

## UPDATE PENELITIAN PASAK BUMI - SEBARAN

1. Heriyanto, N. M., Sawitri, R., & Subiandono, E. (2018). Kajian ekologi dan potensi pasak bumi (*Eurycoma longifolia* Jack.) di kelompok hutan sungai Manna-sungai Nasal, Bengkulu.

### *ABSTRACT*

The study indicated that 88 species found belonged to 29 families. The predominant species was *Shorea parvifolia* (meranti) and *Dipterocarpus costulatus* (keruing). The highest dominance value belonged to second transect (0,0998) and the lowest dominant value was the fourth transect (0,0526). The highest diversity index value belonged to fifth transect (2,28) and the lowest of diversity index value was fourth transect (1,41). The abundance of pasak bumi was different in transect, for trees level it was 2 individuals/ha (first transect and third transect), however, in the second, fourth and fifth transect were none. For belta level, it was 10 individuals/ha (the first transect), 20 individuals/ha (the third transect) and 20 individuals/ha (the fifth transect), while in the second and fourth transect were none. For seedling level it was 280 individuals/ha (the third transect), 60 individuals/ha (the fourth transect) and 100 individuals/ha (the fifth transect), while in the first and the second were none. This intolerant species was adapted in slope and dry areas. The rarity of pasak bumi was not affecting local people because they were seldom used for traditional medicine.

Key words: *Eurycoma longifolia*, ekologi, potency, Manna river-Nasal river, Bengkulu.

2. Hadiah JT, Yuzammi, Purnomo DW. 2019. Kajian Habitat Dan Populasi Pasak Bumi (*Eurycoma Longifolia* Jack) Di Blok Barat Kawasan Hutan Konservasi Pt Sabhantara Rawi Sentosa, Kutai Timur, Kalimantan Timur. Buletin Kebun Raya 22(1): 31-46.

Diambil dari <https://publikasikr.lipi.go.id/index.php/buletin/article/view/36>

### *ABSTRACT*

Pasak bumi (*Eurycoma longifolia* Jack) is an Indonesian native plant species and widely used for its medicinal properties from generation to generation. The demand for this medicinal plant is increasing, both nationwide and worldwide. In contrary to the increasing demands, there are no plantations or such efforts to cultivate this plant to meet commercial needs. Thus, people fulfil the demands by harvesting the plants from its natural habitats in forests. In addition to this lack, there have been forest conversions into other uses such as mining, oil palm plantations and other uses. All those facts result in the decrease of pasak bumi population in the wild, and become the threats for the existence of this species. This study aims to observe the habitat and population of *Eurycoma longifolia* Jack in its natural habitat at the western block of the conservation forest of PT Sabhantara Rawi Sentosa in Kutai Timur, East Kalimantan. The study applied a transect survey method, comprising five transect lines, each transect contains 10 plots. The results showed that wild population of *E. longifolia* on the research site was very low. Only one seedling of *E. longifolia* found in the observation plots, however there were several individuals growing outside the observation plots. Heavy exploitation of the plant and forest conversion into other uses caused the population decrease. Researches to provide bases for commercial plantation of the *E. longifolia* are strongly recommended to ensure the existence of the species.

Keywords: *Eurycoma longifolia*, Kutai Timur, pasak bumi, population

3. Susilowati, A., Rachmat, H. H., Elfiati, D., & Hasibuan, M. H. (2019). The composition and diversity of plant species in pasak bumi's (*Eurycoma longifolia*) habitat in Batang Lubu Sutam forest, North Sumatra, Indonesia. *Biodiversitas Journal of Biological Diversity*, 20(2), 413-418.

#### **ABSTRACT**

Abstract. Susilowati A, Rachmat HH, Elfiati D, Hasibuan MH. 2019. The composition and diversity of plant species in pasak bumi's (*Eurycoma longifolia*) habitat in Batang Lubu Sutam forest, North Sumatra, Indonesia. *Biodiversitas* 20: 413-418. Pasak bumi (*Eurycoma longifolia* Jack) is one of the most popular medicinal plants in Indonesia. Currently, *E. longifolia* is being over-exploited due to its potential and popularity as herbal medicine and its high value in the market. Therefore, the study on the population structure of the species and habitat characterization is required to ensure successfulness of conservation of this species. The study was carried out in lowland forest, located in Limited Production Forest within the Register Number 40, situated administratively in Papaso Village, SubDistrict of Batang Lubu Sutam-Padang Lawas, North Sumatra, Indonesia. Batang Lubu Sutam forest is known as a source of pasak bumi material in North Sumatra. Every year tons of pasak bumi are collected from this forest and exported to Malaysia and surrounding countries. Due to illegal harvesting for its roots, pasak bumi has been seriously depleted in some areas in Batang Lubu Sutam forest. Therefore, current data on its population are needed for conservation effort of Batang Lubu Sutam's pasak bumi. The objectives of this study were to assess the structure of forest where pasak bumi grows and to determine the correct management for sustainability the future stocks. Vegetation analysis was carried out purposively in four transect belts, each consisting of five quadrats or plots. The results showed that the Importance Value Index of pasak bumi at seedling, sapling, pole and tree stages was 21.26%, 9.147%, 0, and 0 respectively. The Shannon Diversity Index (H) ranged between 3.050 and 3.220 and was inside its common value distribution. The evenness index was high, more than 0.85, at all stages of plant growth. The disappearance of pasak bumi at pole and tree stages indicates threatening condition for the sustainability of pasak bumi in the study sites because of excessive harvesting.

