, rasanya masam-masam manis; nangka belanda”
31	starfruit <i>belimbing</i>	A plant from the Oxalidaceae family, 5-12 m tall, with compound leaves, whose some of its fruit is sweet (starfruit), and some can be used as a vegetable (bilimbi) “tumbuhan yang termasuk suku <i>Oxalidaceae</i> , tinggi pohon mencapai 5–12 m, berdaun majemuk, buahnya ada yang manis (belimbing manis) dan ada yang dapat dibuat sayur (belimbing wuluh)”
32	strawberry <i>stroberi</i>	A low plant with broad leaves, long stems, and rough hair, whose fruit is red with soft seeds and a sweet taste, usually made into jam “tanaman rendah, daunnya lebar, bertangkai panjang dan berbulu kasar, buahnya berwarna merah, berbiji lembut dan rasanya manis, biasa dibuat selai; arbei”
33	sugar apple <i>srikaya</i>	a herbaceous plant that reaches 2–7 m in height, the fruit is round, the outer skin is rough and has many eyes and is green and whitish, the flesh is white, rough, has many seeds, and has a sweet taste [<i>Anona squamosa</i>] “tanaman perdu yang tingginya mencapai 2–7 m, buahnya berbentuk bundar, kulit luarnya kasar bermata banyak dan berwarna hijau keputih-putihan, daging buahnya berwarna putih, kasar, berbiji banyak, dan manis rasanya [<i>Anona squamosa</i>] ”
34	tamarillo <i>terung Belanda</i>	A shrub tree, up to 6.5 m tall, whose fruit is much, eaten as is or processed into jam “pohon perdu, tinggi mencapai 6,25 m, berbuah banyak, dimakan mentah atau diolah menjadi selai”
35	tomato <i>tomat</i>	A vegetable plant whose stems and leaves are hairy, whose young fruits are green and red when ripe, eaten raw or as vegetables “tanaman sayuran, batang dan daunnya berbulu halus, buah yang muda berwarna hijau, jika masak berwarna merah, dimakan mentah atau disayur; terung bali”

APPENDIX B

Vegetable list from KBBI/GDIL

No.	Vegetable	Definition
1	asparagus <i>asparagus</i>	A Liliaceae plant, the tip of the single root (bamboo shoot) is made for vegetables, especially those that have not been exposed to sunlight, white, soft, and fat “tumbuhan <i>Liliaceae</i> , ujung akar tunggalnya (rebung) dibuat sayur, terutama yang belum terkena sinar matahari, berwarna putih, lunak, dan gemuk”
2	bamboo shoot <i>rebung</i>	sprout (future stems) reeds are still small and still young, usually made of vegetables “anak (bakal batang) buluh yang masih kecil dan masih muda, biasa dibuat sayur”
3	basil <i>kemangi</i>	A shrub, often branching a lot, up to 150 cm high, the leaves smell good, used as fresh vegetables or to add to the smell of fish, meat, and so on