Keywords: Composition, diversity, pasak bumi, species

4. Sari, H. N., Kissinger, K., & Rudy, G. S. (2020). Komposisi Dan Sebaran Tumbuhan Berkhasiat Obat Berdasarkan Tingkatan Vegetasi Di Hutan Kerangas Kabupaten Barito Selatan. *Jurnal Sylva Scientiae*, 2(3), 465-473

#### **ABSTRACT**

ABSTRACT. Kerangas forest as a forest area with special character is suspected to have potency of medicinal plants. The objectives of this research are i) to obtain vegetation composition in the forest, ii) describe the distribution of medicinal plants based on vegetations levels, iii) identifying medicinal plants species based on local knowledge. The method used is the prited path by way of Purposive Sampling and semi structured interview method. The location of the research is categorized into 2 criteria, namely old secondary forest and young secondary forest. The result showed that the composition of species found were 18 species of vegetation in young secondary forest and 32 types of vegetation in old secondary forest. The highest distribution of medicinal plants in young secondary forest is found at the pole level of 40%. The highest distribution in the old secondary forest is found at the tree level of 20,83%. Identified research location there are 20 species, 10 of which have been used by society as material for treatment. The distribution of medicinal plants in old secondary forest more than the young secondary forest.

Keywords: Composition, Potency, Distribution, Medicinal Plants,

5. Rahmawati, K., Fefirenta, A. D., & Lestari, V. B. (2018). Studi Populasi dan Potensi Pasak Bumi (*Eurycoma longifolia* Jack) di Kabupaten Langkat, Propinsi Sumatera Utara. *Riset Sebagai Fondasi Konservasi dan Pemanfaatan Tumbuhan dan Satwa Liar*, 66.

**ABSTRACT**

Pasak bumi (*Eurycoma longifolia* Jack) merupakan salah satu jenis dari keluarga Simaroubaceae yang tumbuh di hutan-hutan pada kawasan tropis dan subtropis. Persebaran alami jenis ini di Indonesia berada di Pulau Sumatra dan Pulau Kalimantan. Tujuan dari penelitian ini adalah untuk mengetahui populasi dan potensi pasak bumi di Kabupaten Langkat Provinsi Sumatra Utara. Penelitian dilakukan dengan pembuatan 8 plot ekologi berukuran 20 m x 20 m dengan luas total 0,32 ha di kawasan hutan sekunder. Hasil penelitian menunjukkan bahwa kerapatan pasak bumi pada tingkatan hidup pohon sebesar 66 individu/ha dan semai sebesar 144 individu/ha, basal area sebesar 1,83 m<sup>2</sup>/ha. Pasak bumi tersebar secara acak di hutan dataran rendah dengan kerapatan individu tertinggi berada area dengan kanopi terbuka. /ha dan potensi pasak bumi sebesar 6,84 m<sup>3</sup>

Kata kunci: Langkat, pasak bumi, populasi, potensi, Sumatra Utara

6. Zulfahmi, N. & Rosmaina. 2015. Kepadatan dan Pola Penyebaran Pasak Bumi (*Eurycoma longifolia* Jack) di Zona Alaman Kuyang, Hutan Larangan Adat Kenegarian Rumbio. *Jurnal Agroteknologi* 6(1): 41-46.

***ABSTRACT***

The objective of this research was to know the density and distribution pattern of *E. longifolia* in the Alaman Kuyang zone of the forest reserve of Kenegerian Rumbio. The research used purposive sampling method. The observation plot is made in square plot which plot size was 20 x50 m. Results of this study showed that density of *E. longifolia* in Alaman Kuyang zone of forest reserve of Kenegarian Rumbio was 130 individual ha<sup>-1</sup>, which seedling phase is more dominance than sapling and pole phases. The density of *E. longifolia* was low due to increasing the harvesting of this species from forest reserve of Kenegarian Rumbio, and addition poor of mother trees in area study. Distribution pattern of *E. longifolia* were clumped with Morisita Index value > 1, this could be explained since seed of *E. longifolia* dispersed and grew not far from mother trees.