		“terna atau perdu, sering kali bercabang banyak, tinggi mencapai 150 cm, daunnya berbau wangi, digunakan sebagai lalapan atau penambah bau harum pada masakan ikan, daging, dan sebagainya”
4	beet <i>bit</i>	A vegetable whose tubers are purplish red, the leaves can be made into vegetables, the tubers are usually used as an ingredient in health drinks “sayuran yang umbinya berwarna merah keunguan, daunnya bisa dibuat sayur, umbinya biasa digunakan sebagai bahan minuman kesehatan”
5	bitter gourd <i>peria</i>	a creeping plant, its small yellow flowers are almost similar to cucumber flowers, the fruit is like a cucumber, has a non-slip skin surface, has small nodules, slightly bitter in taste, the leaves are green and jagged, useful for curing gout “tumbuhan yang menjalar, bunganya kecil-kecil berwarna kuning hampir serupa dengan bunga mentimun, buahnya seperti mentimun mempunyai permukaan kulit yang tidak licin, berbintil-bintil kecil, agak pahit rasanya, daunnya berwarna hijau dan bergerigi, bermanfaat untuk menyembuhkan sakit encok”
6	bok choy <i>pakcoi</i>	A vegetable with rounded or ovate edges, not bulbous, with broad stalks without wings, white, greenish-white, or green “sayuran berdaun membundar atau membundar telur berpinggir, tidak membongkol dengan tangkai melebar tidak bersayap, berwarna putih, putih kehijauan, atau hijau”
7	broccoli <i>brokoli</i>	A vegetable with large leaves and green, fleshy stem which elongated and branched “sayuran, berdaun besar, berwarna hijau, gagang mendaging, memanjang, dan bercabang-cabang”
8	cabbage <i>kubis</i>	A sizeable leafy vegetable, with a round concave shape; sitting densely in clusters; globe-like shape like a ball; white, greenish-white, or reddish “sayuran berdaun besar, bundar mencekung, duduk padat menggerombol, bulat membongkol seperti bola, putih, putih kehijauan atau kemerahan”
9	calabash <i>labu air</i>	A pumpkin, the leaves are kidney-shaped and long-stemmed, the flowers are large and green, with many seeds, the young fruit is made into vegetables, when it is old it has a hard skin and can be used as a household appliance, such as a scoop; white pumpkin [Lagenaria leucantha] “buah labu, daunnya berbentuk ginjal dan bertangkai panjang, bunganya besar berwarna hijau, berbiji banyak, buah yang muda dibuat sayur, jika sudah tua berkulit keras dan dapat digunakan sebagai alat rumah tangga, seperti ciduk; labu putih [Lagenaria leucantha] ”
10	carrot <i>wortel</i>	a vegetable rooted in fleshy pegs, yellow-orange, rich in sugars, vitamins, and mineral salts “tanaman sayuran berakar pasak berdaging, berwarna kuning jingga, kaya akan zat gula, vitamin, dan garam mineral”
11	cauliflower <i>kembang kol</i>	A vegetable with dense inflorescence clumps rounded like a ball, white or cream, on short fleshy peduncles “sayuran berdaun besar memusar, gumpalan perbungaannya padat membongkol membulat seperti bola, berwarna putih atau krem, pada gagang pendek mendaging”
12	cassava <i>singkong</i>	Cassava (ubi kayu) “ubi kayu”
13	celery <i>seledri</i>	A shrub, about 40 cm high, stems square and longitudinal grooves, flowers are small green, usually used as a food seasoning, such as soups and meatballs

		“terna tegak, tinggi sekitar 40 cm, berbatang persegi dan beralur membujur, bunganya kecil-kecil berwarna hijau, biasanya digunakan sebagai penyedap makanan, seperti sup dan bakso”
14	chayote <i>labu siam</i>	A vine that creeps on other plants that can reach a length of several meters, the fruit resembles an avocado, but not flat, or star fruit, thin skin with thick flesh, gummy, lots of water and one seed, the colour of the fruit is green-white, and the flesh is pure white “tanaman merambat pada tanaman lain yang dapat mencapai panjang beberapa meter, buahnya menyerupai buah avokad, tetapi tidak rata atau berbelimbing, berkulit tipis dengan daging buah tebal, bergetah, banyak airnya dan berbiji satu, warna buah hijau keputih-putihan dan daging buahnya putih bersih”
15	Chinese okra <i>oyong</i>	Vine plant, stems and leaves hairy, young leaves in vegetables, the fruit is oblong in the shape of a starfruit and tapered at both ends, cooked as a vegetable; gambas; petola [<i>Luffa acutangula</i>] “tanaman menjalar, batang dan daunnya berbulu, daun yang muda disayur, buahnya bulat panjang berbentuk belimbing dan meruncing pada kedua ujungnya, dimasak sebagai sayur; gambas; petola [<i>Luffa acutangula</i>] ”
16	choy sum <i>caisim</i>	A vegetable with branched stems, leaves curved round the eggs; green, long slender stems that do not hug the stem “sayuran, batang bercabang, daun menyudip membundar telur, berwarna hijau, bertangkai langsing panjang yang tidak memeluk batang”
17	coriander <i>ketumbar</i>	A shrub, the leaves have lobes, the flowers are compound umbrella-shaped with white or pink, the fruit is small round yellowish brown, usually used for seasoning. “Tumbuhan perdu, daunnya bercuping, bunganya berbentuk payung majemuk dengan warna putih atau merah jambu, buahnya bulat kecil berwarna coklat kekuning-kuningan, biasa digunakan untuk bumbu”
18	corn <i>jagung</i>	a plant from the Gramineae family, the stem is solid reaching 2 m; broad-ribbed leaves; when about 3 months old, the fruit can be eaten as a staple food “tanaman yang termasuk keluarga <i>Gramineae</i> , batangnya pejal mencapai 2 m, berdaun pita lebar, umur sekitar 3 bulan, buahnya dapat dimakan sebagai makanan pokok”
19	cosmos <i>kenikir</i>	A shrub from the Compositae genus, the flowers are yellow or orange, the smell is unpleasant, the leaves are eaten as vegetables “tumbuhan perdu, termasuk suku <i>Compositae</i> , bunganya berwarna kuning atau jingga, baunya kurang sedap, daunnya dimakan sebagai sayur”
20	eddoe <i>talas</i>	bulbous plants, the young leaves and young stalks can be vegetable, the tubers are the staple food in Irian; taro [<i>Colocasia esculenta</i>] “tumbuhan berumbi, daun muda dan tangkai mudanya dapat disayur, umbinya menjadi makanan pokok di Irian; keladi [<i>Colocasia esculenta</i>] ”
21	fennel <i>adas</i>	a plant with a lot of sap that is about 1.5 m high, the seeds of which are used as oil for medicine “tumbuhan bergetah yang tingginya kira-kira 1,5 m, bijinya dijadikan minyak untuk obat”
22	garlic <i>bawang putih</i>	A shrub, 30–60 cm tall, tuber consists of stems with small tubers or cloves wrapped in dry scales, used as a mixture of cooking spices and flavoring various dishes “terna tegak, tinggi 30–60 cm, umbinya terdiri atas batang dengan umbi-umbi kecil atau siung yang dibungkus oleh sisik-sisik kering, digunakan sebagai campuran bumbu masak dan penyedap berbagai masakan”

23	green bean <i>buncis</i>	A leguminous plant, their young leaves and fruit are made into vegetables “tumbuhan jenis kacang-kacangan, daun dan buahnya yang muda dibuat sayur”
24	long bean <i>kacang panjang</i>	A bean whose tree is twisted, the fruit is long with seeds, used for vegetables “kacang yang pohonnya melilit, buahnya panjang berbiji-biji, dipakai untuk sayur”
25	mustard green <i>sawi</i>	A vegetable with broadleaf, wavy lobed leaf margins, with pale green, whose stalk is broad “sayuran, berdaun melebar, pinggir daun bercuping bergelombang, berwarna hijau pucat, dengan tulang dan tangkai melebar”
26	onion <i>bawang bombai</i>	Big shallot “bawang besar”
27	parsley <i>peterseli</i>	A shrub, a type of celery, the stem is square, the leaves are curly light green, used as a kitchen spice and to decorate dishes “sayuran, berdaun melebar, pinggir daun bercuping bergelombang, berwarna hijau pucat, dengan tulang dan tangkai melebar”
28	poh pohan <i>pohpohan</i>	A shrub with a height of up to 5 m, the leaves are soft, fragrant, oval in shape with a pointed tip, the leaf veins are clear, usually eaten as a salad “tumbuhan terna dengan tinggi mencapai 5 m, daunnya lunak berbau harum, berbentuk bulat telur ujung meruncing, pertulangan daun jelas, biasanya dimakan sebagai lalap”
29	radish <i>lobak</i>	A vegetable with white tubers; tubers and leaves are usually made into vegetables “sayuran yang umbinya berwarna putih, umbi dan daunnya biasa dibuat sayur”
30	shallot <i>bawang merah</i>	An onion used in cooking and also used in medicine as a mixture “bawang yang dipakai dalam masakan dan juga digunakan dalam pengobatan sebagai campuran”
31	spinach bayam	the name of the group of leaf vegetables, the shape of the leaves is oval with a pointed tip and clear veins, the flowers are in the form of an upright panicle (there are many kinds, some are made of vegetables, some are for medicine) “nama kelompok sayuran daun, bentuk daunnya bulat telur dengan ujung meruncing dan urat-urat yang jelas, bunganya berbentuk malai yang tegak (banyak macamnya, ada yang dibuat sayur, ada yang untuk obat)”
32	sprout taoge	A sprout from legumes such as green beans, soybeans “kecambah dari kacang-kacangan seperti kacang hijau, kacang kedelai”
33	sweet leaf <i>katuk</i>	A shrub, up to 3 m high, grows straight up with branches filled with leaves alternating on the stems, the leaves can be vegetables, the small white fruit can be made into sweets “perdu, tinggi mencapai 3 m, tumbuh lurus ke atas dengan ranting-ranting yang dipenuhi daun berselang-seling pada tangkainya, daunnya dapat disayur, buahnya yang kecil berwarna putih dapat dibuat manisan”
34	water spinach <i>kangkung</i>	A creeping vegetable with a watery stem, the leaves are shield-shaped and tapered at the ends, has long stems with the upper leaf surface darker green than the lower surface, the flowers are trumpet-shaped lilac-coloured, the fruit is oval “tumbuhan sayuran yang menjalar, batangnya berair, daunnya berbentuk tameng dan meruncing pada bagian ujungnya, bertangkai panjang dengan permukaan daun sebelah atas berwarna hijau yang lebih tua daripada permukaan sebelah bawah, bunganya berbentuk trompet berwarna lila, buahnya berbentuk bulat telur”