Keywords: *E. longifolia*, Distribution pattern, Morisita Index, Forest Reserve of Kenegarian Rumbio

7. Sinambela, S.U., Burhanuddin & S.M. Kartikawati. 2017. Habitat dan Asosiasi Pasak Bumi (*Eurycoma longifolia* Jack.) di Bukit Benuah Kecamatan Sungai Ambawang Kabupaten Kubu Raya. *Jurnal Hutan Lestari* 5(3): 789-798

### *ABSTRACT*

Pasak bumi is one of West Kalimantan's endemic forest products that has high economic value, which has many benefits in medicine. The purpose of this research is to investigate the habitat condition and pasak bumi (*Eurycoma longifolia* Jack) association in Bukit Benuah Sub-district of Sungai Ambawang District Kubu Raya. Data collected population, habitat, association, soil, climate, and topography. The condition were survey method, purposive sampling technique single plot, with a plot size of 20 x 20 m, that 0,24 ha . Results showed that population pasak bumi in Bukit Benuah found as many as 22 individuals. The physical condition of the Pasak Bumi (*Eurycoma longifolia* Jack) habitat in Bukit Benuah is in the altitude between 90 - 120 m dpl. The soil fertility status of the area is low, the type of soil is Podsolik Merah Kuning (PMK), has a smooth texture and included in clay class (clay), with average soil 6,18 pH. The slope of the hill is rather sloping and the area is not flooded. The dominant vegetation type means acacia with INP 101,4%, kemayan with INP 81,34%, keranji with INP 49,28%, leban with INP 34,98%, durian with INP 23,65%. Species associated with pasak bumi are *Acacia mangium*, *Diospyros macrophylla* Bl., *Microcos tomentosa* Sm., *Dialium Indicum* L, *Durio zibethinus* Murr, *Vitex pinnata*.

Keywords: Association, Habitat, Pasak bumi (*Eurycoma longifolia* Jack)

8. Andasari, P., & Navia, Z. I. (2019). Populasi Dan Pola Distribusi Pasak Bumi (*Eurycoma Longifolia* Jack) Di Ekowisata Bukit Lawang Taman Nasional Gunung Leuser. *Biologica Samudra*, 1(2), 1-5.

**ABSTRACT**

Gunung Leuser National Park is one of the world heritages in Indonesia. The purpose of knowing population and distribution of population of pasak bumi (*E. longifolia*) in Gunung Leuser National Park Bukit Lawang. Practical work carried out in January until April 2018. The sampling method is done by purposive random sampling and sampling data by making 4 sample plot. The results showed that the number of pasak bumi in Bukit Lawang found only 19 individuals. The highest density of pasak bumi highest density for each stratification of tree growth was on track 11 of 25 individuals/ ha, track on track 2 of 200 individuals / ha, stakes on track 11 of 25 individuals / ha, and seedling that is on track 2 as many as 1250 individuals/ ha. The pasak bumi distribution pattern is random.



9. Fithria, A. (2020, June). Habitat suitability modelling of Pasak Bumi (*Eurycoma longifolia* Jack.) in Riam Kanan conservation forest zone using Sentinel-2 biophysical parameters. In *IOP Conference Series: Earth and Environmental Science* (Vol. 500, No. 1, p. 012020). IOP Publishing.

#### **ABSTRACT**

Pasak bumi usually grow under the tree canopies. So that the character of its habitat is assumed to be estimated using several biophysical parameters of the tree canopy around it. The purpose of this research was to model the suitability of the pasak bumi habitat in the Riam Kanan conservation forest zone, using a number of biophysical parameters extracted from Sentinel-2 MSI imagery. Those parameters are Leaf Area Index (LAI), Canopy Chlorophyll Content (CCC), Canopy Water Content (CWC), Fraction of Vegetation Cover (FVC), and Fraction of Absorbed Photosynthetically Active Radiation (FAPAR). Ground surveys were carried out to find the coordinates of pasak bumi using accidental sampling method. Pasak bumi coordinate points are overlaid with biophysical parameters. Statistical analysis was then applied to predict the range of population values from each biophysical parameter, using Confidence Interval (CI) 95%. The results of the research show that CI LAI 2.532-2.772, CI CCC 137.101- 158.028 gr/cm<sup>2</sup>, CI CWC 0.05-0.057 gr/m<sup>2</sup>, CI FVC 0.698-0.737, and CI FAPAR 0.732-0.765. The values of these biophysical parameters directly describe the biophysical characteristics of the pasak bumi habitat in the research location. These CI values are then implemented using binary modelling to predict the habitat of pasak bumi. Based on the results of modelling, it was found that the area suitable for pasak bumi plants was an area of 1,807.91 hectares. This area has a proportion of 1.55% of the total area of the conservation zone. To improve accuracy, other biophysical parameters can be considered to be involved in modelling.