35	yellow velvetleaf <i>genjer</i>	A swamp plant; the leaves are light green, oval in shape with long and thick stalks, and young leaves and flowers in the form of buds which can be consumed as vegetable “tumbuhan rawa, daunnya berwarna hijau muda berbentuk bulat telur dengan tangkai yang panjang dan tebal, daun yang muda dan bunga yang berupa kuncup dapat disayur; genjer; kelay ‘eceng”
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APPENDIX C
Flower list from KBBI/GDIL

No.	Flower	Definition
1	acacia <i>akasia</i>	tree, up to 20 m high, flowers are yellow or white in series, the wood is pulped and used as fuel [Acacia auriculiformis] “pohon, tinggi hingga 20 m, bunganya berwarna kuning atau putih berangkai-rangkai, kayunya dibuat pulp dan berguna sebagai bahan bakar [Acacia auriculiformis] ”
2	amaryllis <i>amarilis</i>	ornamental plant belonging to the Amaryllidaceae tribe, large dark red flowers “tanaman hias termasuk dalam suku <i>Amaryllidaceae</i> , bunga besar berwarna merah tua”
3	anthurium <i>anturium</i>	ornamental plant whose leaves are wide and green, the flowers are covered in red or white, many kinds are like waves of love “tanaman hias yang daunnya lebar dan berwarna hijau, bunganya berselubung merah atau putih, banyak jenisnya seperti gelombang cinta”
4	aster <i>aster</i>	a plant native to North America, including the Compositae tribe, the flower is red, yellow, purple, white, or pink [Aster corvifollus] “tumbuhan yang berasal dari Amerika Utara, termasuk suku <i>Compositae</i> , warna bunganya merah, kuning, ungu, putih, atau merah muda [Aster corvifollus] ”
5	azalea <i>azalea</i>	poisonous ornamental plant, flowers are white, red, yellow, blue, purple, blooms in spring, lasts for several weeks “tanaman hias yang mengandung racun, bunganya berwarna putih, merah, kuning, biru, ungu, mekar di musim semi, bertahan selama beberapa minggu”
6	begonia <i>begonia</i>	ornamental plant with few flowers, stems, stalks, leaves with fine thorns [Begoniaceae] “tanaman hias yang tidak banyak bunganya, batang, tangkai, daunnya berduri-duri halus [Begoniaceae] ”
7	bougainvillea <i>bugenvil</i>	a climbing shrub, with woody stems and thorns, used as an ornamental plant, the flowers are small like a trumpet, grow in groups of three, each has a wide protective leaf of various colours (red, white, orange, purple, and so on) so that unite like a flower “perdu yang memanjat, berbatang kayu dan berduri, digunakan sebagai tanaman hias, bunganya kecil-kecil seperti trompet, tumbuh berkelompok tiga, masing-masing mempunyai daun pelindung yang lebar berwarna macam-macam (merah, putih, jingga, ungu, dan sebagainya) sehingga membentuk kesatuan seperti sekuntum bunga”
8	camellia <i>kamelia</i>	A shrub with rose-like flowers “perdu dengan bunga mirip mawar”

9	cananga <i>kenanga</i>	A tree, up to 38 m high, the flowers are small yellowish-green, smells good “pohon, tinggi hingga 38 m, bunganya kecil berwarna hijau kekuning-kuningan, berbau harum”
10	carnation <i>anyelir</i>	ornamental plants whose flower ends are widened with fringed edges, the colours vary, some are red, pink, white, and so on “tanaman hias yang ujung bunganya melebar dengan tepi berumbai-rumbai, warnanya bermacam-macam, ada yang merah, merah muda, putih, dan sebagainya”
11	celosia <i>jengger ayam</i>	An annual shrub, grows upright, up to 90 cm tall, usually planted in gardens and yards, the stems are thick and strong with single leaves that grow alternately, and are elongated in shape with a tapered tip. The colour is purple, red, or yellow “terna semusim, tumbuh tegak, tinggi hingga 90 cm, biasanya ditanam di taman-taman dan halaman, batangnya tebal dan kuat berdaun tunggal yang tumbuh berseling, dan berbentuk memanjang dengan ujung meruncing bunganya berbentuk bulir, tebal mendaging, bagian atas melebar seperti jengger ayam jago, warnanya ada yang ungu, merah, atau kuning”
12	cherry blossom <i>sakura</i>	white or pink flowers that bloom in early summer in Japan “bunga berwarna putih atau merah jambu yang mekar pada permulaan musim panas di Jepang”
13	chrysanthemum <i>krisantemum</i>	A compound flowering shrub from the Compositae genus that is cultivated for their yellow or white flowers “perdu berbunga majemuk termasuk suku <i>Compositae</i> yang dibudidayakan untuk diambil bunganya yang berwarna kuning atau putih”
14	clover <i>semanggi</i>	creeper plant, the leaves are in the form of four circles on one stalk, the leaves are edible “tumbuhan menjalar, daunnya berbentuk empat bulatan di atas satu tangkai, daunnya dapat dimakan”
15	daffodil <i>narsis</i>	A plant with white, cream, or yellow flowers, found in subtropical areas “tumbuhan berbunga putih, krem, atau kuning, terdapat di daerah subtropis”
16	dahlia <i>dahlia</i>	a plant whose roots are tuberous (bulb), the colour of the flowers varies “tumbuhan yang akarnya berbonggol (berumbi), warna bunganya bermacam-macam”
17	daisy <i>aster</i>	A plant originating from North America, including the Compositae tribe, the colour of the flowers is red, yellow, purple, white, or pink “tumbuhan yang berasal dari Amerika Utara, termasuk suku <i>Compositae</i> , warna bunganya merah, kuning, ungu, putih, atau merah muda”
18	frangipani <i>kemboja</i>	tree with crooked trunk and soft wood, up to 6 m high, fragrant flowers, yellowish white, dark red, and so on, usually planted in cemeteries “pohon yang berbatang bengkok dan berkayu lunak, tinggi hingga 6 m, bunganya harum berwarna putih kekuning-kuningan, merah tua, dan sebagainya, biasa ditanam di pekuburan”
19	gardenia <i>kacapiring</i>	a shrub used as an ornamental plant, the flowers are fragrant, white with stacked petals “perdu yang digunakan sebagai tanaman hias, bunganya wangi, putih dengan daun bunga yang bersusun-susun”
20	geranium	ornamental plant, the flowers are at the end of the stem or branch, in the form of a circle of five crowns, can be used as a small wound medicine

	<i>tapak dara</i>	“tanaman hias, bunganya di ujung batang atau cabang, berbentuk lingkaran lima helai mahkota, dapat digunakan sebagai obat luka kecil”
21	gerbera <i>gerbera</i>	wet-trunked ornamental plant, single flowered at the end of the stalk in the form of a yellow, red or pink ribbon flower “tumbuhan hias berbatang basah, berbunga bongkal tunggal pada ujung tangkainya berbentuk bunga pita berwarna kuning, merah atau merah jambu”
22	golden trumpet <i>alamanda</i>	a gummy shrub that is widely grown as an ornamental plant, the flowers are large yellow and trumpet-shaped “semak bergetah yang banyak ditanam sebagai tanaman hias, bunganya besar berwarna kuning dan berbentuk trompet”
23	hibiscus <i>kembang sepatu</i>	A shrub, can be planted as an ornamental plant; the flowers are colourful; some are red, white, yellow “perdu, bisa ditanam sebagai tanaman hias, bunganya berwarna-warni, ada yang merah, putih, kuning”
24	hydrangea <i>kembang bokor</i>	shrub 1-2 m high, single and broad leaves, compound flowers form a rounded series, white, pink, and blue, native to Japan, leaves and roots are used as a remedy for fever and sore throats “perdu tinggi 1--2 m, berdaun tunggal dan lebar, bunga majemuk membentuk rangkaian membulat, berwarna putih, merah muda, dan biru, berasal dari Jepang, daun dan akar digunakan sebagai obat demam dan sakit tenggorokan”
25	Indian lotus <i>seroja</i>	aquatic plant whose rhizomes are immersed in mud, large rounded leaves, large pink flowers, upright sticking out above the water surface “tumbuhan air yang rimpangnya terbenam dalam lumpur, daunnya besar membundar, bunganya besar berwarna merah jambu, tegak mencuat ke atas permukaan air”
26	jasmine <i>melati</i>	A shrub of the Rubiaceae tribe, usually planted in the yard, the colour of the flowers is white in the shape of a star, smells very fragrant, and is often used in various traditional ceremonies “tumbuhan perdu suku <i>Rubiaceae</i> , biasanya ditanam di halaman rumah, warna bunganya putih berbentuk bintang, berbau sangat harum, sering digunakan dalam berbagai upacara adat”
27	lavender <i>lavender</i>	shrub, the flowers are fragrant, clustered, and bluish-purple, the leaves are grey and very thin “tumbuhan semak, bunganya harum, berkelompok, dan berwarna ungu kebiruan, daunnya berwarna abu-abu dan sangat tipis”
28	lily <i>lili</i>	ornamental plant originating from Japan or China, the flowers are funnel-shaped white or dark red stripes, propagated by tubers “tanaman hias berasal dari Jepang atau Cina, bunganya berbentuk corong berwarna putih atau bergaris-garis merah tua, dibiakkan dengan umbi”
29	orange jessamine <i>kemuning</i>	a low tree from Rutaceae genus, up to 7 m tall, has compound leaves, has inverted ovoid shape with a pointed tip and glossy smooth top, with white flowers, widely used as an ornamental plant, the trunk is usually made of sticks, boxes, or kris sheaths “pohon rendah, termasuk suku <i>Rutaceae</i> , tinggi mencapai 7 m, berdaun majemuk, berbentuk bulat telur terbalik dengan ujung runcing, bagian atas licin berkilap, bunganya berwarna putih, banyak dimanfaatkan sebagai tanaman hias, batangnya biasa dibuat tongkat, kotak, atau sarung keris”
30	orchid <i>anggrek</i>	A pasilan plant with beautiful flowers and many kinds “tumbuhan pasilan yang bunganya indah dan banyak macamnya”

31	rafflesia <i>rafflesia</i>	tropical parasitic plants, including the Rafflesiaceae family, have green leaves, short stems on top, there is only one flower that can grow very large, the largest species is found in Sumatra, 1 m diameter [Rafflesia arnoldii] “tumbuhan parasit tropis, termasuk suku <i>Rafflesiaceae</i> , memiliki zat hijau daun, berbatang pendek di atasnya, hanya terdapat satu bunga yang dapat tumbuh sangat besar, jenis yang terbesar terdapat di Sumatra, bergaris tengah 1 m [Rafflesia arnoldii] ”
32	rose <i>mawar</i>	A shrub of the Rosaceae genus, covering hundreds of species, growing upright or climbing, the stems are thorny, the flowers are various colours, such as red, white, pink, dark red, and smell good “tanaman perdu suku <i>Rosaceae</i> , meliputi ratusan jenis, tumbuh tegak atau memanjat, batangnya berduri, bunganya beraneka warna, seperti merah, putih, merah jambu, merah tua, dan berbau harum”
33	saraca asoca <i>angsoka</i>	A flowering plant is usually used as an ornamental plant (there are various types) “tanaman berbunga biasa dijadikan sebagai tanaman hias (ada berbagai jenis)”
34	spider lily <i>bakung</i>	A shrub, up to 125 cm tall, grown as an ornamental plant, the flowers are white or red, the roots are used to treat wounds and are considered an antidote, the fruit and seeds are mixed in medicinal herbs for yaws “terna, tinggi hingga 125 cm, ditanam sebagai tanaman hias, bunganya berwarna putih atau merah, akarnya digunakan untuk mengobati luka dan dianggap sebagai penawar racun, buah dan bijinya dicampurkan dalam ramuan obat penyakit puru”
35	sunflower <i>bunga matahari</i>	a plant whose flowers are large and round yellow, the seeds of which can be buttered; kanigara [Helianthus annuus] “tanaman yang bunganya besar dan bundar berwarna kuning, bijinya dapat dibuat mentega; kanigara [Helianthus annuus] ”

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Erina Andriani
English Education Master's Programme
Sanata Dharma University, Yogyakarta, Indonesia
andrianierina@gmail.com

Barli Bram (corresponding author)
English Education Master's Programme
Sanata Dharma University, Yogyakarta, Indonesia
barli@usd.ac.id

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